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Amendments to Regulations D and J

On June 22, 1972, the Board of Governors of the Federal Reserve System announced amendments to its Regulations D and J which are designed to restructure on a more equitable basis the reserve requirements of member banks and to modernize the nation's check collection system. The changes are basically the same as proposals the Board published on March 28 for public comment, but they have been modified in detail and method of application in the light of comments received.

The change in Regulation D, which governs member bank reserves, will restructure requirements against net demand deposits so that the same requirement ratio will apply to all member banks of equal size regardless of their location. Moreover, all banks with demand deposits of more than $400 million will be considered "reserve city banks". This method of classification is in contrast to the current one in which the "reserve city" designation is generally applied to larger banks in larger cities, with all others commonly called "country banks". At the present time, reserve city banks are required to hold reserves of 17 percent against net demand deposits under $5 million and of 17½ percent on net demand deposits over that amount, while the corresponding required reserve percentages for country banks are 12½ percent and 13 percent, respectively. When the scheduled changes become effective, a more graduated scale will apply and requirement ratios for most categories will be lowered. The restructuring will apply the following ratios to member banks:

Amount of net demand deposits	*Reserve percentages applicable*
First $2 million or less	8 percent
Over $2 million-$10 million	10 percent
Over $10 million-$100 million	12 percent
Over $100 million-$400 million	13 percent
Over $400 million	17½ percent

The new reserve requirements are to take effect in two steps. Beginning in the statement week of September 21 to September 27, the first three ratios—8 percent, 10 percent, and 12 percent—will apply to net demand deposits of $100 million and less, based on the average level of deposits during the week ending September 13. At the same time, the 17½ percent ratio that now applies to demand deposits between $100 million and $400 million at present reserve city banks will be reduced to 16½ percent. During the statement week from September 28 to October 4, the latter ratio will be reduced to 13 percent based on the average level of deposits during the week ending September 20.

Beginning September 21 an amendment to Regulation J, covering collection of checks and other items by Federal Reserve Banks, will become effective. From then on, all banks served by the System's check collection mechanism will be required to pay for checks drawn on them with funds immediately available on the day that the Federal Reserve presents the checks for payment. Currently, most banks outside cities with Federal Reserve facilities or payment areas served by the newly created Regional Check Processing Centers pay for checks in funds collectible one day or more after presentation. This change will result in a reduced volume of Federal Reserve float to such banks, although this effect will be offset in part by more rapid payment of funds to these banks. The Board is giving high priority to accelerating the development of additional Regional Check Processing Centers so that these banks can also have facilities for overnight check gathering, processing, and clearing.

The Board established conditions under which it will be appropriate for a Reserve Bank temporarily to waive penalties for member bank reserve deficiencies resulting from the impending changes in Regulations D and J. In this connection, the Board set the following guidelines:

—A waiver will be granted initially only for penalties on reserve deficiencies equal to a reduction in available funds that exceeds 2 percent of a member bank's net demand deposits.

—The amount of deficiency eligible for waiver of penalties will decrease 1 percent of net demand deposits for each quarter beginning January 1, 1973.

—No further waivers will be granted under this authority after June 30, 1974.

The net effect of these regulatory changes is expected to amount to a release of about $1.5 billion of reserves to the banking system. There will be a total release of about $3.5 billion from the restructuring of reserves and the waiver of penalties, offset in part by the $2 billion reduction in float resulting from the change in Regulation J. It is intended that open market operations will be adapted as needed, when the amendments go into effect, to neutralize the impact on monetary policy.

The Business Situation

Recent data indicate that economic activity has continued to expand briskly. Retail sales rose markedly in May but then dropped in June, according to preliminary information. Sales were probably held down in June by the storm which affected much of the East. Industrial production posted a moderate, though broadly based increase in May. Over the first five months of the year, output has risen at a rapid 9 percent annual rate. In May, personal income climbed at roughly the pace of the first four months of the year and the volume of residential housing starts increased after easing off in the two previous months. Moreover, there are tentative signs of some strengthening in inventory spending. The unemployment rate fell to a seasonally adjusted 5.5 percent in June, as employment increased and the civilian labor force declined by nearly 100,000 workers.

The latest price information suggests that inflationary pressures persist. Seasonally adjusted consumer prices, boosted by a rapid rise in prices of some nonfood commodities, increased at an annual rate of 4 percent in May. Retail food prices declined for the second consecutive month, but this improvement is not expected to be maintained. Wholesale prices of farm products and processed foods and feeds rose rapidly again in June, and industrial wholesale prices advanced at a disappointing 5 percent annual rate. June data reveal only a modest increase in wages for the second consecutive month, although over the Phase Two period as a whole wages have climbed considerably.

PRODUCTION, ORDERS, AND INVENTORIES

The Federal Reserve Board's index of industrial production rose in May by 0.5 percent on a seasonally adjusted basis, and the readings for the preceding three months were revised upward slightly. Thus, in recent months output has resumed rapid growth after the decline and subsequent stagnation associated with the recession of 1969-70 (see Chart I). Since the beginning of the year, industrial production has climbed at a fast 9 percent seasonally adjusted annual rate, roughly the pace of expansion registered between early 1961 and mid-1969, to reach a level only 0.3 percent below its peak of September 1969. The May increase in output was widespread, including gains in the production of consumer goods, business equipment, and intermediate products. On the other hand, output of defense and space equipment and of materials edged down a bit following sharp advances in April.

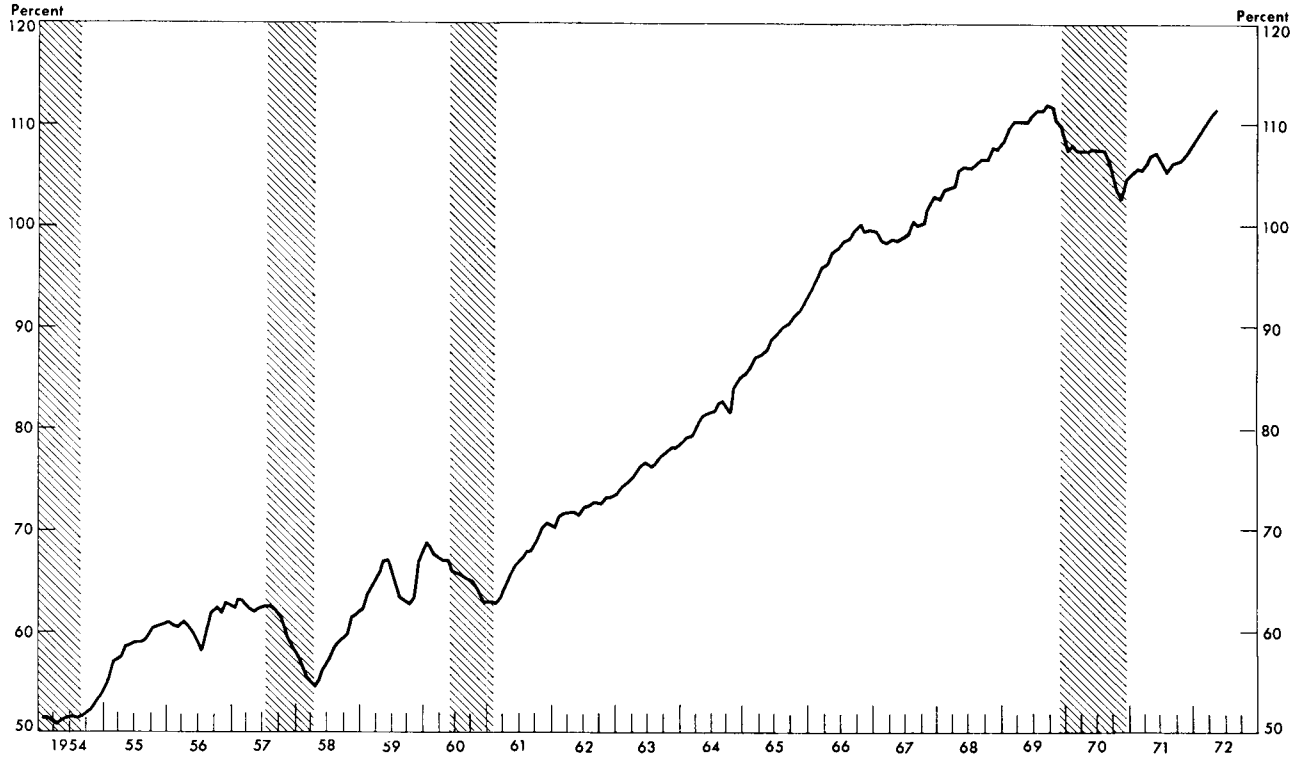
The May rise in production of consumer goods was 10 percent at an annual rate. Output of most appliances, furniture, and consumer nondurable goods increased, while automobile assemblies declined somewhat from their April pace despite the strength of automobile sales. Since December 1971, consumer goods output, seasonally adjusted, has advanced at an annual rate of 6.7 percent, with the increase concentrated largely in durable goods. Output of business equipment climbed at an annual rate of 8.3 percent in May, after an upward revised increase of nearly 17 percent in April. Over the first five months of 1972, production of business equipment has risen rapidly at an annual rate of 12 percent and, in May, stood at 7.5 percent above its level of a year earlier.

Orders placed with manufacturers of durable goods edged up by about $0.1 billion in May. Excluding the volatile transportation equipment sector, bookings rose by a healthy $0.7 billion, or 2.8 percent, to a seasonally adjusted $26.6 billion (see Chart II). This series, along with manufacturers' shipments, unfilled orders, and inventories, has recently been revised to reflect new bench marks derived from the annual *Survey of Manufacturers* and new seasonal adjustment factors. As a result, there have been substantial downward revisions in the orders and shipments series, while inventory levels, and therefore inventory-sales ratios, were revised upward. In any event, in May new orders for electrical machinery and primary metals rose, while bookings for transportation equipment fell more than $0.6 billion after posting a gain of similar magnitude in the previous month. Bookings for nondefense capital goods, a new category which replaces producers' capital equipment, were off slightly in May but

Chart I

INDUSTRIAL PRODUCTION

Seasonally adjusted; 1967=100



Note: Shaded areas represent recession periods, according to the National Bureau of Economic Research chronology. The dates of the 1969-70 recession are tentative.

Source: Board of Governors of the Federal Reserve System.

were still about 21 percent above the level of May 1971. Shipments of durable goods climbed modestly to a new record, while the backlog of unfilled orders increased for the eighth consecutive month.

There are tentative indications of some pickup in inventory spending after a prolonged period of sluggishness. During April, the book value of total business inventories increased at an $8.3 billion annual rate following an upward revised March gain of $6.2 billion. Trade stocks rose substantially, particularly at the wholesale level, but manufacturers' holdings declined slightly. However, preliminary May manufacturing data suggest a strengthening in inventory spending in this sector, as seasonally adjusted holdings climbed $4.9 billion at an annual rate. This gain occurred entirely in the durable goods sector. In 1972 thus far, manufacturers' inventories have risen at a $2.8 billion annual rate after remaining virtually flat throughout 1971. For all manufacturers, the ratio of inventories to sales was 1.69 in May, the same as April's upward revised level.

RETAIL SALES, PERSONAL INCOME, AND RESIDENTIAL CONSTRUCTION

Recent data provide impressive evidence of continued strengthening in consumer spending. In May, seasonally adjusted retail sales climbed $0.6 billion above the upward revised April level to a record $36.9 billion. Sales of both durables and nondurables increased, with automotive sales accounting for much of the strength in durables. Among nondurables, sales of general merchandise and food rose sizably. Preliminary June data indicate a drop in retail sales from the May peak, but spending was still a healthy $36.4 billion. Moreover, June sales were

undoubtedly held down somewhat by the tropical storm which affected much of the East Coast. Nevertheless, over the second quarter retail sales were a substantial 2.8 percent above the first-quarter average. In June, sales of new domestic-type automobiles moderated somewhat from their very rapid May pace to a 9 million unit seasonally adjusted annual rate, still a strong showing. Over the April-June period, sales of new domestic-type autos averaged 9.2 million units at an annual rate by comparison with an 8.7 million unit pace in the first quarter. Meantime, sales of imported cars were at an annual rate of 1.6 million units in June by comparison with 1.5 million units in both April and May.

Personal income posted a $4.8 billion increase in May, reaching a seasonally adjusted annual rate of $915.9 billion. It should be noted that month-to-month fluctuations in this series have been affected recently by retroactive payments of wage increases approved by the Pay Board, as well as by other special factors. After adjustment for these influences, the May gain in personal income was $5.3 billion, roughly in line with the adjusted increases of the past several months. Further, over the January-May period, personal income averaged $905.4 billion, 8 percent above the average of the first five months of 1971. Wage and salary disbursements were up moderately in May, with a rise in manufacturing payrolls providing about half of the overall gain. The durable goods sector, particularly primary and fabricated metals and machinery, accounted for most of the rise in manufacturing payrolls.

After declining for two consecutive months, the pace of private housing starts increased by 221,000 units in May to a volume of 2.3 million units at a seasonally adjusted annual rate. While this was below the extraordinarily strong performance of the first quarter, it nevertheless represented a healthy total by most other standards. The May advance was concentrated in starts of single-family units, which climbed to their highest level in four months. Newly issued building permits increased slightly in May as well. Recent information suggests a modest tightening in mortgage market conditions. The average interest cost on conventional new home mortgages inched higher in May as did the effective rate on loans for existing homes. Moreover, the secondary-market yields of Federal Housing Administration-insured loans edged up for the second consecutive month.

LABOR MARKET DEVELOPMENTS

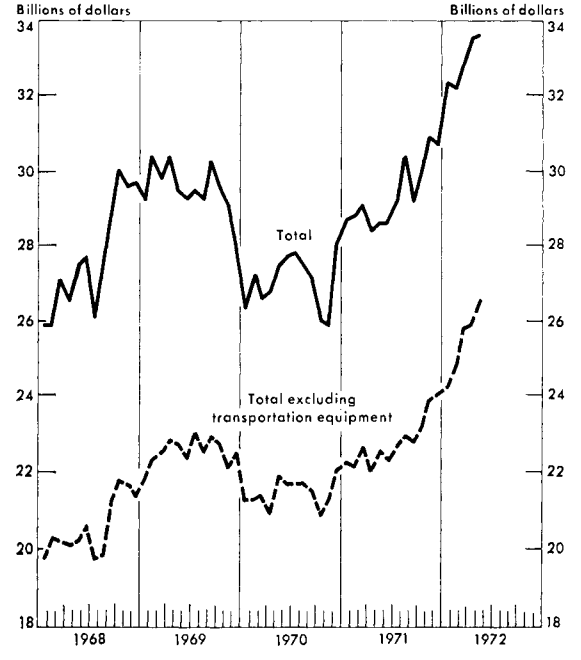
According to the monthly survey of households, civilian employment, seasonally adjusted, rose by 273,000 workers in June, while the labor force decreased by 91,000. As a consequence, the unemployment rate fell to 5.5 percent after holding steady at 5.9 percent over the previous three months. In June, the rates of unemployment for most major labor force groups declined, with a particularly pronounced drop in joblessness among teen-agers. This decline stemmed, in part, from a smaller than seasonal influx of young people into the labor force. At the same time, the unemployment rate for adult men dipped to 4 percent, compared with 4.3 percent in both April and May, and the rate of unemployment for adult women fell to 5.5 percent in June from 5.9 percent in May. On balance, these data suggest that the rather substantial increases in employment in recent months have begun to have an impact on joblessness. Over the April-June period, civilian employment averaged a sizable 589,000 above the level of the first quarter, an annual rate of increase of 2.9 percent. Expansion of the labor force was also rapid in the second quarter, amounting to 2.5 percent at an annual rate.

After several months of sizable gains, the most recent survey of establishments indicates only a small increase in nonfarm payroll employment in June. With this advance,

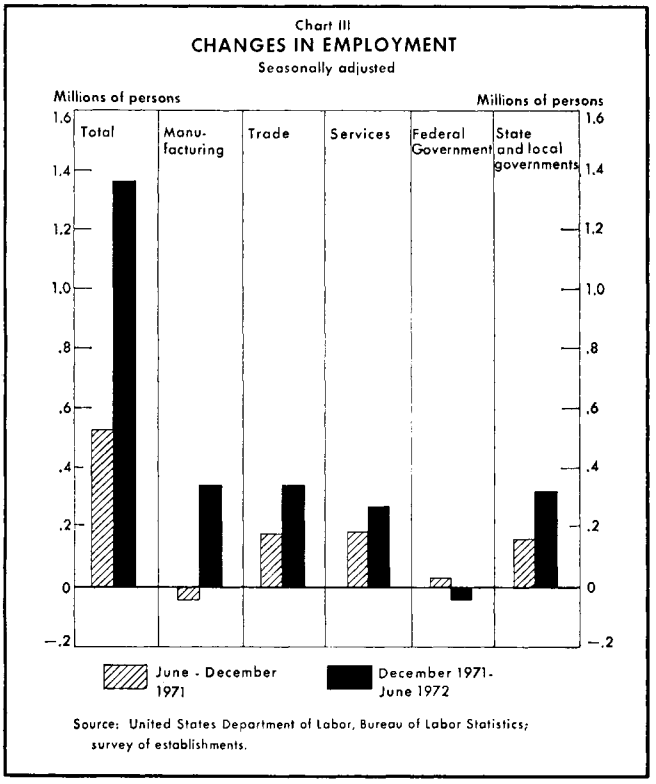
Chart II

NEW ORDERS FOR DURABLE GOODS

Seasonally adjusted



Source: United States Department of Commerce, Bureau of the Census.



nonfarm employment reached a level 2.7 percent above that of a year earlier. Growth has been more rapid since the end of 1971, proceeding at a 3.9 percent seasonally adjusted annual rate over the first half of this year. Manufacturing employment declined in June, but over the January-June period manufacturing payrolls have risen by a healthy 342,000 workers, or 3.7 percent at an annual rate. In contrast, during the last half of 1971, factory employment dropped by more than 40,000 workers (see Chart III). About 75 percent of the gain in manufacturing jobs over the last six months has occurred in durable goods industries. The rise has been widespread within the durables sector, as there have been sizable employment increases in primary and fabricated metals, machinery, electrical equipment, and transportation equipment. The average factory workweek and hours of overtime both were essentially unchanged in June.

Most other areas of the economy have experienced gains in employment in recent months, which surpassed the increases in the last half of 1971. For example, over the first six months of this year, employment in trade and services rose by 336,000 and 270,000 workers, respectively, whereas the corresponding advances between June and December 1971 were less than 200,000 workers in each case. Total government employment, including Federal, state, and local but excluding the armed forces, rose slightly in June to a level 3.7 percent above that of a year earlier. Thus far in 1972, government employment has increased at an annual rate of 4.3 percent. All of this increase has been at the state and local government levels, as such employment rose by 317,000 workers over the six months ended in June. In contrast, reductions were ordered in Federal employment as part of the package of new economic policies instituted in August 1971 and, over the past ten months, Federal civilian employment declined in addition to the sizable reduction in the armed forces.

This pattern of growth in government employment has prevailed for some time. Between June 1969 and June 1971, Federal civilian employment dropped by about 140,000 workers while employment at the state and local levels climbed by nearly 760,000. As a result, state and local governments have accounted for an increasing portion of overall government employment. In June 1972, state and local employment constituted more than 80 percent of civilian government employment, whereas in June 1969 it made up about 77 percent of the total. The recent declines in Federal civilian employment have centered on the Department of Defense, as jobs in most other areas have held relatively steady.

Seasonally adjusted average hourly earnings of production and nonsupervisory workers in the private nonfarm economy, adjusted for overtime hours in manufacturing and for shifts in the composition of employment among industries, increased at a 1.8 percent annual rate in June. This marked the second consecutive month of modest growth in earnings. Over the seven months since the end of the wage freeze last November, the index has climbed at a considerably more rapid 7 percent rate, about the pace of 1970 and the first eight months of 1971. However, excluding the sharp advances of December and January which may have resulted from a post-freeze bunching of increases, earnings have advanced at an annual rate of only about 4.5 percent over the five months ended in June.

RECENT PRICE DEVELOPMENTS

The latest price statistics suggest that serious inflationary pressures still persist. The consumer price index rose at a 4 percent seasonally adjusted annual rate in May, despite the second consecutive monthly decline in retail food prices. Moreover, food prices advanced sharply at the wholesale level in May and June, and it is likely that consumer food prices will soon reflect these increases.

Reportedly, retail prices of meats and some other products increased considerably in the last half of June. Because of the timing of the survey, these rises probably will not affect the consumer price index until July. To help slow the advance of food prices, the President recently removed quota restrictions on imported meats and, shortly thereafter, controls were extended to cover prices of some unprocessed foods at the wholesale and retail levels. In any event, over the past three months, consumer prices have advanced moderately at an annual rate of 2.1 percent, while over the Phase Two period as a whole they have moved up at a 3.5 percent rate, modestly below the pace of the first eight months of 1971. Food prices have climbed at a 4.4 percent pace over the six months ended in May, somewhat slower than the 5 percent annual rate of gain registered in 1971 before the price freeze.

The May rise in the consumer price index stemmed from a rapid advance in prices of some nonfood commodities; in contrast, service charges increased moderately. Nonfood commodity prices rose at a 6.2 percent seasonally adjusted annual rate in May, the fastest pace in a year. Prices for used cars and gasoline climbed particularly sharply. With the large May increase, the index for all commodities less food has now risen at an almost 3 percent annual rate since the termination of the price freeze, the same pace as during the first eight months of 1971. Nevertheless, this still represents considerable improvement relative to the increases experienced in nonfood commodity prices in 1970 and 1969.

At the wholesale level the advance of prices has continued to be disappointingly rapid. In June, such prices, seasonally adjusted, climbed at a 5.7 percent annual rate. With this increase, wholesale prices have risen at a 5.2 percent rate following the termination of the price freeze, the same pace experienced over the first eight months of 1971. Wholesale prices of farm products and processed foods and feeds increased at nearly a 6 percent annual rate in June while, at the same time, industrial wholesale prices advanced at a 5 percent rate. Prices of hides, skins, leather, and related products and prices of lumber and wood products rose very sharply again in June. In Phase Two thus far, industrial wholesale prices have increased at a 4.3 percent annual rate by comparison with the 4.7 percent pace of the first eight months of 1971.

The Money and Bond Markets in June

Interest rates rose in the money and bond markets during June. Short-term rates began to rise early in the month, and the general consensus seemed to be that these rates might increase somewhat further, along with expanding economic activity. There were, in fact, several upward adjustments as the month progressed and, by the close, yields on most money market instruments were from ¼ to ½ percentage point higher than when the month opened.

Substantial investor resistance emerged to the lower rate levels established in the bond market during May but, even after prices were marked down on several issues in June, only modest and sporadic interest was displayed much of the time. There were several news developments during the month which apparently contributed to a fairly pervasive feeling that pressures in the long-term markets were also increasing, and investors tended to remain on the sidelines in anticipation of yet higher rates. These developments included announcements of accelerated rises in wholesale and consumer prices during May and discussions in the press that the Treasury's need for new cash during the fiscal year 1973 might be higher than previously estimated. The turmoil in the foreign currency markets during the latter part of the month was an additional factor depressing securities prices.

Indicative of the trend in the long-term markets during the month, The Bond Buyer index of yields on twenty municipal bonds climbed by 28 basis points to a level of 5.43 percent at the end of the month. In addition, the backlog of unsold tax exempts measured by inventories advertised in the Blue List mounted to the highest levels since mid-January before declining toward the end of June. Rates on new Aa-rated utility bonds rose to 7.60 percent from 7.25 percent at the start of the month. Yields on long-term Treasury bonds, on the other hand, were relatively steady, ranging for the most part from 4 to 13 basis points higher over the period.

BANK RESERVES AND THE MONEY MARKET

The increases in interest rates on most short-term instruments occurred in several steps during June. Yields on most maturities of dealer-placed prime commercial paper rose by ⅜ to ½ percentage point, while those on paper placed directly ranged from ¼ to ½ percentage point higher. A rise in rate of ½ percentage point was also posted on bankers' acceptances. Anticipating runoffs of negotiable certificates of deposit (CDs) around the mid-June corporate dividend and tax payment dates, major banks began raising CD rates early in June and continued to post increases throughout the month. Similarly, rates on CDs trading in the secondary market rose about ⅜ to ½ percentage point during June. Largely in response to the rise in money market rates, most major banks raised their prime rate to 5¼ percent from 5 percent effective the final week in June. Two large banks with "floating" prime rates increased these even further to 5⅜ percent on June 30. Rates on Euro-dollars shot upward after midmonth, as tensions mounted in the foreign exchange markets leading up to the floating of the British pound. Euro-dollar rates subsequently fell back but remained above their levels at the beginning of the month (see Chart I).

The effective rate on Federal funds in June averaged 4.46 percent, 19 basis points above the May level. Member bank borrowings at the Federal Reserve discount window declined slightly to $86 million on average, however (see Table I), as excess reserves increased. The forty-six major money center banks were particularly restrained in their use of the discount window. Preliminary data indicate that total reserves of member banks grew at a seasonally adjusted annual rate of about 8½ percent in June, while "reserves available to support private nonbank deposits" (RPD) grew at about a 9 percent rate, a slightly more rapid pace for RPD than in May (see Chart II).

According to preliminary estimates based on data for the four weeks ended June 28, the narrow money supply (M_1)—adjusted demand deposits and currency held by the public—rose at about a 5 percent seasonally adjusted annual rate in June, up somewhat from its increase of 3.6 percent in May. Over the second quarter as a whole, the annual rate of growth of M_1 also amounted to some 5 percent. For the first six months of the year, M_1 grew at an annual rate of slightly over 7 percent.

The broader money supply (M_2) also advanced somewhat more rapidly in June at a rate of about 9½ percent, compared with 8.4 percent in May. The recent acceleration resulted from a faster rise in both components of M_2, consumer-type time and savings deposits as well as M_1. For the three months ended in June, however, the growth in this measure was at a seasonally adjusted annual rate of 8½ percent. Over the January-June period, M_2 has grown at an 11 percent annual rate.

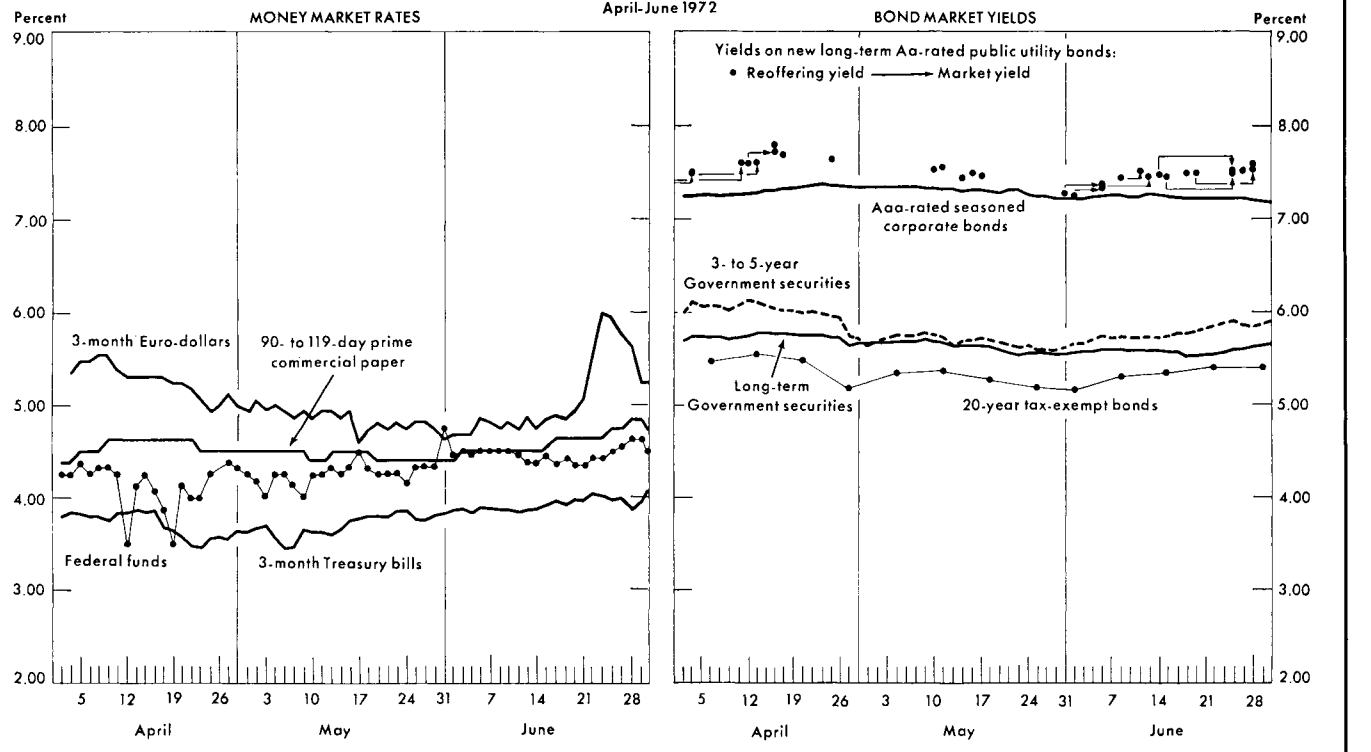
In contrast to M_1 and M_2, the growth of the adjusted bank credit proxy decelerated in June to an annual rate of 5 percent, down from 14.4 percent a month earlier. Both time and private demand deposits expanded substantially during June, but United States Government deposits at commercial banks declined by $2 billion on average from the May level, in spite of a buildup in these balances in the second half of June. It is estimated that the proxy expanded at an 11 percent annual rate in the latest quarter and at about the same rate over the first six months of 1972.

On June 22 the Board of Governors of the Federal Reserve System announced its unanimous approval of two regulatory changes designed to restructure the reserve requirements of member banks on a more equitable basis and to modernize the nation's check collection system. The changes, which will begin to go into effect on September 21,

Chart I

SELECTED INTEREST RATES

April-June 1972



Note: Data are shown for business days only.

MONEY MARKET RATES QUOTED: Bid rates for three-month Euro-dollars in London; offering rates (quoted in terms of rate of discount) on 90- to 119-day prime commercial paper quoted by three of the four dealers that report their rates, or the midpoint of the range quoted if no consensus is available; the effective rate on Federal funds (the rate most representative of the transactions executed); closing bid rates (quoted in terms of rate of discount) on newest outstanding three-month Treasury bills.

BOND MARKET YIELDS QUOTED: Yields on new Aa-rated public utility bonds (arrows point from underwriting syndicate reoffering yield on a given issue to market yield on the same issue immediately after it has been released from syndicate restrictions); daily averages of yields on seasoned Aaa-rated corporate bonds; daily averages of yields on long-term Government securities (bonds due or callable in ten years or more) and on Government securities due in three to five years, computed on the basis of closing bid prices; Thursday averages of yields on twenty seasoned twenty-year tax-exempt bonds (carrying Moody's ratings of Aaa, Aa, A, and Baa).

Sources: Federal Reserve Bank of New York, Board of Governors of the Federal Reserve System, Moody's Investors Service, and The Bond Buyer.

Table I

FACTORS TENDING TO INCREASE OR DECREASE MEMBER BANK RESERVES, JUNE 1972

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

Factors	Changes in daily averages—week ended				Net changes
	June 7	June 14	June 21	June 28	
"Market" factors					
Member bank required reserves	+ 380	+ 37	— 82	+ 217	+ 552
Operating transactions (subtotal)	— 123	— 360	+ 555	— 784	— 712
Federal Reserve float	+ 346	— 316	+ 728	— 222	+ 536
Treasury operations*	— 355	— 27	+ 189	— 735	— 928
Gold and foreign account	+ 189	— 4	— 12	— 4	+ 169
Currency outside banks	— 195	— 248	— 313	+ 251	— 505
Other Federal Reserve liabilities and capital	— 109	+ 235	— 37	— 73	+ 16
Total "market" factors	+ 257	— 323	+ 473	— 567	— 160
Direct Federal Reserve credit transactions					
Open market operations (subtotal)	+ 111	+ 78	— 410	+ 341	+ 120
Outright holdings:					
Treasury securities	+ 214	+ 8	— 403	+ 323	+ 142
Bankers' acceptances	— 1	+ 1	— 7	— 3	— 10
Federal agency obligations	+ 39	+ 100	—	—	+ 139
Repurchase agreements:					
Treasury securities	— 138	— 21	—	+ 9	— 150
Bankers' acceptances	— 1	— 8	—	+ 11	+ 2
Federal agency obligations	— 2	— 2	—	+ 1	— 3
Member bank borrowings	— 196	+ 35	— 36	+ 78	— 119
Other Federal Reserve assets†	+ 71	+ 18	+ 45	+ 61	+ 195
Total	— 14	+ 131	— 401	+ 481	+ 197
Excess reserves	+ 243	— 192	+ 72	— 86	+ 37

	Daily average levels				Monthly averages
Member bank:					
Total reserves, including vault cash	32,677	32,448	32,602	32,299	32,507‡
Required reserves	32,346	32,309	32,391	32,174	32,305‡
Excess reserves	331	139	211	125	202‡
Borrowings	58	93	57	135	86‡
Free, or net borrowed (—), reserves	273	46	154	— 10	116‡
Nonborrowed reserves	32,619	32,355	32,545	32,164	32,421‡
Net carry-over, excess or deficit (—)§	43	187	106	108	111‡

Note: Because of rounding, figures do not necessarily add to totals.
*Includes changes in Treasury currency and cash.
†Includes assets denominated in foreign currencies.
‡Average for four weeks ended June 28.
§Not reflected in data above.

were first proposed in late March when the Board invited comments from interested parties during the next month and a half. The major effects of the changes will be that reserve requirements on demand deposits will be based upon size of bank rather than location and that all banks using the System's check collection facilities must make payment in immediately available funds (see box on page 154 for details). The Board received comments from less than 5 percent of the nation's banks, and the main modifications suggested had to do with minimizing the effects of the new check collection procedures upon funds available for loans and investments. Taking these suggestions into account, the Board modified the regulations somewhat further. Thus, it reduced the new reserve requirement for one size category of banks which will lose a large amount of reserves as a result of the new check collection rules and set up conditions under which it will be appropriate for a Reserve Bank to waive penalties for certain member bank reserve deficiencies resulting from these changes. The waiver of penalties will be granted for a maximum of twenty-one months. Moreover, to equalize competitive conditions among banks and ease adjustment to the new check collection procedures, the Board is assigning high priority to extending Regional Check Processing Centers for clearing services.

THE GOVERNMENT SECURITIES MARKET

Yields on most Treasury securities advanced during June, in response to slackened investor demand and an expectation on the part of many participants that interest rates will rise as the economy continues to expand and as the Treasury's demand for funds places additional pressure on the credit markets in months to come. This expectation was fueled somewhat further by May increases in wholesale and consumer prices which surpassed those in April. Rates on Treasury bills and short- and intermediate-term coupon issues rose substantially, while relatively modest increases were posted in yields on long-term Treasury bonds. The increases in rates occurred in spite of the retirement by the Treasury of $3 billion of tax anticipation bills (TABs) and $1.2 billion of maturing bonds.

There was some tightening in the Federal funds market at the start of the month, and a cautious atmosphere hung over the bill market resulting from concern among participants that some firming of monetary policy might be under way. Modest investor demand developed, however, and bidding in the first weekly auction was relatively aggressive though rates did rise somewhat from the levels set during the final auction in May. Investor interest soon waned, however, and despite some professional demand rates trended higher over the next several days. Market sentiment brightened at the beginning of the next week, reflecting some modest investor demand prior to the weekly auction and the expectation of sizable reinvestment

demand from persons holding Treasury bonds maturing June 15 and TABs coming due six days later. As a result, at the auction on June 12 the average issuing rates on three- and six-month bills were down slightly from the week earlier (see Table II). Buoyed by the potential reinvestment demand and additional moderate investor purchases, the market steadied briefly but then began to falter when demand proved less than expected. Substantial payments of corporate income taxes on June 15 were met through the runoff of liquid assets including TABs, while borrowing was relatively light, thereby reducing the corporate reinvestment demand for Treasury bills.

Some modest investor demand once again appeared after several days of rising bill rates and improved the market's tone. Participants once again bid rather aggressively in the regular auction on June 19, and a better atmosphere prevailed in the market for the next several sessions. An additional lift was provided by the possibility that, in the international currency uncertainty surrounding heavy selling of the British pound and the dollar, some demand for bills might be forthcoming from foreign central banks. Demand again proved disappointing following the floating of the pound early on June 23, and in the unenthusiastic monthly auction held that day, average issuing rates on the new nine- and twelve-month bills reached their highest levels since last September.

A better tone emerged over the next few days in response to some investor demand for bills for quarterly financial statement purposes. Dealers were concerned about the reversal of this demand following the end of the quarter, however, and bidding was restrained in the final weekly auction which was advanced to Friday, June 30, because many participants were expected to take a long Fourth of July holiday weekend. In this second auction for the week, average issuing rates on the three- and six-month bills were set at 4.138 percent and 4.688 percent, respectively, their highest levels since late in 1971. Over the month as a whole, most bill rates rose by some 20 to 60 basis points.

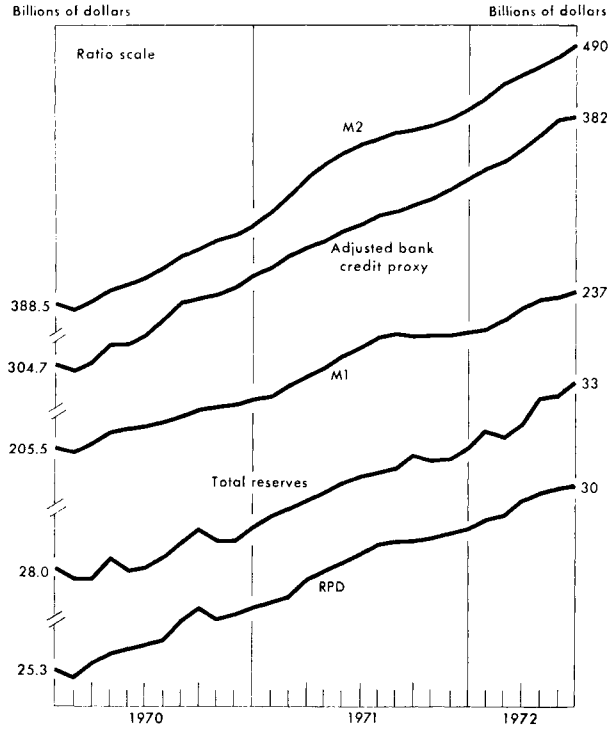
Treasury coupon issues came under many of the same pressures affecting the bill market during June, and yields on most issues maturing within five years were also about 20 to 60 basis points higher over the month. Modest investor demand and some dealer short covering limited price changes on longer term notes and bonds to a somewhat narrower range.

A cautious tone emerged in this market early in June when buying interest was sluggish and participants pondered the implications of a firming Federal funds rate for near-term monetary policy. The possibility of renewed inflation, given the 5½ percent (annual rate) rise in the wholesale price index during May, and the corporate bond market's inability to sustain lower yields despite a reduced calendar were further depressants to the market, and prices of most issues eased over the first week in June. The lower price levels attracted some investor interest, as well as the opportunity for dealer short covering, and the market began to firm. Prices fluctuated narrowly over the next several days and then drifted lower amid predictions by some analysts that the Treasury's cash needs in the fiscal year 1973 would be somewhat greater than estimated earlier. In the face of renewed buyer apathy, dealers marked prices lower in an attempt to elicit some interest but to no avail. There was no selling pressure on the mar-

Chart II

MONETARY AND RESERVE AGGREGATES

Seasonally adjusted



Note: Data for June 1972 are preliminary estimates.

M1 = Currency plus adjusted demand deposits held by the public.

M2 = M1 plus commercial bank savings and time deposits held by the public, less negotiable certificates of deposit issued in denominations of $100,000 or more.

Adjusted bank credit proxy = Total member bank deposits subject to reserve requirements plus nondeposit sources of funds, such as Euro-dollar borrowings and the proceeds of commercial paper issued by bank holding companies or other affiliates.

RPD = Total member bank reserves less those required to support United States Government and interbank deposits.

Source: Board of Governors of the Federal Reserve System.

Table II

AVERAGE ISSUING RATES*
AT REGULAR TREASURY BILL AUCTIONS

In percent

Maturities	Weekly auction dates—June 1972				
	June 5	June 12	June 19	June 26	June 30
Three-month	3.861	3.798	3.924	4.023	4.138
Six-month	4.243	4.187	4.328	4.484	4.688
	Monthly auction dates—April-June 1972				
	April 25		May 23		June 23
Nine month	4.234		4.367		4.754
One-year	4.362		4.465		4.854

*Interest rates on bills are quoted in terms of a 360-day year, with the discounts from par as the return on the face amount of the bills payable at maturity. Bond yield equivalents, related to the amount actually invested, would be slightly higher.

ket, however, as investors seemed content with their current holdings, and prices of coupon issues drifted steadily lower over the remainder of the month.

OTHER SECURITIES MARKETS

Considerable investor resistance was evident in both the corporate and municipal bond markets during much of June after rates had fallen early in the month to their lowest levels since January. The announcement of larger increases in the wholesale and consumer price indexes during May as compared with April contributed to an expectation of higher interest rates, and investors remained on the sidelines a good part of the time.

On May 31 underwriters were able to sell only about 10 percent of a $100 million issue of new Aa-rated utility bonds which were aggressively priced to yield 7.29 percent, the lowest return since mid-January. Despite this experience, on the following day, June 1, an additional $50 million of similarly rated power company bonds was marketed at an even lower yield of 7.25 percent, and by late Friday, June 2, only about $30 million of these two issues had been bought by investors. Although the calendar of scheduled offerings was relatively light, substantial retail demand failed to materialize at the beginning of the next week. As a result, on Tuesday, syndicate restrictions were removed from the unsold balances of these two issues together with two others, and yields on these bonds adjusted as much as 12 basis points higher.

Recognizing the fact that rates had already been pushed beyond their currently acceptable levels, underwriters began pricing new offerings at progressively higher yields over the next several days but with only moderate success. Then, faced with a somewhat heavier schedule than there had been in recent weeks, several syndicates disbanded on the following Monday in advance of the sale of $125 million of New Jersey Bell Telephone securities the next day. This two-part Aaa-rated offering of $75 million of forty-year bonds and $50 million of six-year notes, yielding 7.45 percent and 6.53 percent, respectively, sold out quickly. The return on the bonds matched that placed on a slow-selling Aa-rated offering three days earlier. Immediately following the successful sale of the New Jersey Bell issues, however, underwriters priced two Aa-rated utility bond offerings to yield little more than the Aaa-rated Bell bonds and investors once again balked. Finally, early in the week of June 19, returns on new Aa-rated utility bonds were placed at 7½ percent. Investors responded favorably to this higher rate structure and the corporate bond market tended to stabilize over the next few days, albeit with yields on Aa-rated utility bonds some 25 basis points higher than at the start of the month. In reaction to the uncertainties in the international money market, rates moved higher as the month drew to a close, and a subsequent issue sold slowly at a yield of 7.60 percent.

Confronted with an increased supply of scheduled new issues, investors displayed little interest in the lower yields available on tax-exempt bonds at the start of June. There was a sizable buildup in the Blue List of inventories advertised for sale, as dealers made preparation for the heavier calendar which included $209 million of Aaa-rated local housing bonds guaranteed by the Department of Housing and Urban Development (HUD). Providing yields of 2.60 to 5.08 percent, the HUD bonds were marketed on June 7 and, even though many analysts believed they were not aggressively priced, only about one half were sold during the first three business days. Some additional sales resulted from a markdown in the price of these bonds on the fourth day, but a sizable balance remained.

The tax-exempt market registered a short-lived improvement just before midmonth, when investors bought heavily of several new issues, but faltered again in response to the somewhat restrained reception to a $90 million offering of Aaa-rated Connecticut securities. Two business days later, the unsold portion of the thirty-year term bonds was released from syndicate with an upward yield adjustment to 5.40 percent from an initial 5.25 percent. On the following day, other recent issues were also released from pricing restrictions with increases in yields of as much as

25 basis points. Despite such adjustments, buyers remained quite hesitant and showed very little interest in the new offerings which were marketed later in the month. For example, the unsold HUD bonds were reduced in price a second time on June 22 and, despite some sales, an estimated $20 million remained in dealers' hands; at the same time a one-day-old issue was released from syndicate after first-day sales of less than 50 percent. While the corporate bond market was stabilizing temporarily, tax-exempt securities had difficulty finding a viable level of rates, and that market continued under pressure until late in the month. Reflecting developments in this area over the period, The Bond Buyer index of yields on twenty municipal bonds rose steadily from 5.15 percent on June 1 to 5.43 percent on June 22. Following postponement of a $151 million issue scheduled for June 27, however, pressures abated somewhat and rates stabilized.

Impact of Direct Investment Abroad by United States Multinational Companies on the Balance of Payments

By SUSAN B. FOSTER*

The persistent and distressingly large deficits in the United States balance of payments during the past decade have aroused considerable interest in the overall impact on the payments balance of direct investment abroad by United States multinational companies.[1] This paper summarizes the measurable balance-of-payments flows associated with American firms' operations overseas and attempts to place these flows in an appropriate theoretical framework.

The principal balance-of-payments flows associated with overseas investment can be separated into two major blocks: (1) those affecting the capital and related services accounts (principally investment income), referred to in this article as financial flows, and (2) those relating to the merchandise trade account. The preponderance of evidence indicates that the balance-of-payments impact of the financial flows has been favorable when viewed in a long-run context. Over the decade of the 1960's these flows cumulated to a net positive item of $35 billion. Analysis of the financial flows within a theoretical framework which explicitly takes account of the relationship between investment outflows in one period and income inflows in subsequent periods suggests that their balance-of-payments contribution will remain favorable.

Conclusions about the impact of United States direct investment on the merchandise trade balance, on the other hand, must be considered tenuous for several reasons. First, the data available on trade flows related to direct investment activity are very limited. Second, to assess the impact of overseas investment on trade flows, one ideally should compare the flows that took place given the existence of the overseas affiliates with the flows that would have occurred in their absence, and the data naturally do not permit such a comparison. Only by making explicit assumptions about the behavior of firms can any inferences be drawn. The assumption considered most reasonable is that multinational firms are operating in fairly competitive environments, which implies that most of the observed changes in exports and imports would have occurred even in the absence of United States foreign investment, at least in the long run. In other words, if United States companies had not exploited the overseas opportunities as they appeared, foreign companies eventually would have. Therefore, these export and import changes should be viewed more as reflections of adjustments to changes in international competitiveness rather than as a direct result of United States investment abroad. More data are required, however, before this conclusion on trade effects can be demonstrated empirically.

FRAMEWORK FOR ANALYZING DIRECT INVESTMENT IMPACT

The balance-of-payments flows associated with the activities of United States multinational companies arise in the following manner. The value of United States direct investment in foreign enterprises[2] can be augmented either

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[1] The phrase "multinational companies" has been defined in a variety of ways by different analysts of this subject. The terminology is used in its broadest sense in this paper to refer to the activities of all United States firms with direct investments abroad.

[2] In the official statistics on the United States foreign investment position published by the United States Department of Commerce, the book value of United States direct investment abroad is defined to include, not only the parent company's share of the capital stock and surplus of the affiliate, but also the net indebtedness of the affiliate to the parent plus any long-term debt of the affiliate held by nonaffiliated United States residents.

through additional contributions of capital from the United States—a long-term capital outflow in the balance of payments—or through the reinvestment of a portion of the direct investors' share of the foreign affiliates' earnings. The latter does not appear in the balance-of-payments statistics if the foreign affiliate is incorporated but, if the affiliate is unincorporated, reinvested earnings are included as inflows of direct investment income offset by capital outflows. The stock of assets abroad generates a stream of earnings into the future, some portion of which is returned to the United States in the form of dividends, branch profits, and interest payments and recorded as balance-of-payments inflows of "income from direct investment". In addition, United States parent firms receive payments from the affiliates of royalties and fees for the use of patents, managerial services, etc., which are also balance-of-payments inflows.

Since the inception in 1968 of the mandatory capital control program on American corporations' overseas investments,[3] United States firms have relied to a significant extent on foreign sources of funds to finance their direct investment, principally by borrowing either through bond issues or directly from financial institutions overseas. These foreign borrowings are recorded as positive balance-of-payments inflows, offset by corresponding capital outflows when utilized to increase United States direct investment in foreign concerns. United States companies' interest payments on these foreign borrowings, of course, are also balance-of-payments entries and are included as a part of the figure recorded for United States private payments of income on foreign investments in the United States.

In addition, there are a variety of possible merchandise trade flows associated with United States direct investment abroad. Exports of capital goods may be generated by the establishment or expansion of facilities abroad, and there may be a continuing stream of such capital equipment shipments to meet replacement demands. There may be exports of intermediate goods for further processing and assembly abroad, and some goods may be shipped to affiliates for immediate resale, with the affiliate acting principally in a distributing or warehousing capacity. On the other hand, United States exports may be displaced by production and sale by the foreign subsidiary of goods which would otherwise have been shipped from this country. United States imports may also be affected by United States direct investment abroad, as intermediate or final goods produced by the affiliate in a lower cost environment overseas are imported back to the United States.

Before proceeding to attempt to measure these flows, a brief exposition of the theoretical context appropriate to the analysis of the real balance-of-payments effects stemming from direct investment is in order. The first important point which clearly emerges from the mere listing of possible effects is that there is a dynamic process involved and time must explicitly be taken into account in any attempt to establish a causal relationship between outflows of investment funds and resultant income and net trade receipts. Any addition to the stock of productive assets abroad yields a flow of income as well as exports and imports in subsequent periods. The balance-of-payments impacts of a direct investment outflow in period t, then, are the increments in periods t+1, t+2, etc., of income and net trade receipts associated with that addition to productive capacity. Alternatively, one can say that the income and trade flows in any given year are attributable, *not* to the capital outflow in that year, but to the cumulative outflow in all previous years, i.e., to the outstanding stock of investment in that year. Thus, matching inflows and outflows on a year-by-year basis or cumulated over several years must be regarded as purely a descriptive method and not as an analytical tool.

The number of years required for an initial capital outflow to generate a return stream of income and net trade receipts equal to it is frequently referred to as the recoupment period, which several studies have attempted to calculate.[4] For purposes of illustrating the time pattern of balance-of-payments impacts, which is implicit in the recoupment estimate procedure, the relationship between capital outflows and related income flows will be examined, ignoring the trade effects for simplicity. The basic model employed in these studies assumes that the investment base which produces the earnings stream is augmented either through capital outflows from the United States or through retained earnings. Then, given a constant rate of earnings, a constant ratio of repatriated to total

[3] This program is administered by the Office of Foreign Direct Investments of the Department of Commerce and is usually referred to as the OFDI program.

[4] For example, Philip Bell, "Private Capital Movements and the U.S. Balance-of-Payments Position", *Factors Affecting the U.S. Balance of Payments* (Washington, D.C.: United States Government Printing Office, 1962); N. K. Bruck and F. A. Lees, *Foreign Investment, Capital Controls, and the Balance of Payments* (New York University Graduate School of Business Administration, Institute of Finance, Bulletin No. 48-49), April 1968; G. Hufbauer and F. Adler, *Overseas Manufacturing Investment and the Balance of Payments* (Washington, D.C.: United States Department of the Treasury, 1968).

earnings, and a constant rate of growth of new direct investment outflows, the number of years necessary to achieve a cumulative positive balance-of-payments effect can be calculated. The inflows will ultimately match and then exceed the outflows, both on an annual and on a cumulative basis, so long as some earnings are repatriated and the rate of return is larger than the rate of growth of outflows.[5]

This approach may be used to analyze two relevant problems. In the first instance one can calculate how long it will take for a single once-and-for-all capital outflow to have positive balance-of-payments consequences. Clearly, in the year it occurs the outflow will be a negative balance-of-payments entry which will not be offset by any inflows, assuming that the investment does not earn a return until the next period. On the other hand, in every subsequent year the annual balance-of-payments effect will be positive and equal to the remitted earnings. This income stream will not be constant, however, but will grow because the investment base is being augmented in each period by the amount of reinvested earnings. As an example, if the earnings rate equals 20 percent and the repatriation rate is 60 percent, it can be calculated that a single outflow of $100 will be totally recovered in terms of cumulated income inflows in the seventh year after the initial outflow.

For the purposes of analyzing the impact of aggregate direct investment flows on the balance of payments, however, it is more appropriate to examine the situation where there is a continuous, and probably growing, stream of new capital outflows. As noted above, as long as the rate of return on investment exceeds the rate of growth of capital outflows and as long as some earnings are repatriated, the balance-of-payments effect will ultimately turn positive although the recoupment period will be longer than in the example of a single nonrecurrent outflow. Using the same earnings and repatriation rates as in the earlier case but allowing capital outflows to grow at 10 percent per year, the annual balance-of-payments effect (i.e., yearly income inflows minus annual outflows) does not become positive until year 10 and the cumulated inflows exceed the cumulated outflows only beginning in year 16. The length of the recoupment period is quite sensitive to the assumptions made regarding the rate of return and the rate of growth of outflows; in general, the larger the excess of rate of return over the rate of growth of outflows, the shorter the recovery time. Thus, whether one judges the balance-of-payments impact of direct investment as positive or negative depends critically on the time horizon one chooses. In the short run, the impact is likely to be negative, while in the long run the reverse is the case.[6] It should be emphasized that, as illustrated by the numerical examples, the short run in this context covers a period of several years.

The second fundamental question which must be confronted in any attempt to assess the overall balance-of-payments impact of direct investment is what would have happened in the absence of United States direct investment abroad. This question is not relevant in estimating income flows associated with direct investment since there would obviously be none in the absence of the initial investment, but it is critical in estimating trade effects.[7] There are a variety of explicit motives leading to the investment decision. While the explanations may appear different on the surface, they generally share the notion that there are competitive advantages in producing abroad—frequently in the form of lower costs. These lower costs could arise in the production process itself because of lower costs of labor or materials. Alternatively, savings could arise in the distribution process where local production allows lower transport costs, or lower costs of delivery to final market because of tariff barriers. Other less tangible benefits might also accrue from local production, such as establishing brand consciousness in the market or being better able to tailor products to specific national tastes.

In some instances, the decision to produce abroad could be based primarily on a defensive motive—to protect an

[5] These conditions are sufficient to ensure that the rate of growth of the stock of assets abroad (which equals the rate at which income inflows grow) will be sufficiently larger than the rate of growth of outflows—because of the reinvestment of earnings—so that the balance-of-payments inflows will ultimately exceed the outflows.

[6] The length of the overall recoupment period will also be affected by the size and direction of the net trade receipts generated by the investment base. The larger and more positive these flows, the shorter will be the pay-back period, whereas the recoupment period will be lengthened the larger and more negative the net receipts. Indeed, if the net trade balance effects were sufficiently large and adverse, they could swamp the positive income inflows and the net balance-of-payments effect would be negative. This outcome does not seem likely, however, for a variety of reasons discussed later.

[7] Under certain conditions, other kinds of capital flows, e.g., portfolio investment or bank lending, could arise in the absence of direct investment. The existence of such substitution might modify the conclusions of a study such as this. But for the purposes of evaluating the balance-of-payments impact of direct investment by itself, the most meaningful approach was to leave aside the possibility of substitute capital flows in the absence of direct investment.

existing market share against the emergence of potential rivals. Underlying this explanation is still the presumption that there are advantages in producing abroad rather than in the United States, however. If such advantages did not exist, then the United States exporter could continue to maintain his market share through exports and would not be induced to begin production abroad in an attempt to forestall the emergence of potential rival firms.

Another hypothesis about the behavior pattern of United States direct investors has been propounded by Vernon and is known as the product or industry cycle theory.[8] This thesis suggests that new products are first developed and tested in the large and relatively high-income United States market. Production remains in the United States during a trial period when a variety of production processes and product characteristics are tested, and during this period a market abroad may be initiated through export. As the market reaction both here and abroad is assessed, some standardization occurs and the emphasis in the production-location decision shifts to cost minimization. At some point during the expansion of the foreign market, cost-minimizing criteria may dictate shifting the locus of production abroad. Vernon carries the argument one step further and suggests that, in some instances, the cost of production may be sufficiently lower overseas to offset transport costs and the product may ultimately be produced abroad entirely, with some of it imported back to the United States.

All of the foregoing explanations—by no means a comprehensive listing—have in common the basic premise that there are advantages in producing in the foreign market, which would suggest that the foreign-produced goods could outcompete the comparable United States product. Given relatively free markets in which the basic technology of production is known and in which there are no significant barriers to entry, such as prohibitive start-up costs, competitive forces would suggest that in the absence of United States firms establishing production facilities abroad, other non-United States firms would seize this profitable opportunity. Consequently, to the extent that foreign-sourced goods displace United States exports or lead to United States imports replacing domestic production, these effects would be likely to occur anyway even without the United States firms producing abroad, and therefore it would be wrong to attribute any export loss or import creation to United States direct investment. Rather these changing trade patterns merely reflect world production adjusting to relative cost advantages.

Once again, however, it should be emphasized that the time frame becomes an important consideration in this evaluation. There may be a considerable lag between the emergence of profitable production possibilities and the perception and seizing of these opportunities. It seems quite possible that United States firms may *accelerate* this rationalization of worldwide resource utilization, perhaps because they become aware more rapidly of the market opportunities in certain products as developed through their export trade and perhaps because of an ability to raise the necessary capital more quickly either through internal funds or through access to the larger United States capital market. Thus, in the short run—which may be a matter of several years—the shift of United States production may be conceived to result in actual export loss or import creation for specific products, but as indicated above, given a longer run outlook, many of these exports would probably have been forfeited and the goods imported anyway. In a long-run time frame, then, theoretical considerations suggest that the relevant criterion for assessing the balance-of-payments impact of United States direct investment abroad is whether or not the income returns outweigh the associated capital outflows, and on this basis the evidence seems clearly to indicate that the balance of payments is favorably affected by direct investment activity.

EXPANSION OF FOREIGN INVESTMENT AND SALES IN THE 1960'S

The book value of United States direct investment abroad has expanded from less than $32 billion at the end of 1960 to $78 billion by the end of 1970 (see chart), growing at an average rate of 9.4 percent per year. Total affiliate assets, which are larger than the book value of United States direct investment reflecting foreign equity participation in the affiliates as well as the affiliates own borrowing from foreigners, appear to have grown even more rapidly at least in the latter part of the decade. Unfortunately, recent data on these total affiliate assets are lacking, but a survey conducted by the Office of Foreign Direct Investments (OFDI) covering the balance sheets of the majority-owned affiliates of 469 United

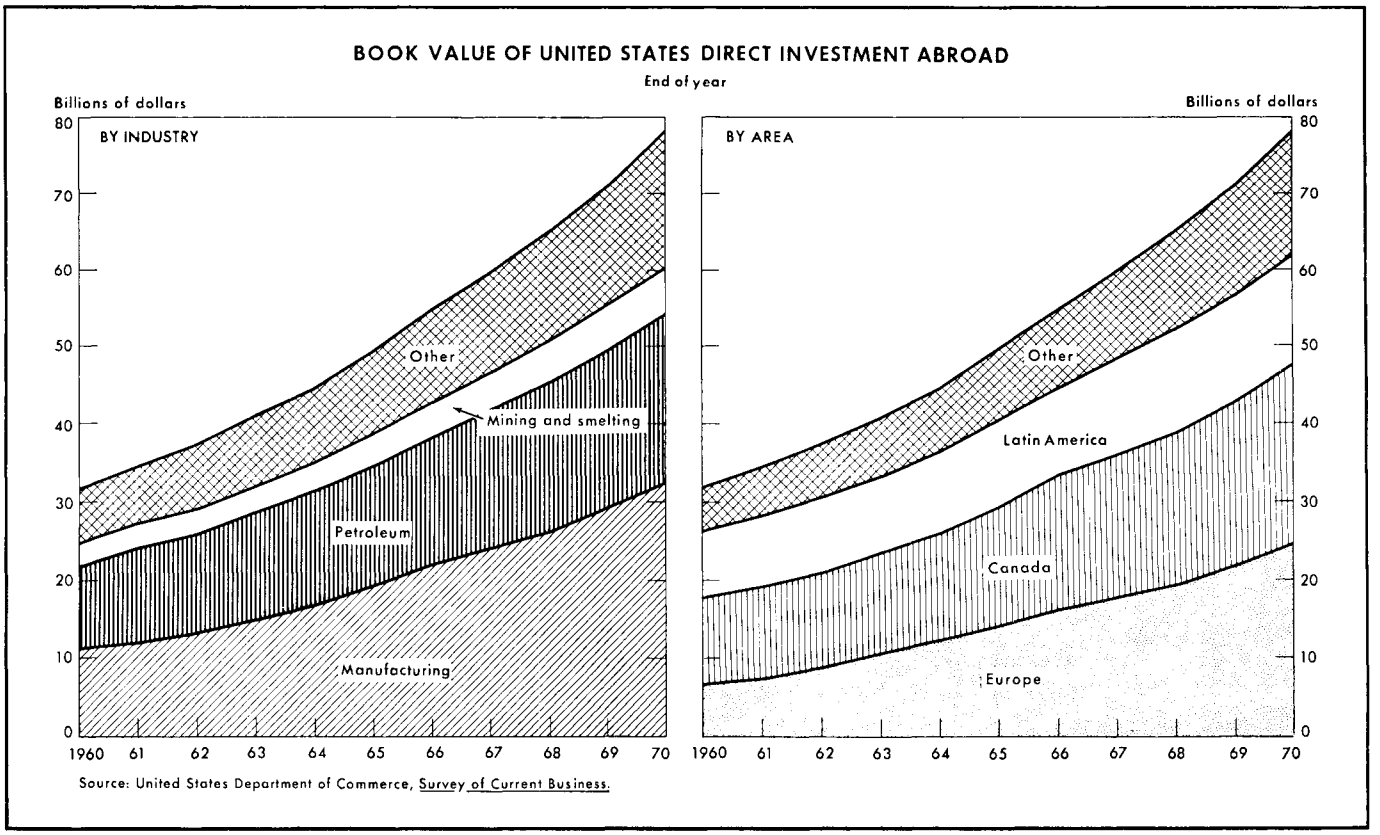
[8] R. Vernon, "International Investment and International Trade in the Product Cycle", *Quarterly Journal of Economics,* Vol. LXXX (1966). A recent exposition of this hypothesis supported by evidence obtained through case studies may be found in a study undertaken by the Harvard Business School under contract for the United States Department of Commerce: R. B. Stobaugh and Associates, "U.S. Multinational Enterprises and the U.S. Economy", *The Multinational Corporation: Studies on U.S. Foreign Investment,* Vol. I (United States Department of Commerce, Bureau of International Commerce, March 1972).

States direct investors[9] reveals that total assets of these affiliates rose at an approximately constant rate of 13 percent per year between 1966 and 1969. During this same period, however, the United States direct investors' share of these total affiliate assets declined from 60.1 percent to 57.2 percent, reflecting the impact of the control program on United States direct investment that was designed to shift the financing of affiliate expansion from United States to foreign sources.

Additional supporting evidence pointing to the continued expansion of overseas affiliate assets can be derived from actual and anticipated plant and equipment expenditures of foreign affiliates, which dipped in 1967-68 but rose sharply in 1969-70. These figures indicate clearly that there has been no sharp curtailment in expansion plans since the OFDI program was established in 1968. Rather the expenditure pattern seems more probably to reflect cyclical conditions in foreign business and capital markets.

GEOGRAPHICAL AND INDUSTRIAL DISTRIBUTION OF FOREIGN ASSETS. In the ten years 1961-70 inclusive, the increase in total book value of United States direct investment abroad was concentrated in the manufacturing sector, where United States-owned assets rose by 190 percent to $32.2 billion (see chart). The bulk of these manufacturing investments was in Canada and Europe, but the rate of growth in Europe considerably outstripped that in Canada. Undoubtedly the formation of the Common Market at the end of the 1950's acted as a considerable inducement to American firms to establish production facilities behind the common tariff barrier in order to serve the markets of the member countries. The establishment of such local facilities was encouraged, not only as a means of avoid-

[9] Office of Foreign Direct Investments, *Foreign Direct Investment: Selected Statistics* (United States Department of Commerce, July 1971).



ing the external tariff wall, but also to take advantage of the expanded internal market which opened up possibilities of achieving economies of scale and generated more rapid economic growth in the European Community countries than might otherwise have been achieved.

In absolute amount, investment in petroleum affiliates represented the second largest industrial group by the end of 1970, although their proportion of total investment abroad had fallen to 28 percent from 35 percent ten years earlier. The $21 billion of petroleum industry assets, which include refining, distribution, and crude production facilities, was about evenly divided between Canada and Europe on the one hand and Latin America and other areas on the other. Mining and smelting operations, largely representing investments to obtain raw materials, grew at about the same rate as petroleum investments over the ten-year period and amounted to $6.1 billion at the end of 1970, or roughly 8 percent of total investments. As expected, these assets were concentrated in Canada and Latin America.

The other category of investments displaying a growth of just over 200 percent during the 1960's was comprised of trade and other industries, largely financial and other service industries. The most rapid growth in this group of enterprises occurred in Europe, as ancillary service industries moved abroad with the rapid development of manufacturing concerns. Despite the rapid growth in these investments, however, they represented only some 8 percent of total direct investment assets by the beginning of 1970. Finally, transportation and public utilities investment exhibited virtually no growth over the period and represented less than 4 percent of the total investment figure in 1970.

PRODUCTION OF FOREIGN AFFILIATES. Unfortunately for assessing the importance of the role of American overseas investment in world production, comprehensive statistics on the total output of foreign subsidiaries of American companies located outside the borders of the United States are not available. However, by assuming a constant relationship between affiliates' assets and their sales, an estimate which is at least indicative of the rough order of magnitude of such output can be derived.[10] This procedure suggests affiliate sales in 1970 of about $74 billion by manufacturing concerns, roughly $36 billion for petroleum affiliates, $6 billion for mining and smelting subsidiaries, and $16 billion for all other affiliates. Thus, a very rough approximation of total sales by all foreign affiliates in 1970 would be in the range of $130 billion-$140 billion, which contrasts with a total sales figure (estimated similarly) of some $50 billion in 1960.[11] Clearly, then, the operations of United States-affiliated firms abroad—whether measured in terms of asset formation or of total sales—exhibited sharp growth in the 1960's and, by the end of the decade, were a very significant factor in global production.

CAPITAL AND SERVICES ACCOUNT FLOWS

To recapitulate briefly the relevant entries in the capital and services accounts of the balance of payments associated with United States direct investment, the expansion in the book value of United States foreign direct investment can be achieved either through a capital outflow from the United States or through the reinvestment of a portion of the United States share in the affiliates' earnings. The first method of financing entails a debit entry in the balance of payments, "direct investment abroad", whereas, as noted above, the latter does not appear in the balance of payments at all if the affiliate is incorporated or it appears as offsetting debit and credit entries if the affiliate is unincorporated. Direct investment capital outflows rose from $1.6 billion in 1961 to $4.4 billion in 1970 (see Table I), with the bulk of the outflows going to manufacturing and petroleum affiliates.

These additions to the stock of investments subsequently generate a return flow of payments in the form of repatriated earnings and interest payments on credit extended by United States residents, all recorded as "income on United States direct investment abroad". These flows have been a major positive factor in the balance of payments, rising from $2.8 billion in 1961 to $6.0 billion in 1970 and again coming mainly from

[10] This estimation procedure was derived from work done by Judd Polk, economist for the United States Council of the International Chamber of Commerce. For the few years when data on both assets and sales are available, the relationship was fairly stable.

[11] The 1970 total is probably a conservative estimate since it is based on an assumed constant relationship between sales and assets. However, the relationship actually used in the estimation procedure is that between affiliate sales and the United States direct investors' share of book value, not gross assets. To the extent that the gross investment base of the foreign affiliates has been augmented by an increased proportion of foreign capital contributions, either debt or equity, total sales expansion might well have exceeded that suggested above.

Table I

NET EFFECT OF CAPITAL AND SERVICES ACCOUNT FLOWS ASSOCIATED WITH DIRECT INVESTMENT OF UNITED STATES MULTINATIONAL COMPANIES

In billions of dollars; — denotes outflow

Capital and services account flows	1961	1966	1967	1968	1969	1970	Cumulated 1961-70
United States direct investment abroad	— 1.6	— 3.7	— 3.1	— 3.2	— 3.3	— 4.4	— 28.8
Borrowing abroad by United States direct investors	*	0.7	0.5	3.4	2.4	3.9	11.2
Interest payments to foreigners on borrowing abroad†	‡	‡	— 0.1	— 0.2	— 0.4	— 0.6	— 1.3
Income from direct investment abroad	2.8	4.0	4.5	5.0	5.7	6.0	41.8
Receipts of royalties and fees	0.7	1.3	1.4	1.5	1.7	1.9	12.4
Net financial flows†	**1.9**	**2.3**	**3.2**	**6.5**	**6.1**	**6.8**	**35.3**

* Not available.
† Estimated.
‡ Less than $50 million.
Sources: United States Department of Commerce, *Survey of Current Business* (June 1971) and *Foreign Direct Investment Program: Selected Statistics* (July 1971).

manufacturing and petroleum affiliates.[12] Receipts from affiliates of royalties and management fees for services rendered by the parent companies comprise another balance-of-payments inflow, and these rose from $0.7 billion in 1961 to $1.9 billion in 1970.

In response to the OFDI program, United States companies have borrowed substantial amounts of funds abroad in recent years. These borrowings appear as an inflow of nonliquid foreign capital in the balance of payments and are subsequently counterbalanced by an outflow of direct investment as the proceeds are transferred to foreign subsidiaries. A survey carried out by the OFDI reveals that borrowing by United States direct investors from foreigners both in the form of bond issues and directly from banks has been a strongly positive item in the balance of payments, particularly in the 1968-70 period following the institution of the mandatory restraint program. In fact, during this three-year period, the average net positive contribution of all financial flows to the balance of payments was $6.5 billion, and foreign borrowings by United States direct investors accounted for nearly one half of this—or $3.2 billion, as can be seen in Table I.

Finally, this foreign borrowing also gives rise to a balance-of-payments outflow in the form of interest payments to foreigners. Estimates of these figures are available only for 1967-70 but, since borrowing abroad was relatively insignificant prior to 1965, the absence of earlier figures does not seriously distort the overall picture.

On the simplest level of analysis, these debit and credit entries can be matched on a year-by-year basis or cumulated over a period of years to yield a net positive or negative impact on the balance of payments, as illustrated in Table I. Clearly, on either of these bases, the inflows of income, royalty and fee payments, and foreign borrowing have greatly exceeded the outflow of funds for expanding direct investment assets or for interest payments on foreign debt: the net positive balance-of-payments flows cumulated to over $35 billion in the period 1961-70, nearly one third of which may be attributed to borrowing from foreigners.

As stated earlier, this simple comparison of flows is useful mainly as a descriptive tool, but reveals little about the causal relationship between capital outflows and future incremental income returns generated by the addition to the investment base. For this, time must be allowed explicitly to enter the calculus. When the model described earlier is employed using actual data for the period 1961-69, the rate of return is found to have exceeded the rate of growth of capital outflows and, therefore, one can conclude that the balance-of-payments effects of new direct

[12] Since a large number of petroleum affiliates are branch subsidiaries, the income figures from these affiliates include earnings which in fact are reinvested, and thus the gross income inflows overstate the amount of income which remains in the United States. From the overall balance-of-payments point of view, however, this overstatement is canceled out as any branch profits reinvested are counted as capital outflows in the direct investment account.

investment will ultimately be positive on both an annual and a cumulative basis. This is consistent with the presently observed pattern of positive balance-of-payments contributions of income and capital outflows, and suggests that this pattern will continue in the future if the parameters remain stable.[13]

To evaluate the overall balance-of-payments effect of all capital and financial flows, certain other flows must also be considered. The annual stream of receipts of royalties and fees associated with the outstanding stock of investment will also increase as the investment base grows. In the base period, each $100 of book value was associated with about $3 of such receipts. This additional stream of inflows enlarges the ultimate net positive balance-of-payments effect and shortens the length of the recoupment period. Second, the increase in United States corporate borrowing from foreigners to finance overseas investment will affect the time pattern of net balance-of-payments effects. The borrowing may be considered as an offset to direct investment outflows in the immediate period, thus reducing net capital outflows, but repayment of the debt in the future will lead to larger net outflows than would otherwise have occurred. In addition, interest payments to foreigners on the debt will constitute an annual stream of outflows, partially offsetting some of the positive effects mentioned above, and will tend to lengthen the recoupment period.

These conclusions must be further tempered by other qualifications. The calculations assume constant parameters—that is, rates of return, repatriation, and growth of outflows—and there are a variety of factors which might lead to a shift in these parameters. For example, there is some evidence of a negative relationship between capital outflows and the age of foreign affiliates.[14] As the affiliates mature, they provide for a larger part of their investment needs through internal funds and rely less on funds from the parent organization. This would suggest that, as the previously noted bulge of investments in the 1960's matures, the rate of growth of outflows may decline. The stability of the rate of return on investment is also open to question. In particular, it appears that the foreign affiliates have been induced by the OFDI program to increase their own borrowing to finance investment.[15] The impact of this greater leveraging of their assets may be to increase the rate of return in the future. However, increased leverage can also sharply cut rates of return in periods of slackened demand for their output as the higher interest costs reduce earnings. It is not obvious which type of effect is likely to prevail. Finally, United States ownership of assets abroad and/or the proportion of foreign earnings which may be repatriated are, in some instances, subject to control by host governments, and the possibility of expropriation introduces a further uncertainty into the long-run outlook.

TRADE ACCOUNT FLOWS

EXPORTS. As outlined in the introduction, there are a variety of possible export effects attributable to United States direct investment abroad but, unlike the capital and other financial effects, these cannot readily be isolated from available statistics. There are two types of export effects which it would be desirable to measure. (1) Exports of goods to and through foreign affiliates, which would not have been shipped to other foreigners if the affiliates did not exist, are referred to as associated exports. This category could comprise a variety of goods, such as capital equipment associated with plant expansion, parts and components to be assembled abroad, or final goods destined for immediate resale. (2) Exports which do not occur because of the competition of goods manufactured and sold by the foreign affiliates are described as displaced exports. Unfortunately, we cannot directly answer the question—which is central to these two effects—of what the pattern of United States exports would have

[13] The values of the parameters were estimated to be: rate of return, 12 percent; rate of growth of outflows, 9 percent; repatriation rate, 70 percent. These values were estimated as averages over the period and, therefore, must be viewed as only rough approximations of the marginal relationships the use of which would be preferable since we are interested in isolating the incremental income inflows from an addition to the investment base. These estimates may be used to calculate the recoupment period, although the results must be viewed with caution. Such simulations suggest that the balance-of-payments impact (annual income inflows minus annual new direct investment outflows) associated with these new direct investments will become positive in the twenty-second year, although the negative annual balances diminish in magnitude after the fourth year. Of course, it should be emphasized that the balance-of-payments impact of total income and capital flows in future years will be a combination of not only these marginal flows associated with the new direct investment but also the positive flows generated by past investments. On this basis, the calculations show that the net income and capital flows associated with both old and new investments will continue to be positive and to expand.

[14] F. Cutler, "Benchmark Survey of U.S. Direct Investment Abroad, 1966", *Survey of Current Business* (August 1971).

[15] P. Berlin, *Foreign Affiliate Financial Survey, 1966-1969* (United States Department of Commerce, Office of Foreign Direct Investments, July 1971).

been in the absence of foreign direct investment. Nevertheless, very rough estimates of the order of magnitude of such effects are presented below based on the limited amount of available data and, most importantly, on judgmental assumptions about firm behavior.

Turning first to the question of estimating associated exports, the only comprehensive data available are provided in a bench-mark survey of direct investors for 1966. In that year, United States companies' exports to overseas affiliates amounted to $7.8 billion, of which $6.3 billion represented shipments by United States manufacturing concerns, primarily to their manufacturing affiliates with distribution outlets receiving most of the remainder. Several interesting facts emerge from this survey. First, exports to foreign affiliates accounted for roughly one half of the total exports of the direct investors. Second, the total export sales of direct investors accounted for 67 percent of the total United States exports of merchandise goods.[16] Third, as noted earlier, one of the associated export effects to be expected from United States overseas investment is a demand for capital equipment—both for use in constructing and expanding facilities and to fill the subsequent stream of replacement needs. It has been suggested that United States affiliates might be more likely than other foreigners to purchase such equipment in the United States, and therefore such exports would be directly associated with United States overseas investments. When exports to affiliates are examined in terms of their end use, it is apparent that shipments of capital equipment for the affiliates' use are small, amounting to only 9 percent of total exports to affiliates. Of the other exports to affiliates, shipments of parts and components for further processing or assembly accounted for 40 percent of the total, with 51 percent of the goods destined for immediate resale or lease. The bulk of the shipments of final goods was received by manufacturing affiliates, suggesting that in many cases the manufacturing affiliates themselves act as distributing agents for finished products from the United States.

Using these 1966 data as a bench mark and assuming a constant relationship between exports to affiliates and outstanding investments, a comparable figure for associated exports in 1970 can be estimated to be about $12 billion. It should be noted that this is only a rough estimate of the amount of exports which would *not* have been shipped in the absence of the foreign affiliates because it assumes that *all* exports of United States firms to their foreign affiliates can be attributable directly to the ownership of the affiliates. This must be viewed only as an approximation because, on the one hand, at least some of the goods sold through affiliates probably would have been exported anyway. On the other hand, the existence of the foreign affiliates may have helped promote the sale —either through the affiliates or directly to other foreigners—of goods produced by their United States parents that otherwise would not have been exported.

This brings us to the key question of displaced exports. At the outset, the argument over possible displacement may be limited to the manufacturing industries since the output of other affiliates, principally petroleum and mining and smelting enterprises, represents development of raw material sources not available in sufficient supply in the United States. The problems of evaluating the magnitude of export displacement render sharply defined estimates impossible. To obtain such estimates, it would be necessary to know to what degree the expansion of foreign-sourced output by United States firms replaced, not United States exports, but other potential foreign-owned production. In other words, in the absence of United States-owned affiliates abroad, would the foreign demand for the products have been met by United States exports or by production abroad in a foreign-owned facility? Here then, subjective assumptions about behavior become critical. The most reasonable assumptions, as indicated above, seem to be that markets are relatively competitive for most of the manufacturing affiliates' products, that a significant portion of United States investment in overseas facilities is undertaken in response to lower production and distribution costs (including the effect of tariff barriers), and that these cost conditions as well as needed technological knowledge are fairly readily available to foreign organizations. These assumptions imply that, on the basis of relative cost considerations, production in the foreign market would eventually replace United States exports and that, in the absence of United States firms abroad, foreign firms would in time come to produce the goods. Thus, some, and probably a large proportion, of affiliate production should be viewed as a substitute for output of indigenous foreign firms without United States affiliation rather than as a substitute for United States exports.

Since the process of substitution of foreign production

[16] For comparability with the direct investor export figures, this total merchandise export figure as published by the Census Bureau is adjusted to exclude goods classified by the Census Bureau as special category goods—mainly military-type goods transferred by the Department of Defense. For further details, see *U.S. Direct Investments Abroad, 1966*, Part II, a supplement to the *Survey of Current Business* (United States Department of Commerce, Bureau of Economic Analysis, April 1972).

for United States exports is a dynamic one involving adjustments over time, some insight into the shift of production may be gained by examining the change over time in relative market shares provided by United States exports as opposed to foreign affiliate production. For five major categories of manufactured products for which comparable data on exports and affiliate sales are available,[17] the share of the market provided by United States exports fell from 35 percent in 1962 to 30 percent in 1968.[18] (See Table II for detailed sales and export data.) In other words, if the relative market shares had remained constant over this period, United States exports would have been about $2 billion higher in 1968 than they actually were. It must be emphasized that this is *not* to be interpreted as a numerical estimate of export loss during the interval attributable to the existence of the affiliates. The "loss" might well have occurred anyway as nonaffiliated foreign producers assumed a larger market share, and might more appropriately be viewed as illustrative of a general loss of competitiveness of United States exports in world markets.

In summary, the question of whether there has been export displacement and, if so, of what magnitude essentially cannot be answered on the basis of existing data. However, when the problem is appropriately viewed as a dynamic adjustment process over time, reasonable assumptions about firms' behavior suggest that the amount of export displacement attributable to direct investment is likely to be fairly small. This, of course, in no way contradicts the possibility that, at any one point in time, there may be substitution of foreign affiliate production for United States exports as the adjustment process works itself out.

IMPORTS. As with exports, the question of what effect United States direct investment abroad has on United

[17] Affiliate sales data are classified by type of industry while export figures are by type of product, so that the two categories are not necessarily completely consistent.

[18] For this purpose, the total supply to the market is defined as sales by foreign manufacturing affiliates outside the United States plus exports from the United States summed across the five major categories for which we have comparable data. Data for sales and exports of transport equipment for Canada are excluded from the calculations because the figures are heavily influenced by the movement across the United States-Canadian border of automotive parts associated with the 1965 Automotive Agreement.

Table II

SELECTED DATA ON UNITED STATES EXPORTS AND SALES BY FOREIGN MANUFACTURING AFFILIATES OF UNITED STATES MULTINATIONAL COMPANIES

In billions of dollars

Commodities	1962	1963	1964	1965	1967	1968
Chemicals:						
Affiliate sales	4.4	5.1	5.9	6.9	8.9	10.2
United States exports	1.9	2.0	2.4	2.4	2.8	3.3
Rubber products:						
Affiliate sales	1.3	1.3	1.6	1.7	2.0	2.1
United States exports	0.1	0.1	0.2	0.2	0.2	0.2
Machinery excluding electrical:						
Affiliate sales	3.4	3.7	4.6	5.4	7.4	8.2
United States exports	4.1	4.2	4.8	5.2	6.2	6.5
Electrical machinery:						
Affiliate sales	2.7	3.0	3.6	4.0	4.8	5.3
United States exports	1.4	1.5	1.7	1.7	2.1	2.3
Transportation equipment:						
Affiliate sales	6.7	8.0	9.5	10.7	12.8	14.5
United States exports*	1.8	1.9	2.2	2.2	3.1	3.7
Total for selected goods:						
Affiliate sales	**18.5**	**21.1**	**25.2**	**28.7**	**35.9**	**40.3**
United States exports*	**9.3**	**9.7**	**11.3**	**11.7**	**14.4**	**16.0**

* Excludes civilian aircraft.

Sources: United States Department of Commerce, *Survey of Current Business* and *Overseas Business Reports*, selected issues.

States imports revolves around attempting to differentiate between those imports which would have occurred even in the absence of United States overseas affiliates and those which may be directly ascribable to the existence of these subsidiaries. Once again, the discussion may be limited to imports from manufacturing affiliates since purchases from petroleum and mining affiliates reflect primarily raw materials needed in the United States, which presumably would have been imported even if the United States investors did not own the overseas facilities.

Conceptually, the same considerations of exploiting relative cost conditions as enunciated above in the export discussion could lead United States firms, not only to establish production units outside the borders of the United States, but also to import the output of these affiliates for direct sale or further assembly in the United States. The manufacture of electronic components in the Far East, such as Hong Kong, Taiwan, Korea, and the Philippines, by United States producers is a frequently cited example. Other specific examples can surely be found. To the extent that lower production costs arise out of differing relative factor endowments or other market forces, such overseas production can be seen once again as merely a more rational utilization of resources.

In other instances, the cost advantages of producing abroad may arise not from market factors but from specific incentives provided by host governments. For example, special concessions are given to United States firms by Mexico to induce them to set up assembly plants on the Mexican side of the border and export the final goods back to the United States. In situations of this sort there are, of course, benefits to the host country in terms, for example, of employment and foreign exchange earnings, but there are also disadvantages to the United States in terms of displacement of United States workers with the attendant loss of income. When the cost advantages arise from artificial incentives, it is questionable whether a more efficient pattern of resource use results.

The most striking conclusion which can be drawn from data on sales of foreign manufacturing affiliates to the United States is that such shipments represent a fairly small proportion of total affiliate output and a much smaller percentage of total United States imports than the comparable relationship between exports to affiliates and total United States exports. Imports from all foreign manufacturing affiliates increased approximately fourfold between 1962 and 1968 and reached a level of $4.7 billion in the latter year, or approximately 15 percent of total nonmilitary merchandise imports. While the increase over the period is fairly sizable, it is largely a result of the 1965 Canadian-United States automobile agreement. If imports of transportation equipment from Canada are excluded, the remaining imports rose by about two and one-half times to only $2.5 billion. These sales to the United States accounted for only some 4 percent of total affiliate sales in both 1962 and 1968. Thus, by far the largest part of affiliate output is designed for sale in foreign markets, not in the United States.

Furthermore, the available statistics do not support the claim that there are very significant imports from affiliates in the areas frequently cited as the "low wage" countries, such as Mexico, Taiwan, and Korea, where United States firms are establishing assembly plants and production facilities for parts and components.[19] In fact, the bulk of the increase in nonautomotive imports has been from Canada and was principally centered in three categories: paper and allied products, primary and fabricated metals, and nonelectrical machinery.

Thus, on the basis of the available data, it seems reasonable to conclude that the impact of foreign direct investment on imports is small. Using the relationship between imports from affiliates to outstanding investment in 1968, it can be estimated that such imports (excluding Canadian autos) were about $3 billion in 1970. Not only is this absolute magnitude of imports from foreign affiliates fairly small, but additionally it is likely that a significant portion of the goods currently purchased from these overseas subsidiaries would have been imported from other foreign sources if the United States affiliates did not exist.

CONCLUSIONS

In summation, the empirical evidence available to estimate the total impact on the trade balance of direct investment by United States multinational companies is inadequate to the task. As indicated above, rough estimates can be made from existing statistics of two types of trade effects associated with direct investment. Combining the $12 billion of associated exports with the $3 billion import figure suggests a net positive trade effect in 1970. But even these are only partial estimates of the total trade balance effect and must be interpreted with great caution for several reasons. First, they depend very heavily on

[19] However, it should be noted that there may have been some increase in this type of activity recently which would not be captured in these statistics for 1968.

the underlying behavioral assumptions. In particular, both estimates assume that *none* of these exports to, or imports from, affiliates would have occurred if the affiliates did not exist, while in reality it is likely that some indeterminate portion of both would have been traded with foreign-owned firms in the absence of United States affiliates. Second, these trade balance estimates for 1970 do not take into account any possible export displacement which, as noted above, may be significant in any particular year. Third, and perhaps most importantly, all of these trade effects are more appropriately viewed as part of a dynamic process over time rather than as a specific impact in any given period. On this basis, while there may be some net export gain or loss or import creation in the short run, over a longer time horizon the portions of the observed changes in export and import patterns which can reasonably be ascribed to the direct investment process itself probably tend approximately to balance out or perhaps be a net positive item. Rather, most of the observed alterations in trade patterns should more appropriately be viewed as market responses to shifts in worldwide relative competitive conditions, and would have occurred whether or not the foreign facilities were owned by United States investors.

The real balance-of-payments impact of United States direct investment activities, then, hinges on the relationship between capital account items and related financial flows and, on this basis, the evidence seems clear that United States direct investment is a long-run positive factor in the balance of payments. It must be recognized, however, that there are still many unanswered questions about the underlying motivations and the dynamic processes involved in foreign direct investment. There are most likely significant differences among industries and countries which temper the investment decision, and the future outlook could well be affected by changes in international economic and political relations. There is a great need for more and better statistics on the international operations of multinational firms and wide scope for further research on this important topic.

The Program for the Automation of the Government Securities Market

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Editor's Note: *The following is based on a memorandum which was completed on March 21, 1972 and which was subsequently submitted by the Board of Governors of the Federal Reserve System to the Subcommittee on Securities of the Committee on Banking, Housing and Urban Affairs of the United States Senate in connection with hearings relating to the clearance and settlement of securities transactions. The author has responsibility for the Government Bond and Safekeeping operations of the Federal Reserve Bank of New York. He is also chairman of a Federal Reserve System Subcommittee on Fiscal Agency Operations, which acts as liaison between the Federal Reserve Banks and the Treasury Department with respect to Reserve Bank operations conducted as agent for the United States Government.*

This paper outlines the development and current status of the Federal Reserve-Treasury program for the automation of the Government securities market, including the book-entry procedure for Government securities.

OBJECTIVES AND SCOPE

The ultimate objective of the program is a fully automated Government securities market, in which the pieces of paper representing Government obligations—including both Treasury and Federal agency obligations—have been eliminated and replaced by computerized book-entries, and in which transactions in such book-entry securities are effected by means of wire messages—including computer-to-computer communications—through high-speed lines directly linking computer terminals on the premises of each major market participant throughout the country.

In general, the program was designed to improve the efficiency of operations in Government securities. It is intended to reduce the time, money, personnel, and space required to handle the increasing volume and velocity of transactions in Government securities and, at the same time, to ensure adequate controls and reduce to a minimum the risk of loss or theft of such securities.

The benefits of the program will be available to all owners of Government securities—whether they be primary dealers or private individuals—through the member banks, which will be qualified to open book-entry accounts at their Federal Reserve Banks and to deposit any or all of their customers' securities in such accounts. Thus, all owners of Government securities may, if they so desire, arrange to have their securities converted into book-entry form by depositing them with a member bank, which in turn will deposit the securities in its book-entry account with its Reserve Bank. In this respect, the program provides a substitute for the physical custody of Government securities.

In addition, and just as important, for those banks and bank customers which are active participants in the Government securities market—such as the primary bank dealers and the primary nonbank dealers, through their clearing banks—facilities will be available for effecting central market transactions in such securities through Federal Reserve wire systems. In this respect, the program provides a means for moving the book-entry securities throughout all segments of the Government securities market, with the speed and in the volume necessary to ensure the effective functioning of the market.

Historically, the automation program has comprised two separate, but parallel, lines of development. The first was the development of facilities for transferring and clearing securities transactions among the major participants in the market, beginning with the New York money center banks and the establishment of the Government Securities Clearing Arrangement. The second was the development of the book-entry procedure itself, which began with the conversion into book-entry form of Treasury securities owned by country member banks and held in safekeeping at their Reserve Banks. More recently, there has been a third related development of significance for the Federal Reserve System—the creation of the Reserve Bank "checklist procedure", developed as a transitional measure to deal with the immediate problem of Government securities thefts, pending the longer-term solution offered by the automation program.

WIRE FACILITIES AND CLEARING ARRANGEMENTS

The basic concept of transferring Government securities by means of wire messages has existed for many years in the "CPD" wire facilities maintained by the Treasury and the Federal Reserve Banks, which permit wire transfers between most Federal Reserve offices. Under this system, the commercial bank sender of a security delivers it to the local Federal Reserve office, which then retires the security and sends an appropriate wire message to another Federal Reserve office, which in turn issues a new security, which is then picked up by the ultimate recipient of the transfer message.

The clearing arrangement carries this basic concept further in three important respects: (1) instead of requiring the delivery and pickup of a physical security for each transfer, the transfers are debited or credited to a bank's "securities clearing account"—with appropriate cash entries to its reserve account—and only one delivery of securities is necessary at the end of the day, and only in the net amount due to or due from the bank; (2) the major commercial banks having a large volume of such transactions are linked by wire directly with their Reserve Bank, permitting them to transmit transfer messages from terminals on their premises; and (3) as the final step in a money market center, the major commercial banks are linked with each other, through a Reserve Bank computer switch, permitting them—and their customers, including the nonbank primary dealers—to effect transactions among themselves, thereby providing each of them access to the other major participants in the Government securities market through their own terminals.

The first experiments with clearing procedures were initiated in New York City in 1965, and resulted in the establishment of the Government Securities Clearing Arrangement, which now includes twelve participating member banks. Over the years—and particularly since the installation of the Federal Reserve System's Culpeper switch and the Sigma 5 computer switch at the New York Reserve Bank—the arrangement has been expanded to the point where it now handles virtually all types of transactions in the Government securities market, in any volume that may be required. As an example, during 1971, a year of transition to the use of the new computer equipment, there were about 470,000 transactions effected through the Clearing Arrangement, totaling $710 billion. Last month alone, there were more than 50,000 transactions, totaling $99 billion.

Studies are now in progress for developing clearing procedures at other Reserve Banks. The San Francisco Reserve Bank has been operating a net settlement procedure for CPD transfers with one of its member banks, and the Chicago Reserve Bank has been exploring the possibility of a similar procedure with its larger member banks. Other Reserve Banks have been considering the possible use of such procedures at some future date, as increasing volume may warrant it. The importance of such procedures lies not only in their immediate benefits, but even more important, in the potential for integrating a clearing arrangement with the basic book-entry procedure.

BOOK-ENTRY PROCEDURE

In essence, the book-entry procedure is a new legal system, created by Federal regulations having the force of Federal law (e.g., Subpart O of Treasury Circular No. 300), under which the piece of paper representing a Government obligation may be eliminated, and the obligation recorded on the books of a Federal Reserve Bank. The first phase in the development of the procedure began in 1968, when it was established as a substitute for the physical custody of Treasury securities in the safekeeping accounts maintained by the Reserve Banks for country member banks. Although the procedure was made available to all member banks at that time, until last year most of the largest money center banks did not utilize the procedure, primarily because of burdensome tax-reporting requirements.

Since 1968, there has been a gradual extension of the procedure to additional types of securities accounts. The process has been gradual because the conversion of each class of security account has presented new and different legal problems, tax questions, and operational complications. These are reflections of the fact that for centuries

the law, commercial practices, and traditions governing transactions in securities have been based on the possession of a piece of paper having intrinsic value. Under the book-entry procedure, that piece of paper no longer exists.

By the end of 1970, most of the different types of safekeeping accounts maintained at the Reserve Banks had been converted to book-entry form. The next phase of the program contemplated an extension to Government securities held outside the Reserve Banks, including in particular the securities of the primary dealers in Government securities—both bank dealers, which involved certain tax questions, and nonbank dealers, which involved in addition the question of their legal status as customers of clearing banks. Beyond that phase, the program aimed at covering all securities held by member banks for any third party.

The overall plan for the conversion of these types of securities accounts envisaged a program of several years' duration. However, the timetable was greatly accelerated by the "insurance crisis" in the Government securities market early last year, which resulted from the abrupt emergence of the problem of securities thefts.

SECURITIES THEFTS AND CHECKLIST PROCEDURE

The problem of securities thefts is in large part rooted in the difficulties of the financial community in coping with the vast amounts of paper required by traditional methods of operation. During the past year, the matter has been the subject of close study by Congressional committees, the Securities and Exchange Commission, and the financial community itself. The studies continue, and will no doubt result in basic changes in existing procedures in the banking system and in the securities markets, some of which will come about as a result of Federal legislation. The Federal Reserve has an interest in many aspects of this problem and its proposed solutions, but for present purposes it should suffice to note only those relating directly to the Government securities market.

The problem of securities thefts first came to public attention in connection with Government securities. Within a matter of weeks at the end of 1969, $17 million in Government securities were reported stolen from three New York City banks. By the end of that year, a national total of approximately $30 million in losses had been reported to the Treasury, and the losses continued at the same high level in 1970.

In view of the magnitude of the problem, it was clear that the Federal Reserve System had a direct interest in the matter. Apart from the responsibilities of the Reserve Banks as fiscal agents of the United States, the System had an immediate concern in the problem as it affected the banking system, and also as it affected the performance of the Government securities market. It was also clear that, while the book-entry program offered a long-term solution as a means of preventing thefts, there was an immediate need to assist in recovering securities already stolen.

It was against this background that the "checklist procedure" was developed. Under the procedure, which was adopted on a uniform basis by all Federal Reserve Banks through the Conference of First Vice Presidents of the Federal Reserve Banks, a current list of stolen securities is maintained at each Federal Reserve office, based on reports received from banks and other financial institutions throughout the country, and more recently, from the Treasury. Up-to-date information is promptly circulated to all Federal Reserve offices, by wire, through the New York Reserve Bank, which acts as the coordinating bank under the procedure. With the list, each Federal Reserve office checks the securities received at that office, and also serves as a clearing house for information on stolen securities within its own territory.

Experience with the checklist procedure since 1970 indicates that it has been fairly successful in achieving its primary objective—to assist in discovering stolen securities. It does not, of course, prevent securities thefts, a longer-term objective that the book-entry program seeks to achieve.

INSURANCE CRISIS AND ACCELERATED BOOK-ENTRY PROGRAM

The problem of thefts led directly to the "insurance crisis" of early 1971, which endangered the continued functioning of the Government securities market. At that time, the Continental Insurance Company had announced plans to terminate its coverage of bearer Government securities held by money center banks, dealers, and brokers. Since Continental was the predominant carrier in the field, there was a risk that if such plans were implemented, the major participants in the market would terminate operations, and the market would cease to function.

The ultimate avoidance of such a result required several months of intensive negotiations involving the Federal Reserve, the Treasury, the insurance companies, and the leaders of the banking and securities industries. It also involved the adoption of a contingency plan to attempt to handle essential market operations through the New York Reserve Bank; it required the enactment of Federal legislation to permit the Treasury to settle claims on stolen securities; and—most important in the long run—it resulted in the formulation of a greatly accelerated program for the further extension of the book-entry procedure.

The new program was designed to accelerate existing long-term plans for automation as rapidly as possible. The program required action by the Treasury, in amending the governing Treasury regulation; by the Internal Revenue Service, in amending its tax rulings on dealer securities and tax-reporting requirements; and by the Federal Reserve Banks, through the Committee on Fiscal Agency Operations of the Conference of First Vice Presidents of the Federal Reserve Banks, in revising Reserve Bank operating rules and procedures. To be successful in averting the complete termination of insurance coverage, the program also required action by the New York City banks affected by the crisis, who were expected to begin promptly the process of converting their securities accounts to the book-entry procedure.

By April 1971, all of the necessary legal actions had been completed. In brief, the program contemplated that the book-entry procedure would be extended to cover (a) securities owned by primary dealers—both bank dealers, and nonbank dealers acting through their clearing banks; (b) securities held by member banks in customer accounts, including the establishment of special book-entry accounts to accommodate collateral loans, repurchase agreements, pledges, and similar arrangements; and (c) eventually, securities held by member banks in trust accounts, which required the resolution of certain legal questions under state laws. The plan also contemplated the further development and utilization of the Government Securities Clearing Arrangement and the System's wire network. In addition, plans were made for the extension of the overall program to the securities of Federal agencies.

When the program was formulated, it was understood that it would be put into effect in stages; the first stage was limited to the New York City banks participating in the Clearing Arrangement, who were most vulnerable to the problem of insurance coverage. In view of the pressures under which the program was formulated, such an approach was also deemed desirable as a means of experimenting with the new procedures and developing a basic pattern of book-entry accounts that could accommodate the operations of all member banks.

During the first six months of the program, nine banks opened new book-entry accounts, including several special accounts in which a limited number of customer securities were gradually deposited. Several banks—particularly the clearing banks, acting as agents for the nonbank dealers—encountered delays because of the need to develop adequate computer systems to handle the volumes involved.

During the period, the capabilities of the Clearing Arrangement were further enlarged as the computer switch systems came into operation, and all of the new book-entry accounts were integrated into the Clearing Arrangement. During the same period, New York State enacted legislation, endorsed by the Federal Reserve Bank of New York, to permit the application of the book-entry procedure to Government securities held by banks as trustees.

At the end of the six-month period, there was a comprehensive review of operations in the light of experience to date, which indicated the desirability and feasibility of certain changes in the basic legal concepts underlying the book-entry procedure—particularly with respect to transfers and pledges of customer securities—that would obviate certain operating complexities and result in a much simpler system. Since then, the System Subcommittee of Counsel on Fiscal Agency Operations, working with counsel to the commercial banks and Treasury counsel, have been developing the necessary legal framework to implement the changes. It is expected that the new rules will be published in the *Federal Register* as amendments to the governing Treasury regulation within the next week or two.*

CURRENT STATUS

At this point in time, ten of the participating banks have opened a variety of new book-entry accounts, including separate accounts to hold investment portfolios, dealer inventories, customer securities, and special collateral accounts. The total amount in these accounts is now about $4 billion, and is continuing to increase. The securities already deposited in these accounts include some or all of the dealer inventories of most of the dealer banks (including dealer banks in the Chicago and San Francisco Districts, through their New York clearing banks), and most of the nonbank dealers. The process of conversion has been gradual and is continuing.

All of these book-entry accounts have been integrated into the Clearing Arrangement. This means, in effect, that all transactions in these accounts—including purchases, sales, repurchase agreements, free deliveries, denominational exchanges, original issues, redemptions at maturity, and any associated debits or credits to Reserve accounts—are effected through the terminals located on the premises of the member bank depositors, without the need for the existence of any physical security.

The overall volume handled through the Clearing Ar-

*Editor's note: The amendments were published on April 29, 1972.

rangement continues to increase. In the week of February 18, during a Treasury refunding operation, 17,285 transactions went through the arrangement, totaling about $32 billion.

In terms of the book-entry program as a whole, there are approximately $171 billion in Treasury securities in book-entry form at all Reserve Banks. About $145 billion of that amount is held at the New York Reserve Bank. Of the total amount in book-entry form, approximately $155 billion is in marketable public issues, out of a total of about $262 billion in total marketable public debt outstanding. Thus, approximately 60 percent of the outstanding marketable public debt is in book-entry form. In addition there are about $84 billion in "special issues" in book-entry form. Including these issues, approximately 70 percent of the outstanding gross public debt, excluding savings bonds, is in book-entry form. In terms of the goals of the program, there remains roughly $95 billion in bearer Treasury securities eligible for conversion into book-entry form. The great bulk of these securities is held by parties which are—or could be—customers of member banks, including trust accounts.

FUTURE PLANS

At this point, the most immediate goal of the program is to complete the process of conversion of all primary dealers' securities. Then, as soon as the new amendments to the Treasury regulation are published, the way will be open to continue with the further extension of the program to all customer securities, not only at the participating New York banks, but also at the other member banks throughout the country. The basic pattern of accounts and procedures has been worked out in the light of the New York banks' experience, and the new amendments should facilitate the expansion of the program for all member banks. There are some particular questions that have yet to be resolved—such as agreement on contingency plans in the event of computer failures and other emergencies, and approval of a form of lending agreement among the major market participants—but these questions will no doubt be resolved soon. As soon as they are settled, and as soon as new uniform operating circulars are formulated for all Reserve Banks through the Conference of First Vice Presidents, each Reserve Bank should be in a position to make the program available to member banks in its District. All Reserve Bank fiscal agency officers have been preparing for that step; there have been meetings of such officers during the past year to review the operations of the program, and another meeting will be held soon, before the next phase is begun.

While the book-entry program will be available to all member banks for their customer securities, the rate at which those securities will be converted will depend upon the capabilities of the member banks themselves. No doubt the process of conversion will continue to be a gradual one. In addition, the laws of many states present legal problems that must be resolved, presumably by legislation, before member banks subject to such laws may convert securities held in trust accounts, which, of course, comprise a large proportion of commercial bank custody accounts.

Once the revised Treasury regulation is published, similar book-entry regulations can be promulgated by the other Federal agencies, and the next phase of the program will focus on the inclusion of agency securities. In January of this year, the Postal Service became the first Federal agency to promulgate a book-entry regulation and to issue securities in book-entry form, but that was a rather special situation. The inclusion of all of the issues of all Federal agencies will be a gradual process, but it presents no special legal or operational problems that would be difficult to resolve.

It is impossible to indicate a timetable for the completion of the automation program. Apart from the obvious uncertainties involved, it would be difficult to measure with any precision the point at which the basic objectives of the program will have been achieved. While it may be desirable to attempt to convert all outstanding Treasury and agency securities to book-entry form, the purposes of the automation program will have been fulfilled long before that stage is reached. The program will have achieved its ends whenever all—or virtually all—transactions in Treasury and agency securities in the Government securities market can be effected by means of wire messages among the major participants in the market, without the need for physical securities. In the light of the experience to date, that time does not seem too far distant.

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