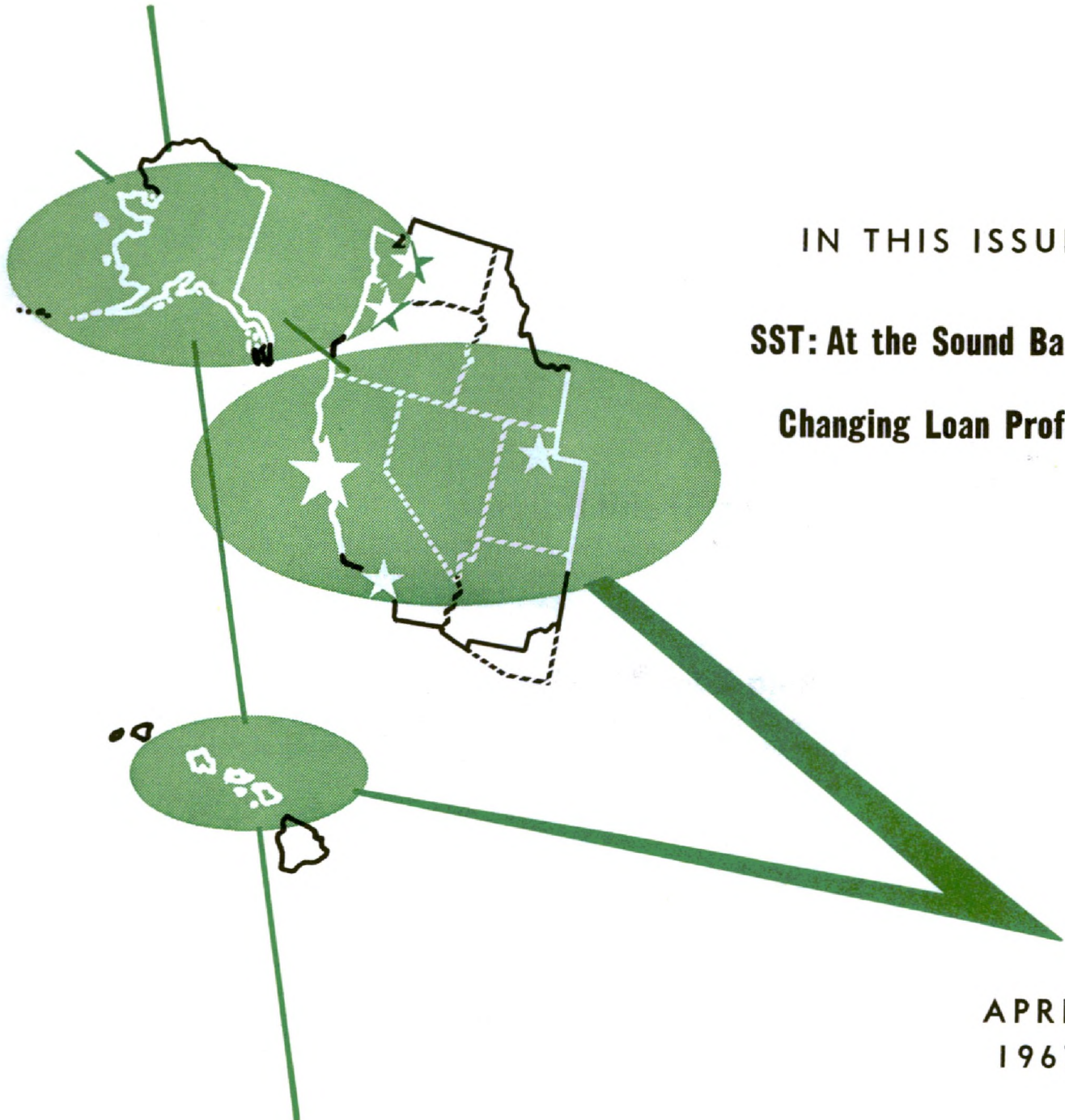


FEDERAL RESERVE BANK OF SAN FRANCISCO

MONTHLY REVIEW



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APRIL
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SST: At the Sound Barrier

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— or it may be an eardrum-shattering, budget-shattering disaster.

Changing Loan Profile

... Long-term trends in Western banks' loan portfolios show the
impact of sharp gains in population, employment, and income.

Editor: William Burke

SST: At The Sound Barrier

THE supersonic transport program has completed its preliminary design stage and now stands at the threshold of its development phase — at which point it faces political and economic problems as difficult in their own way as the sound barrier which trans-sonic aircraft must break. The plane may well be, as its supporters claim, one of the most remarkable transport advances of our time. On the other hand, it may be, as some critics contend, an eardrum-shattering, budget-shattering disaster that fails to provide any of the efficiencies normally associated with advances in the aircraft art.

Development of the SST undoubtedly would reenforce a national asset of immense value — the U.S. supremacy in aerospace capability. This plane, with its capability for carrying 350 passengers over 4,000 miles at a speed of 1,800 miles per hour, would be one of the most productive long-range vehicles in history. (In a year's time it could carry as many passengers as six Queen Marys.) It would reshape geography, making Asia as close as Europe is today, and making Europe much closer than the two coasts of this country are today.

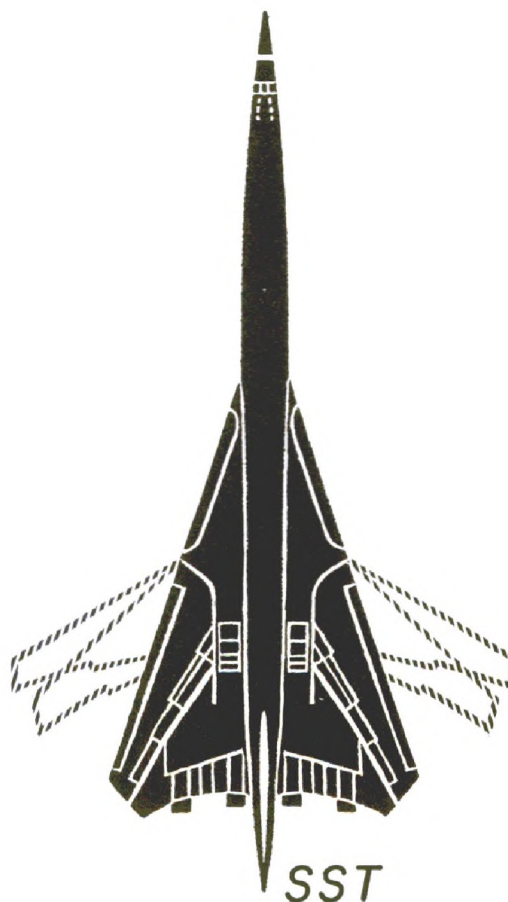
Even so, the SST is an exception to the historic rule that a new model plane is always superior to its predecessors in terms of benefits and in terms of costs. It meets these tests vis-a-vis the jet transports operating today, but its 2½-cent seat-mile operating cost would be substantially above the cost of the large and efficient 747 transport which is slated to make its debut in 1969.

Facing Phase 3

The pros and cons of the argument have received increasing attention now that the program has completed its \$300-million preliminary stages and prepares to enter its \$1.1-

billion development stage (Phase 3). The Federal Government has picked up most of the expenses associated with the program to date and may be expected to do the same with Phase 3. Beyond that stage, however, another \$700 million may be needed for flight testing and further development, and perhaps \$2½ billion for actual production costs. In these later stages, the manufacturer may be forced to find private financing.

In the fiscal 1968 budget of the Federal Aviation Agency, \$800 million is included for program financing. In the words of the President's budget message: "We are currently considering the construction of a prototype supersonic transport. The allowance for contingencies is adequate for covering the possible cost of this effort should an



affirmative decision be made to proceed.” That affirmative decision came in late April, when the Administration authorized the previously chosen prime contractors to proceed with the construction of two prototype models.

Anglo-French concord

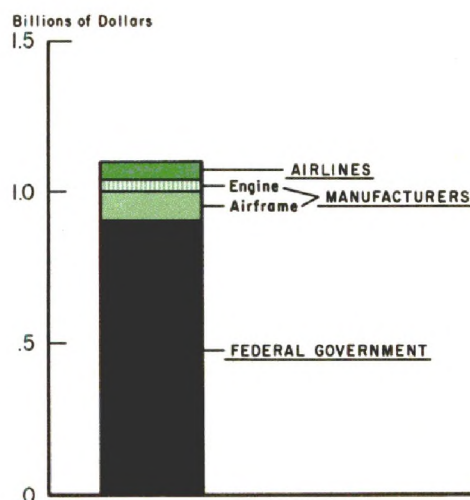
Major interest in the development of a supersonic transport first developed abroad and has now culminated in the production of the Anglo-French Concorde, which is scheduled to go into service in 1971. The British and French governments became interested in this type of plane when they found that the market for long-range subsonic jets had been preempted by the American 707 and DC-8, and were reinforced in their decision when their entries in the short-haul market (the Britannia and the Caravelle) were outdistanced by the American 727 and DC-9. (President de Gaulle made his triumphal tour of Latin America in a Caravelle, but before he could begin his tour he had to cross the Atlantic on an American jet.

Almost against their will, European aircraft designers found themselves being forced across the sound barrier. The result was the Anglo-French agreement in late 1962 to share the design and construction costs of the Concorde. Seventy-two firm orders are now in hand for this \$16-million plane, which will carry 136 passengers at a speed of 1,450 miles per hour. If and when the American SST takes to the skies, however, the smaller, slower, and less technically advanced Concorde may find itself at a distinct competitive disadvantage. (The British drop the final “e” in the spelling of the Concorde, and on occasion they give signs of wanting to drop the program altogether.)

Washington's role

On this side of the ocean, the FAA initiated an \$11-million exploratory SST study in 1961. In 1963, the day after an American airline ordered six Concorde, President Kennedy pushed the program forward, declaring that the SST was “essential to a strong and forward-looking nation.” In mid-1965, Pres-

U.S. Government pays most SST development costs



ident Johnson accelerated the design competition, and this phase came to an end at the beginning of this year with the choice of a winning aircraft design.

In Phase 3, which is now getting underway, the Government will support the construction of two prototype planes for test and evaluation, with an initial 1968 appropriation of \$198 million. Total Phase-3 financing requirements are estimated at \$1.1 billion, with the Federal Government putting up \$900 million, the prime contractors \$139 million, and airline purchasers \$57 million (\$1 million for each aircraft now on order).

For the entire program through Phase 3, the cost for the airframe manufacturer would be \$203 million, and for the engine manufacturer \$86 million, including cost of new facilities. But the total cost to the Federal Government through Phase 3 would be about \$1.2 billion.

FAA market projections suggest that the government would receive its investment back in the form of royalty repayments if 300 planes are sold at \$40 million apiece. If 500 sales are made, the Federal investment would be returned with 6-percent interest, and if a maximum of 1,200 sales are made the Federal investment would be returned with 12-

percent interest. And, if the standard projection of 500 sales is met, the makers might be able to turn a profit around 1984 — a decade after the first plane is delivered.

Seattle's role

For the airframe manufacturer (Boeing) and for the Seattle area in general, the SST program presages future prosperity but no immediate large increase in jobs. At present, about 1,500 employees are involved in the SST design phase as the manufacturer awaits the signal to begin the construction of two prototype planes. In the distant future, however, as the SST program moves into full production, perhaps 12,000 new aircraft jobs would be created in the Seattle area. The program also would involve hundreds of subcontractors throughout the nation; six major subcontractors have already been chosen to work on fuselage, wing, and tail parts, and altogether they will account for 69 percent, by weight, of the completed aircraft.

As the program moves into the prototype and production phases, it should thus bring further prosperity to an already prosperous region. Within a single year, Boeing's backlog for subsonic jets and for space and defense items has jumped from \$3.2 billion to \$5.3 billion. The firm is now building at Everett, Washington, the world's largest manufacturing plant — 160 million cubic feet — for the construction of the mammoth 747 transport plane. (Fully loaded, this plane would weight more than twice as much as a 707 transport.) As construction proceeds on this major project, the firm's present 96,000 employment in the Puget Sound area will increase substantially. But then, as manpower and facility requirements phase out for the 747 program, the SST program would be a welcome addition to the firm's workload.

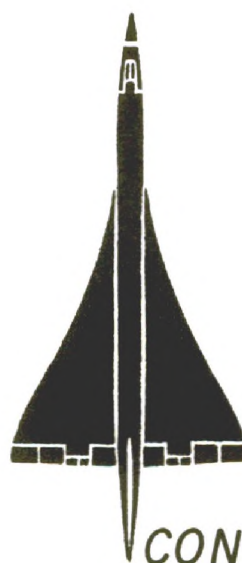
Until recently, however, the program was in a state of uncertainty, not so much because of the technical problems associated with this type of enterprise, although these are real

enough, but rather because of the argument over whether the program is actually worth its cost. Opponents of the SST do not claim that the plane will never get off the ground; rather, they argue that it should not be permitted to leave the ground without substantial modifications in program design. Supporters of the project, however, claim that the benefits to be realized from the program are so great that they far more than offset the heavy costs which will be incurred.

Air: the new medium

The SST concept involves an interesting engineering challenge, since the difference between supersonic and subsonic vehicles is comparable to the difference between surface ships and submarines. The air at this speed behaves like a new medium, and it requires the development of radical designs and materials to cope with these new physical forces.

As the plane approaches the speed of sound — about 660 miles an hour at high altitude — the force required to push it through the air rises abruptly. The sound waves cannot outspeed the supersonic plane, so the air in front of the plane is undisturbed until the plane pushes it aside. This fact accounts not only for an intense sonic boom but also for heat and pressure problems which give the aircraft peculiar handling problems.



At the speed designed for the SST, it will be operating in a so-called thermal thicket — in a region where the aircraft cannot dissipate the heat generated by air friction. As a solution, aircraft fuel can be used as a heat sink, with the engine fuel made to flow between vital areas to keep aircraft parts from melting, but intense heat problems still develop when the fuel to the engines is cut off for descent.

Problems of stress would also develop at the plane's cruising altitude, especially around the cabin-pressure seals at door joints and windows. A technical solution is feasible — no windows — but this in turn might create psychological problems for passengers. Stresses could also build up at the pivot of the plane's folding wing, which ranges from a 20 degree sweep at takeoff to a 72 degree sweep at maximum speed.

There are other technical problems, too. Maneuverability: the SST would require almost 200 miles to make a 180-degree turn at supersonic speed. Atmospheric dangers: at cruising altitude of 64,000 feet, the SST would confront problems arising from cosmic radiation. Balance: when the plane goes supersonic, its center of pressure undergoes a change in relation to the center of gravity, and the pilot has trouble maintaining control over the craft.

Sound: a new problem

Nonetheless, the major technical (and cost) problem is the problem of sonic boom — the explosive sound created when an object moves through the atmosphere at supersonic speed because of the inability of air molecules to move faster than the speed of sound. The intensity of the boom is influenced by temperature and wind variation, but mostly by the plane's altitude, weight, and shape — the greater the weight, the greater the boom.

Sonic-boom intensity is measured by pounds per square foot "over-pressure" — the excess over the normal weight of the atmosphere. The SST would probably exert 2 psf over-pressure in accelerating to its cruising speed. In order to reduce this somewhat painful noise to the more bearable range of 1 psf over-pressure, either a smaller plane would have to be designed or the plane would have to fly at subsonic speed over population centers — or not fly over such centers at all.

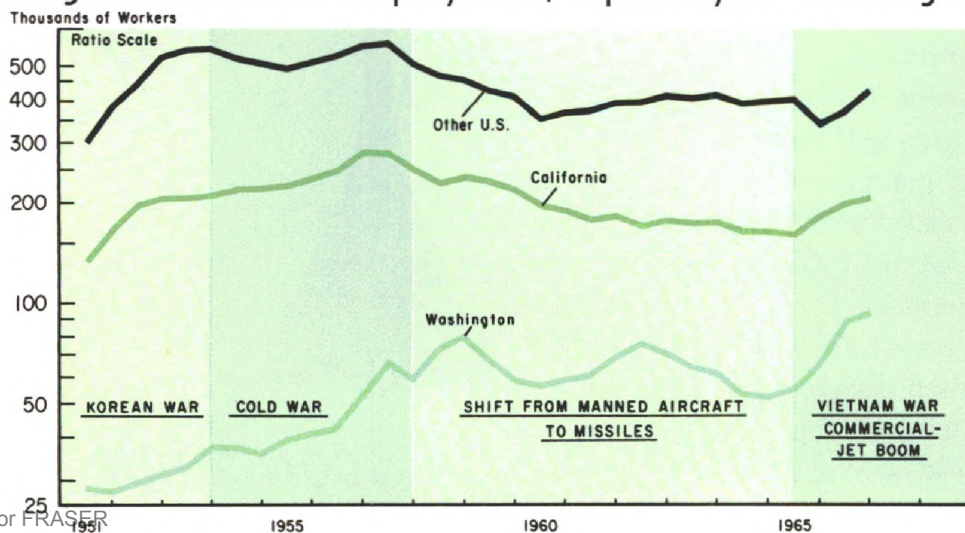
However, seat-mile operating costs would soar with the use of small planes or with substantial restrictions on supersonic flight, so that airlines might avoid purchasing such planes on economic grounds alone. In 1964, then FAA Administrator Halaby told a congressional committee:

“The loss of market potential due to such restrictions would probably be so severe as to make production of the SST economically unfeasible.”

The cost of sound

The problem of sonic boom is critical to the success of the program because it so closely affects the cost and pricing

Jet-transport boom and Vietnam war create sharp gains in aircraft employment, especially in Washington



of each plane. Although the FAA now uses a cost projection of \$40 million per plane, other projections have ranged between \$28 and \$50 million per plane — a critical difference because airlines must reflect plane prices in scheduling fares.

The FAA's maximum market projection of 1,200 plane sales by 1990 is based on several important assumptions: 1) unlimited operation will be permitted over crowded areas despite the sonic-boom problem, and 2) a passenger surcharge will be levied by airlines to help them recover the high pur-

chase cost of SST planes. Critics question each of these assumptions, however. They argue that supersonic flying will be banned over population centers of this country and Europe, and that this step will take away perhaps 60 to 80 percent of the SST market. They also contend that if the International Air Transport Association should enforce a surcharge for supersonic flight, in order to protect the huge investment of foreign airlines in their subsonic jet fleets, perhaps one-half of all potential SST passengers will be lost to the subsonics.

Meanwhile, Back in the Holding Pattern

In coming decades, congested airlines and congested airports may offset most of the savings made possible by rapid jet aircraft, subsonic or supersonic. Despite all the radar-computer improvements in route control and tower operation, it is apparent that the nation's airspace and groundspace are not limitless.

In air route control, to maintain the proper horizontal and vertical separation between planes, controllers must attempt to reserve for each single jet a moving block of airspace 25 miles long, 10 miles wide, and $\frac{1}{2}$ mile thick. Consequently some routes are filled to capacity at peak hours; at such times tower operators are forced to limit takeoffs until airspace becomes available and pilots are forced to fly at inefficient jet altitudes or on roundabout routes.

On the ground, many major airports are operating near peak capacity right now. Each of New York's three airports will reach absolute capacity within the next one to five years, and the fourth airport now projected for that area will not be ready for another decade. Chicago's O'Hare Airport, which now handles three times the capacity of New York's Kennedy Airport, logs a landing or takeoff every 20 seconds during rush hours. Thus, at these and other major airports, delays are frequent and costly in terms of both time and money.

Not surprisingly, the New York-Philadelphia run — which in 1940 could be covered in 46 minutes with a 185 mile-per-hour DC3 — today requires 53 minutes even with a 550 mile-per-hour modern jet. Air traffic experts say that Kennedy Airport will be so crowded in 1969 that it will have an average two-hour wait for runway clearance. The problem may ease somewhat as larger planes with larger capacity come into service. But to the average SST passenger, who may pay a surcharge for the privilege of flying from New York to Los Angeles in two hours' time, a two-hour wait on the ground may be frustrating indeed.

Critics also contend that only a relative handful, perhaps 1 out of every 20 Americans, would profit from supersonic travel, in relation to the many who would be inconvenienced. (The plane, in Senator Proxmire's view, would be a "booming, zooming gift to the jet set.") One suggestion is that government pay special compensation to people whose homes or nerves are damaged by living in the path of the sonic boom. But such compensation could be rather expensive because roughly half the national population lives in areas that would be serviced by the plane.

Returns to the government

Opponents also question why the Federal government should be involved at all in such an enterprise. Dr. Stephen Enke, former chief of an SST study group in the Pentagon, points out, "There are few modern instances of the development with public funds of a technologically advanced project that is to be produced and used commercially by private firms."

Speaking to a recent convention of the American Economic Association, he argued that the program should be continued only so long as it is expected to earn a rate of return comparable to that received by U.S. industry generally. "If the U.S. government is initially to finance 80 to 90 percent of the U.S. SST's development costs, and if up to \$4 or \$5 billion of American resources must somehow be invested in development *and* manufacture before the program generates a net cash inflow from sales to airlines, an obvious economic test of SST's justification is its ability to earn the 10-15 percent rate of return earned on an average by domestic resources employed in U.S. industry."

The program's rate of return depends on the costs of development and manufacture, operating costs and operating receipts per plane-mile, and the availability of a large

enough market of potential supersonic passengers. Dr. Enke argues that the overall rate of return could be 10-15 percent under certain favorable assumptions but that the return could just as well be negative under equally plausible assumptions. "Perhaps the best guess is an overall program rate of return of zero to 5 percent. The simple truth, however, is that such a complex and technically advanced aircraft must be an investment gamble in its first generation."

Returns to the nation

Supporters of the SST contend that this investment gamble must be taken because of the broad national interests that would be served by the SST program. Obvious benefits would accrue to the nation in terms of its balance of payments, its military and commercial needs, its technological development, and especially its national prestige.

On balance-of-payments grounds, sales of American SSTs at the expense of foreign SSTs (such as the Concorde) might create a substantial plus instead of a minus in the nation's international accounts. On the basis of FAA market projections of 250 sales to foreign airlines by 1990, about \$10 billion in export income could show up on the plus side of the payments balance.

Critics of the program contend, however, that export sales of American SSTs could reduce export sales of American subsonic planes, and that U.S. airlines could lose passengers to foreign airlines operating U.S.-made SSTs. Thus the balance-of-payments effect would probably be only a fraction of the export price of the SSTs — and in fact could be negative if tourists spent more money abroad as a result of easier access to foreign countries.

Speed undoubtedly is a major argument in favor of the SST program. An important consequence of supersonic travel would be to bring distant places closer, especially since

the efficiency of SSTs is increased on long hauls. Even without such a vehicle, trans-Pacific travel may rise fivefold within the next decade, and the shortening of distances made possible by the SST could make such tourist projections look overly conservative in later decades.

Supersonic speed, in addition to stimulating commercial and pleasure travel, could also have strong military benefits. According to one study, a million combat troops could be transported 4,000 miles away within a ten-day period with a fleet of 400 SSTs. On the other hand, Defense Secretary McNamara contends that essentially the same results could be achieved through the use of the C5A, a much larger and more efficient subsonic transport which will begin flying in 1969.

Meanwhile, substantial technological fallout has already occurred from the SST program. In particular, the program has stimulated enormous advances in the use of titanium. This sophisticated metal is still diffi-

cult to work; it is formed at glowing cherry-red temperatures, cut with gold-plated tools, and welded in an inert atmosphere encased in plastic bags. But with all these difficulties, it has proven viable at the 500-degree temperature needed for supersonic flight, and in addition has already been halved in price from \$20 to roughly \$6-12 per pound.

On grounds of national prestige also, the completion of the program undoubtedly would reinforce the U.S. supremacy in aerospace capability. If the American SST is not produced, the Concorde or (perish the thought) the Russian TU-144 could well dominate the airlines of the world in future decades.

Even the sharp critics of the program, such as Dr. Enke, expect that a safe, profitable and relatively noiseless SST "will be flying well before the end of the '70s." The question thus is not whether the American SST will get off the ground, but rather when.

—William Burke

TWELFTH DISTRICT BUSINESS

| Year and Month | Condition items of all member banks (millions of dollars, seasonally adjusted) | | | | Bank debits 31 cities (1957-59 = 100) | Bank rates: short-term business loans | Total nonfarm employment (1957-59 = 100) | Industrial production (1957-59 = 100) | | |
|----------------|---|------------------------------|--------------------------------|---------------------------|--|--|--|--|----------------------|-------|
| | Loans and discounts | U.S. Gov't. securities | Demand deposits adjusted | Total time deposits | | | | Lumber | Refined Petroleum | Steel |
| 1959 | 15,908 | 6,514 | 12,799 | 12,502 | 109 | 5.36 | 104 | 109 | 101 | 92 |
| 1960 | 16,612 | 6,755 | 12,498 | 13,113 | 117 | 5.62 | 106 | 98 | 104 | 102 |
| 1961 | 17,839 | 7,997 | 13,527 | 15,207 | 125 | 5.46 | 108 | 95 | 108 | 111 |
| 1962 | 20,344 | 7,299 | 13,783 | 17,248 | 141 | 5.50 | 113 | 98 | 111 | 100 |
| 1963 | 22,915 | 6,622 | 14,125 | 19,057 | 157 | 5.48 | 117 | 98 | 112 | 115 |
| 1964 | 25,561 | 6,492 | 14,450 | 21,300 | 169 | 5.48 | 120 | 107 | 115 | 130 |
| 1965 | 28,115 | 5,842 | 14,663 | 24,012 | 182 | 5.52 | 125 | 107 | 120 | 138 |
| 1966 | 29,858 | 5,444 | 14,341 | 25,900 | 217 | 6.32 | 132 | 103 | 123 | 140 |
| 1966: Feb. | 28,748 | 5,737 | 14,790 | 23,904 | 206 | ... | 129 | 111 | 119 | 135 |
| Mar. | 28,897 | 5,589 | 15,006 | 24,169 | 212 | 5.89 | 130 | 108 | 117 | 143 |
| Apr. | 29,267 | 5,309 | 14,924 | 24,579 | 227 | ... | 131 | 113 | 122 | 147 |
| May | 29,157 | 5,128 | 14,812 | 24,735 | 221 | ... | 131 | 107 | 125 | 145 |
| June | 29,688 | 4,919 | 14,780 | 25,001 | 220 | 6.18 | 131 | 105 | 128 | 144 |
| July | 29,791 | 5,071 | 14,753 | 25,265 | 227 | ... | 131 | 104 | 130 | 143 |
| August | 29,764 | 5,473 | 15,120 | 25,271 | 215 | ... | 131 | 95 | 119 | 136 |
| Sept. | 29,532 | 5,190 | 14,819 | 25,159 | 229 | 6.58 | 132 | 93 | 123 | 140 |
| Oct. | 29,583 | 4,987 | 14,719 | 25,085 | 224 | ... | 133 | 96 | 121 | 142 |
| Nov. | 29,538 | 5,267 | 14,800 | 25,318 | 207 | ... | 135 | 89 | 125 | 142 |
| Dec. | 29,858 | 5,444 | 14,341 | 25,900 | 220 | 6.62 | 135 | 97 | 120 | 141 |
| 1967: Jan. | 30,274 | 5,468 | 14,437 | 26,134 | 226 | ... | 136 | 98 | 123 | 142 |
| Feb. | 29,923 | 5,889 | 14,376 | 26,425 | 233 | ... | 137 | ... | ... | 135 |

Changing Loan Profile

IN 1966, as business loans soared and mortgage funds dwindled, the allocation of bank credit among the various sectors of the economy became a subject of widespread interest. But to gain perspective on these recent shifts in credit flows, the longer-run trends in bank loan portfolios should also be examined. Such an analysis is particularly relevant for Western banks in view of their very rapid growth in the preceding decade — growth which sharply enhanced their position nationally as suppliers of bank credit.

What were the major factors affecting bank-credit growth and loanable-funds allocation in the West during the 1955-65 period? Obviously, banks in Twelfth District states, like their counterparts in other sections of the country, were influenced in their lending policies by recessions and expansions and by the attendant shifts in monetary and fiscal policies — including, in recent years, actions related to the nation's unfavorable balance-of-payments position. Structural changes in deposit composition also played a significant role in shaping bank lending policies. In addition, competition intensified from a wide range of fast-growing nonbank

financial institutions — particularly in the fields of real-estate and consumer loans.

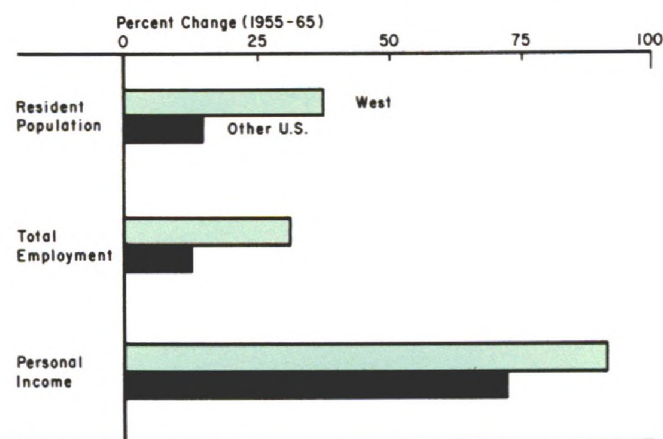
Shift toward the West

But over and above these factors, Western banks faced credit demands stemming from a high rate of population growth, mainly due to net in-migration; a large expansion in employment; and a sharp rise in personal income. For the decade as a whole, these measures of economic activity in the nine states of the District rose at a faster rate than in the rest of the nation — a reflection of the accelerated industrialization then taking place in the West.

As the decade progressed, the annual rate of increase of the civilian population gradually slowed — from 4.1 percent in 1955 to 2.6 percent in 1965 — but still, in each year, the gain for the Western states exceeded the annual growth rate in the rest of the nation. Moreover, total employment grew more rapidly in the West than elsewhere in every year of the decade, and personal income increased at a faster pace in every year except 1965. Thus, for the period as a whole, population increased 37 percent in the West and only 15 percent elsewhere, while employment rose by 31 as against 12 percent, and income by 92 as against 72 percent.

Not surprisingly, then, insured commercial banks in District states exhibited a faster rate of growth in total loans over the decade than did their counterparts in the rest of the nation — 171 vs. 144 percent, respectively. However, the faster lending pace at Western banks was accompanied by wider year-to-year fluctuations, particularly around cyclical turning points. Nevertheless, the annual June-to-June percentage increase in total loans (less loans to banks) fell below the gain recorded else-

Major economic indicators rise more sharply in West than elsewhere



where in only three years — 1958, 1961, and 1965.

For one very significant category, business loans, 1965 was the only year in which District banks failed to exceed the national rate of gain. The pace of consumer lending was faster than in the rest of the nation in all but three years (1957, 1961, and 1965). On the other hand, Western banks failed to match the national pace in mortgage financing in seven of the ten years under review.

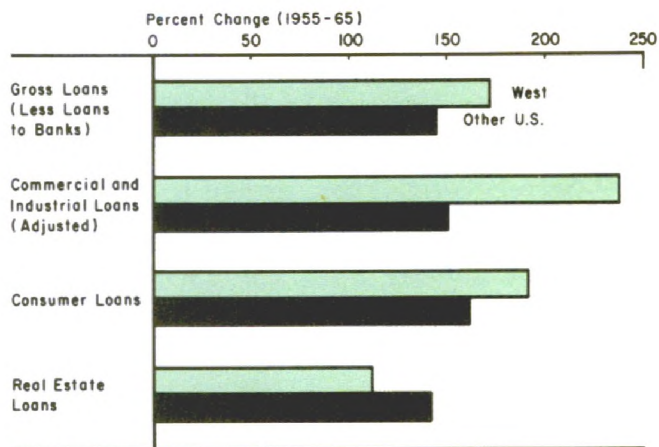
Before the effects of this rapid loan expansion on the composition of bank loan portfolios are examined, it should be noted that the structure of loan portfolios traditionally changes rather slowly over time. The magnitude of outstanding loans at commercial banks is so large that any reallocation of funds must be relatively great to bring about a significant percentage change in any single loan category's share of total outstandings. Most real-estate loans, for instance, have relatively long maturities and — except when they are sold out of portfolio to institutional investors — continue to be carried in banks' portfolios for many years.

In addition, at any given point in time, banks' freedom to allocate their loan funds among categories of borrowers is restricted by past commitments. Business lending, for example, is sometimes subject to lines of credit negotiated at earlier dates, while revolving credit agreements and other forms of loan arrangements also deprive bankers of some of their autonomy over the timing of loans. Other customer relationships, as well, tend to inhibit banks from making abrupt or large shifts from their existing pattern of loan allocation.

Shift toward business loans

Notwithstanding these limiting factors, heavy demand for bank credit from the burgeoning industrial and commercial sector brought about a marked shift in Western

Faster loan growth in West reflects faster economic gains



bank loan portfolios in the 1955-65 period. Banks normally give business loans a high priority for available loan funds because of such collateral benefits as compensating balances and service fees, even though the rate of return per se may be less favorable on business loans than on other types of loans.

During this period of strong business demand for credit, then, Western banks channelled an increasing proportion of their loanable funds into financing the plant-equipment expenditures and the larger inventories needed to meet the demands of a rapidly expanding economy. As a result, business loans at insured commercial banks in the nine Western states more than tripled in dollar volume from June 1955 to June 1965.

How did this expansion of business credit affect the composition of loan portfolios? In June 1955, commercial-industrial loans constituted 30 percent of Western bank loan portfolios; by June 1965, they made up 37 percent of the total. (The latter figure is adjusted to include some loans to nonbank financial institutions which prior to 1959 were classified in the commercial-industrial loan category.) In contrast, the business-loan share at banks in the rest of the nation increased only one percentage point, from 40 to 41 percent, over the same period.

The rise in the business-loan share at District banks was not constant over the decade, but in the two recessions of the decade, the secular trend was strong enough to offset most if not all of the normal cyclical weakness. The sharpest rise in the business-loan share occurred between mid-1955 and the 1957-58 recession. Then, except for seasonal increases each December, the proportion declined very slightly until the 1959 cyclical expansion. The 1960-61 recession again brought a leveling off (but no decline) which continued until the sharp upturn in 1965.

Shifting pattern?

Over the decade, then, Western banks allocated larger amounts of credit to business borrowers, both in absolute terms and relative to other types of borrowers. In 1965 and 1966, these banks continued to divert a higher percentage of their loan funds to business, but, for the first time in ten years, their rate of business-loan expansion did not exceed the national rate of increase — in fact, it fell substantially below the headlong pace which characterized developments elsewhere.

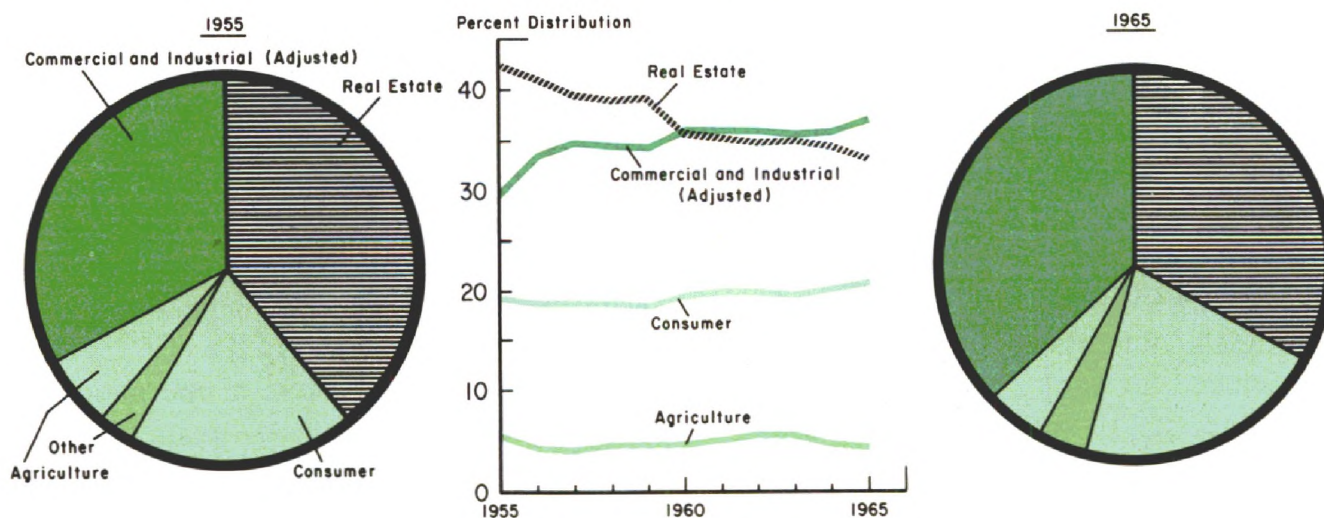
Does this signify a reversal of the pattern of faster business-loan growth in the West? The ratio of business to total loans is now more nearly comparable to the national ratio

— in contrast to the situation a decade ago, when the ratio was 10 percentage points lower. With some abatement in the rapid secular growth which characterized the past decade, the recent strong uptrend in the business share of total loan funds at Western banks may moderate somewhat. This could mean that business lending patterns of Western banks may reflect cyclical movements more closely than heretofore. It could also mean that their business lending patterns may more closely resemble that of their colleagues — allowing, of course, for some difference in the West's industrial and commercial mix.

Decline in mortgage share

By 1960, business loans were the largest single component of Western banks' portfolios — exceeding real-estate loans for the first time on record. Despite their declining share, however, mortgages have continued to account for a major part of total portfolios. Willingness to invest in mortgages — a relatively long-term asset — has gone hand-in-hand with active solicitation of personal savings deposits — ordinarily a relatively stable category of bank deposits. Thus, high percentages of real-estate loans and of pass-book savings have long been a hallmark of Western banking.

Commercial-industrial loans now dominate District-bank loan portfolios, while mortgage-loan share declines steadily over decade



In June 1955, real-estate loans made up 42 percent of the loan total at District insured commercial banks, in contrast to a 23 percent share at banks elsewhere. In the 1955-65 decade, Western banks doubled their mortgage holdings, but even this rate of gain did not keep pace with the rate of total loan expansion. As a consequence, by June 1965 real-estate loans accounted for just under one-third of Western banks' total loans. Meanwhile, the percentage for other banks remained relatively unchanged, at around 23 percent.

A number of factors contributed to the declining proportion of bank loan funds allo-

cated to mortgage credit—including a downturn in the building cycle in the last several years of the decade. A slowdown in population growth was accompanied, at least in the last several years, by problems of overbuilding in many Western areas. As a result, banks became more selective in their mortgage lending policies, especially in areas of overbuilding. During much of this period, moreover, interest-rate differentials became less favorable to residential mortgages—particularly FHA and VA mortgages, where adjustments in rate ceilings tended to lag the upward movement in money-market rates. Furthermore, banks faced intense competition

Cost of Business Borrowing

The Federal Reserve's quarterly business-loan survey was revised at the beginning of 1967, reflecting revisions in timing, in the sample of reporting banks, and in reporting procedures. After adjustment for data revisions, the survey showed the first decline in interest rates at Western banks in almost a year.

Business-loan data are now collected in the first fifteen days of the second (rather than the third) month of each quarter. This shift in timing keeps the survey from being influenced by the heavy borrowing associated with quarterly corporate-tax dates. The new survey sample includes 13 banks (and 25 banking offices) in Los Angeles, San Francisco, Seattle, and Portland—the same universe to be used in the national release for Western banks. (The old survey covered 19 Western banks.) The new survey collects data for three business-loan categories—short-term loans, revolving-credit loans (which in this District are mainly short-term), and long-term loans (those with over-one-year maturities).

For the first 15 days of February, the 13 reporting banks reported a 6.29-percent average rate on \$238 million of new short-term business loans, a 6.24-percent average rate on \$457 million of loans made under revolving credit agreements, and a 6.28-percent average rate on \$11 million of long-term loans. Despite the larger dollar volume of loans made under revolving credit agreements, there were only 1,473 such loans made in the February survey period, as against 2,304 short-term loans.

The combined rate on all reported loans with maturities of one year or less was 6.28 percent—about 6 basis points below last December's rate after adjustment for revisions in survey data. But only 42 percent of the dollar volume of such loans made in the first half of February carried the prime rate of $5\frac{3}{4}$ percent or less, whereas 53 percent of the December total bore the then-prevailing prime rate of 6 percent.

from savings and loan associations, which increasingly impinged upon the banks' share of the market for real-estate loans, and, in addition, attracted increasing amounts of individual savings funds.

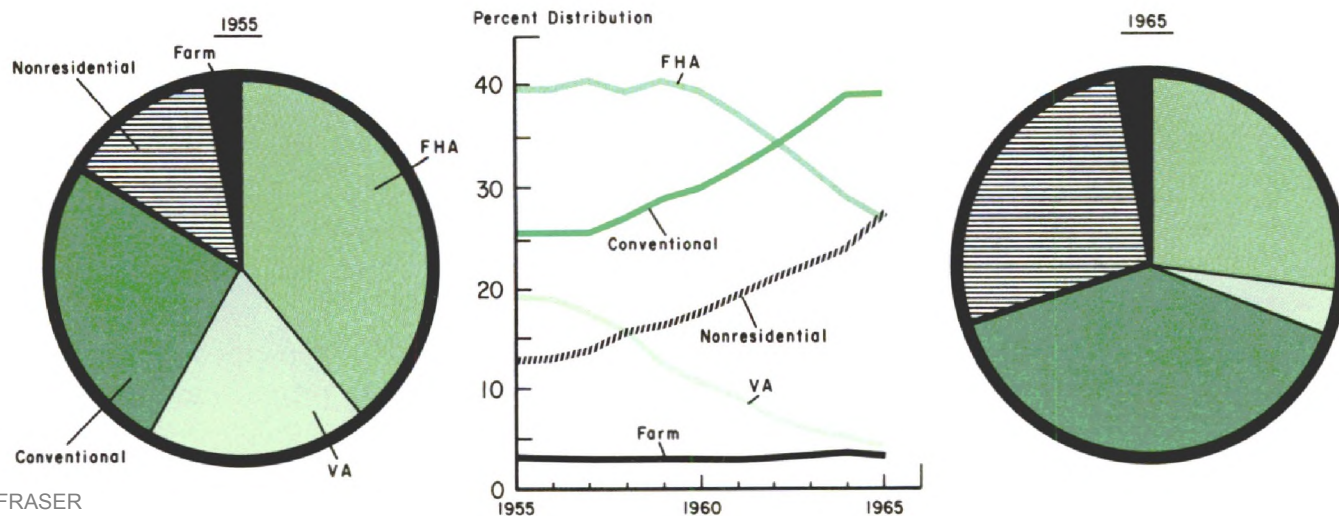
The flow of savings deposits was one of the crucial determinants of banks' mortgage activity during this period. The ratio of real-estate loans to savings has fluctuated within a rather narrow range of 52 to 58 percent, but has been drifting downward since mid-1964. Meanwhile, the ratio of real-estate loans to total time deposits has been declining even more rapidly, primarily as a reflection of the issuance of an increasing volume of large-denomination negotiable time certificates of deposit. These deposits are much more volatile than savings or smaller-denomination time certificates and, therefore, are not suitable for investment in long-term assets such as mortgages.

The flow of savings and time deposits, particularly savings, will continue to be a prime determinant in the mortgage-lending policies of Western banks. However, the shift toward more interest-sensitive deposits, especially large-denomination CD's, places restrictions on the amount of such deposits that banks can prudently use for long-term mortgage investment. Furthermore, the West's expand-

ed commercial-industrial sector should continue to require a large share of available loan funds. Thus, mortgages may not account for as large a share of total bank-loan portfolios as they did in earlier years — at least not unless the inward flow of migrants begins to accelerate again, and thereby creates a stronger underpinning for the regional housing industry.

Over the decade, major shifts also occurred within Western banks' mortgage portfolios — reflecting, in part, general trends in the national mortgage market. In June 1955, residential mortgages made up 84 percent of total real-estate loans, but 10 years later they accounted for only 70 percent of the total. And, within the residential sector, conventional mortgages increased rapidly in importance, from less than one-third of outstandings in 1955 to nearly 60 percent in 1965. Real-estate loans insured by the Federal Housing Administration declined from 50 percent to 38 percent of the total, and loans guaranteed by the Veterans Administration dropped from 23 percent to less than 6 percent. Rate ceilings on Federally guaranteed mortgages, which were not competitive with other loan rates during much of this period, plus some limitations on the availability of funds, led banks generally to favor higher-

Conventional residential mortgages account for almost half of mortgage portfolios, as FHA-VA share sharply declines



yielding conventional mortgages.

While residential mortgages lost some of their dominance, mortgages secured by commercial and industrial properties increased in importance. These mortgages, which comprised 13 percent of Western banks' real-estate loans in June 1955, represented 27 percent of the total in mid-1965 — only 2 percent below the proportion elsewhere in the nation. As in the case of business loans, this shift in mortgage lending reflected the strong secular expansion in Western industrial and commercial activities.

Stability in consumer share

Consumers nearly tripled the amount of their borrowing from Western banks over the decade but, nonetheless, their share of total loan funds increased only one percent — from 19 to 20 percent. Despite the slackened pace of Western population growth in the latter part of the decade, the upward trend in consumer loans was fairly steady during this ten-year span except for the two recession periods. The increase in consumer lending was substantially greater in the West than nationally, but the general pattern of consumer-loan distribution followed a similar course. Thus, factors affecting consumer borrowing behavior nationally appeared to be determinant in the West as well.

The shifts which developed in the consumer-credit market during this period were much less pronounced than the shifts which occurred in mortgage lending. Automobile financing declined in importance but continued to account for the largest proportion (45 percent) of consumer loans, while other instalment credit and single-payment loans increased their share of the total. The recent

proliferation of bank credit-card programs may lead to an accelerated expansion in the instalment-credit field. However, since automobile financing still accounts for the bulk of consumer loans, fluctuations in car sales will continue to be the pivotal factor in the rate of bank credit extended to the consumer sector.

Stability in farmers' share

In the last ten years, agricultural lending by Western banks increased at almost twice the national rate but, nevertheless, agricultural loans declined slightly as a percent of Western loan portfolios. The greatest variation occurred in bank holdings of loans guaranteed by the Commodity Credit Corporation. Part of this fluctuation was due to the one-day measurement as of Call dates, for maturities of these loans vary somewhat from year to year depending upon the timing of crop financing. Furthermore, banks frequently sell their CCC loans prior to maturity if the rate of return on these loans becomes non-competitive with yields on alternative types of investments. Other loans to farmers, after allowing for seasonal adjustments, remained fairly steady as a percent of total loans throughout this period.

The withdrawal of farm acreage due to the expansion of urban and suburban developments, which in the last decade nearly offset new acreage brought under irrigation, can be expected to continue in the future. Increased costs of farm operations and more intensified farming, however, may offset any reductions in farm borrowing due to any net withdrawal of land from agricultural production — at least in the near future.

—*Ruth Wilson*

Western Digest

Discount Rate Reduced to 4 Percent

The Board of Governors unanimously approved actions by directors of ten of the twelve Federal Reserve Banks — including the San Francisco Federal Reserve Bank — to reduce the discount rate from 4½ to 4 percent, effective April 7. Similar reductions were approved for the two remaining Banks in the following week . . . This is the first time since August 1960 that a reduction has been posted in the interest rate charged member banks on borrowings from their District Reserve Banks. After being maintained at 3 percent for almost three years, the rate had been raised in equal ½-percent steps in July 1963, November 1964, and December 1965. . . . The recent reduction, in the Board's words, "is in line with recent declines in market rates and in keeping with the Federal Reserve's policy objectives of assuring that the availability of credit is adequate to provide for orderly economic growth."

Sharp Expansion in Bank Credit

In March total credit at large commercial banks in the Twelfth District expanded \$788 million, as loans adjusted increased \$43 million and security holdings rose \$745 million. In the comparable period last year these banks increased their loans \$120 million and reduced their securities by \$268 million. . . . The \$94-million increase in business loans in March was largely due to borrowing to meet mid-month corporate tax payments. District banks also were heavy lenders to securities dealers during the month. On the other hand, mortgage loans and consumer instalment loans both declined, as they have in other recent months.

Softness in Industrial Activity

Severe weather in the Midwest and Northeast adversely affected the demand for lumber and plywood in the late-winter period, so that wholesalers were forced to make sharp price concessions to keep stocks moving. By mid-March, prices for key Douglas fir and plywood items were about \$12 per thousand board (or square) feet below their exceptionally high levels of a year ago. . . . The copper shortage showed further signs of easing in March, as a result of softening industrial and military demand. The dealer price for refined copper dropped from 55 to 52 cents a pound by late-March, and wire-scrap quotations fell below the producer price for the first time in the last several years. . . . The February decline in Western steel production extended into the following month. During the first three weeks of March, production fell 7 percent below the year-ago output figure.