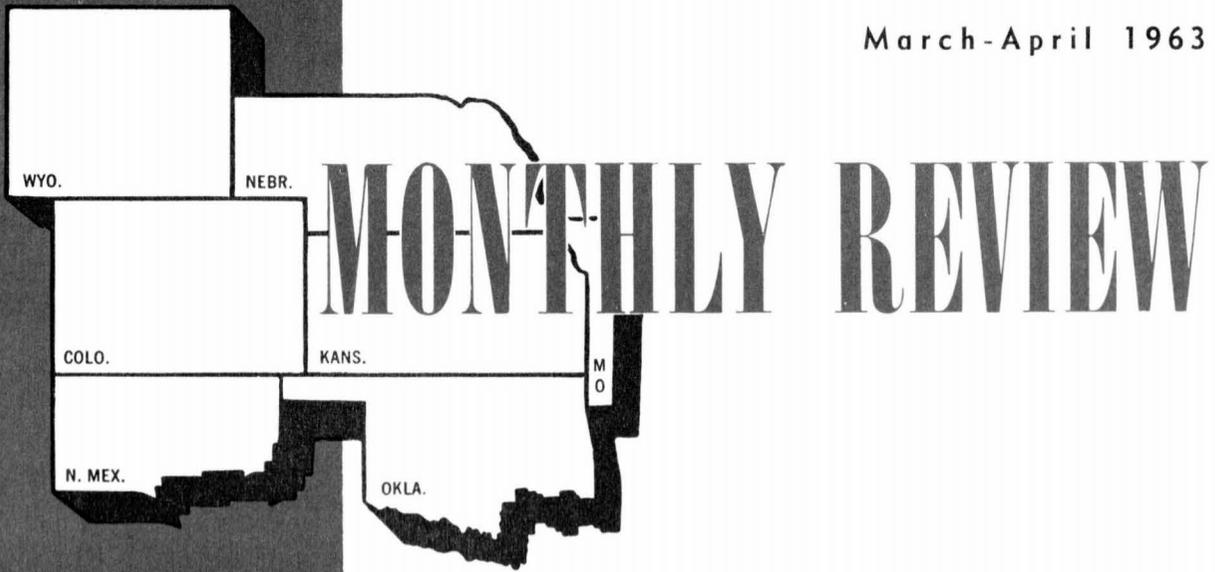


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Developing Foreign Markets For Farm Products

Through Promotional Activities

THE PRODUCTIVE capacity of farms in the United States is one of the marvels of the century. Abundant supplies of agricultural products are both a blessing and a problem. Surpluses are costly to store and tend to depress prices below levels tolerable to farmers.

Solutions to the problem of overproduction may take one of two forms—reducing the supply of farm products by removing productive resources from agriculture or increasing domestic or foreign demand for agricultural products—or a combination of the two. Efforts have been directed toward each of these solutions. This article will discuss several actions taken to increase foreign demand—particularly “market development,” a program designed to increase dollar sales of U. S. agricultural products in foreign countries. A discussion of some of the promotional activities carried out under the program will be followed by a statement of their effectiveness.

In 1954, Congress passed the Agricultural Trade Development and Assistance Act — known variously as Public Law 480 and Food for Peace. Its purpose is “. . . to increase the

consumption of U. S. agricultural commodities in foreign countries, improve the foreign relations of the United States, and for other purposes.” Title I authorizes the sale of certain commodities for foreign currencies to friendly countries that are short on dollars. Titles II and III of the Act authorize the President to negotiate and carry out agreements with friendly countries to use U. S. farm products for disaster and famine relief, voluntary aid programs, and certain types of barter transactions. Title IV, subsequently added, provides for sales of agricultural commodities on a long-term, dollar-credit basis.

The “soft currency” sales, donations, and barter transactions of Public Law 480 have helped reduce surpluses, but their direct effect in increasing dollar sales of U. S. farm products is questionable. However, a program authorized and carried out under Section 104(a) of Title I probably *is* helping to build dollar markets. A portion of the funds generated by Title I sales—recently established at no less than 5 per cent—is to be available, “. . . to develop new markets abroad for U. S. agricultural commodities on a mutually benefiting basis.” The promotional and educational activities undertaken have the twofold objective of developing solid dollar markets for U. S. farm products and improving the welfare of the people in the country involved.

MARKET DEVELOPMENT ACTIVITIES

The greatest emphasis on market development has been in Japan, West Germany, and Italy, although activities have been carried out on a smaller scale in many other countries. Activities exist for a number of commodities: wheat, cotton, soybeans, tobacco, feed grains, poultry, hides and skins, tallow, and others.

The agency responsible is the U. S. Department of Agriculture, which approves projects, writes the project statements, approves budgets, and conducts other administrative tasks. However, the USDA is not usually the action agency.

Active participation of U. S. farm producer groups is encouraged. For example, Wheat Associates, U.S.A., Inc., representing Western wheat producers, and the Great Plains Wheat Market Development Association, cooperate by contributing personnel, supplies, and money. So do the American Soybean Association, the Cotton Council, National Renderers' Association, Tobacco Associates, Inc., and several other associations representing producers.

The cooperation of processors of agricultural products in the foreign countries is also solicited. These "third-party" cooperators contribute money as well as advice based on years of experience in their respective fields. Examples of third-party cooperators are the All-Japan Cotton Spinners' Association, Japan Monopoly Corporation (tobacco), National Association of Livestock Feed Products in Italy, and the German Oilmillers Association.

Market development activities are organized on a commodity basis in each participating country, with the three interests—the U. S. Department of Agriculture, U. S. producers, and foreign processors—cooperating. For some commodities, the action agency is simply a foreign office of the cooperating U. S. producer association. The wheat program activities in Japan, for instance, are directed from the Tokyo office of Wheat Associates, U.S.A., Inc.

A new organization has been established for other commodities, such as the Japanese-American Soybean Institute, to direct the promotional and educational activities. In all cases, the trade groups receive guidance and assistance from the office of the agricultural attache, the responsible person for the U. S. Government in the country concerned.

Of course, it is necessary to have the approval of the government of the foreign country before initiating activities. This seldom presents a problem, since the effects of activities are mutually beneficial.

Types of Activities

The types of market development activities vary among countries and among commodities, as illustrated in the following examples:

Food Grains. The wheat and soybean offices in Japan have cooperated with the Japan Nutrition Association in a unique approach to market development. In 1956, eight buses, custom made in Japan, were purchased and equipped with modern kitchen facilities. Each bus is manned by a driver and two trained nutritionists. Following preannounced schedules in rural villages, the facilities are used to teach the rudiments of nutrition and to demonstrate balanced meal preparation to Japanese housewives. At least one wheat and one soybean dish is included in each demonstration. The approach is educational rather than "hard sell" promotion, which appeals to Japanese homemakers. The activity is helping to improve dietary habits and to increase understanding of both wheat and soybean foods.

Cotton. The Cotton Council International was formed by the National Cotton Council of America to supervise cotton promotion in foreign countries, using many of the same kinds of techniques that the National Cotton Council has used in the United States for many years. The Cotton Council International is the U. S. cooperator in the market development program

in several countries. Third-party cooperators in some countries consist of Cotton Institutes which have been organized to serve as the action agencies.

Market development activities usually consist of a threefold program of market research, sales promotion, and public relations. In the initial stages, market research is usually a major portion of the market development program. For instance, the German Cotton Institute—the third-party cooperator in Germany—collects data and analyzes basic trends and relationships in the textile industry. Analyses include determination of market shares of various end uses, income-consumption relationships, and consumer preferences. Research reports then provide a basis for promotional activities.

Particularly in Japan and Italy, promotional activities have centered on fashion, emphasizing cotton fabrics. All the usual media are used—publications, leaflets, design contests, TV shows, pictures and press releases, and conferences. Activities are sometimes centered on “cotton weeks,” climaxed by the crowning of a national cotton queen chosen from among several city or district cotton queens. Other activities include sales training and seasonal *concours* to show new fabrics and product lines.

To complement sales promotion endeavors, public relations activities are conducted by the Cotton Institute staff of the particular country. These activities consist largely of supplying the textile industry with educational material, press service, and bulletins.

Feed Grains. The United States Feed Grains Council was incorporated in 1960 to coordinate and direct the efforts of feed grain producers and other associated business interests into unified market development. Initially, teams from other countries, with interests in animal nutrition and feed-grain merchandising, visited the United States, and American teams visited other countries to survey the problems

and possibilities of developing new markets. The next step was to conduct market research, market analysis, and sales promotion activities. More recent projects consist of livestock feeding demonstrations and production research to establish facts and to disseminate knowledge concerning livestock feeding.

Historically, Japan's comparatively limited experience with livestock feeding has been built around the use of byproducts, garbage, table scraps, and vegetables not used for human consumption. Since the quantities of these types of feeds are limited, they are becoming a smaller proportion of total feed requirements as livestock numbers increase. Feed grains, largely imported, are becoming more important, creating a need for knowledge of feeding. Personnel of the feed grains market development staff in Japan are attempting to supply this knowledge. These offices serve also as a source of technical information to feed manufacturers by disseminating information about U. S. feed grains.

Advertising. While the market development activities for most commodities are largely educational, for some commodities the approach is strictly advertising. This is particularly true of tobacco in Japan. Brand advertising rather than commodity advertising receives principal emphasis, with brands containing a percentage of U. S. tobacco leaf being promoted in the market development program.

Advertising of soap plays a part in the tallow program in Japan. To a large extent, though, soap is promoted on a commodity basis and the efforts are educational rather than strictly advertising.

Trade Fairs. The Foreign Agricultural Service of the U. S. Department of Agriculture sponsors U. S. participation in food and agricultural fairs in several major cities of the world, mostly in Europe and Japan. Various techniques are used to present U. S. farm products to current and potential foreign cus-

tomers. Commodities featured in a given fair are selected on the basis of their importance to U. S. agriculture and potential sales in the country concerned. Cooperating U. S. organizations are invited to send persons to a fair to represent an entire industry, such as cotton or soybeans, although a particular firm or special segment within the industry usually is not invited in an official capacity.

Accomplishments

How effective are the market development activities? This is a difficult question to answer. It would be naive to assume that all the changes in imports are directly associated with the existence of market development efforts in a cooperating country. Many other factors act to change a country's patterns of consumption and imports.

For instance, Japan, West Germany, and Italy have all enjoyed rapidly rising per capita incomes since World War II. Rising incomes are associated with increased consumption of certain commodities. Perhaps poultry, soybeans, and feed grains are in this category in most countries. For other commodities—say, wheat foods—per capita consumption may decline with a rise in income. This depends on the stage of development of the country and the level of per capita income. In countries with relatively high per capita incomes, diets tend to be upgraded as incomes rise by using more high-priced, high-protein foods and fewer wheat and other starchy foods. In low-income countries, consumption of wheat may increase with rising incomes because wheat foods are substituted for foods made from coarse grains or are substituted for traditional foods, such as rice, to add variety to the diet.

The changing price of a commodity may also affect consumption. Or if the price of a commodity rises relative to the price of a substitute product, more of the latter may be purchased at the expense of the former commodity.

Changes in the level of tariffs and quotas affect a country's consumption and imports. Tariff changes probably result in a shift in the price of the commodity to the consumer, resulting in altered consumption and imports. Changes in import quotas would, of course, directly affect imports and consumption of the commodity for which a quota existed. This raises a question about the feasibility of attempting to increase demand in a foreign country for a commodity for which import quotas exist. Market development activities may be justified if there is a chance that the pressure of the increased demand would cause officials to increase import quotas.

A country's farm policy is likely to affect consumption and imports of certain farm products. Self-sufficiency in food production is one of the goals of many countries. To this end, production is often encouraged with high price supports and other measures. To the extent that these policies have changed in a country during the period being considered, the demand for agricultural imports will have changed irrespective of a market development program.

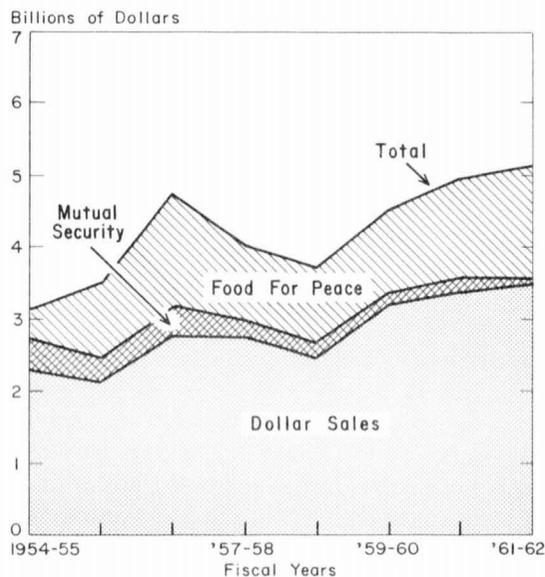
A country with a favorable balance of payments may be disposed toward a more liberal trade policy, whereas a country with a persistent deficit may adopt more protective measures. In either case, imports and consumption are likely to be affected.

The above points emphasize the difficulty of trying to evaluate the effectiveness of promotional and educational efforts to increase consumption and imports in a particular country. Changes in consumption and imports can stem from many factors. Nevertheless, several generalizations can be made as to apparent accomplishments of market development efforts.

In 1960, studies were made by three university teams, at the invitation of the U. S. Government, of the effectiveness of the mar-

AGRICULTURAL EXPORTS

United States



ket development programs in Japan, West Germany, and Italy. The three independent reports expressed similar conclusions. Each pointed out ways that the program might be strengthened, and each suggested areas of accomplishment.

Reported Benefits

Exports of U. S. agricultural products are probably at a higher level than they would have been in the absence of a market development program. Other accomplishments of the program are also significant—perhaps they will be as significant in the long run as export sales, both to the United States and to the cooperating countries. This is especially true when the relatively small cost of the market development program is considered. Less than 2 per cent of Title I receipts were used for market development from 1955 to June 1962.

The program has tended to create an interest in and a better understanding of foreign trade

among Americans who have been associated with the program. This is desirable. It also has had a favorable influence on the level of education of the people in the recipient countries—particularly with regard to health and nutrition.

Working relationships between personnel of the foreign and U. S. governments have benefited from market development projects. The projects place the agricultural attache and his staff in direct contact with their foreign counterparts. These relationships deepen into more than mere negotiating sessions. Person-to-person understanding is broadened. The exchanges of survey teams and the contacts among U. S. producers and traders and among foreign processors and traders have aided in a better understanding of each other's problems. With understanding, arbitration is easier.

New associations or trade groups have been formed, both in foreign countries and in the U. S., largely because of market development programs. These associations of business people center their activities on common problems.

Accomplishments of the market development program are measured in more ways than in mere physical quantities. While it is impossible to say just what quantities of agricultural products the United States would now be

U. S. EXPORTS OF SELECTED AGRICULTURAL COMMODITIES AS A PER CENT OF TOTAL PRODUCTION

1954-60 Average; years ended June 30, 1961, 1962

| Commodity | Per Cent of Production Exported | | |
|-----------------|---------------------------------|------|------|
| | Average 1954-60 | 1961 | 1962 |
| Wheat* | 36 | 49 | 58 |
| Rice | 43 | 56 | 54 |
| Tallow | 40 | 38 | 44 |
| Nonfat dry milk | 35 | 33 | 39 |
| Cotton | 34 | 49 | 34 |
| Soybeans† | 32 | 41 | 34 |
| Tobacco | 28 | 29 | 29 |

* Includes grain equivalent of flour.

† Includes bean equivalent of oil.

SOURCE: U. S. Department of Agriculture.

exporting if there were no formal market development program, the program is exerting a positive influence.

CONCLUSION

Whether largely because of the market development program or not, exports of U. S. farm products have increased in recent years (see chart). As an indication of their importance to U. S. agriculture, exports represented 15 per cent of total cash receipts from farm marketings in fiscal 1961-62. Sixty million acres, or one acre out of every five harvested, were devoted to production for export. Exports account for large proportions of the output of many individual agricultural commodities. For the fiscal year ended June 30, 1962, over half of the Nation's production of wheat and rice was exported; over one third of the tallow, nonfat dry milk, cotton, and soy-

beans; and nearly one third of the tobacco (see table). For most of the important commodities, these proportions have increased during the last year or two.

About 70 per cent of the \$5.1 billion of agricultural exports for fiscal 1961-62, or \$3.5 billion, represented sales for dollars. The other 30 per cent was exported under Food for Peace and the Mutual Security Act. Exports for dollars and exports under Government programs both have increased. The increase in total exports has tended to relieve the stress created by the productive capacity of U. S. agriculture. Added dollar sales abroad are significant in another way—through their positive contribution to the economy's balance of payments. To the extent that market development has contributed to increased dollar sales of agricultural products, it has also contributed to relieving the balance-of-payments deficit.



BANKING STRUCTURE AND REACTIONS TO MONETARY STRINGENCY OR EASE

DISCUSSIONS of monetary policy often convey the impression that banks respond to shifts in monetary tightness or ease, emanating from the central bank, in a rather simple mechanistic manner. Such an impression tends to mask the fact that banks' reactions to altered monetary conditions are complex phenomena conditioned by diverse environmental factors. The structure of banks' markets is one such factor that may have an important bearing on the reactions of banks to external forces.

In particular, certain attributes frequently ascribed to branch banking systems might be reflected in patterns of cyclical portfolio adjustment. For example, branch banking, in fostering the growth of large banks that operate over wide geographical areas, may disseminate the effects of monetary changes more uniformly and pervasively than unit banks. Enhanced mobility of loanable funds is frequently cited as a concomitant of branch banking. In addition, greater portfolio diversification and managerial specialization may permit a more efficient use of reserves by large branch systems. On the other hand, the Federal Reserve System, correspondent bank relationships, and various other institutional arrangements may integrate the banking system and impose a certain degree of uniformity in behavior that tends to mitigate differences stemming from the factors mentioned above.

If banks' reactions to altered monetary conditions are tempered by the structure of banking prevalent in an area, the ramifications can

be numerous and important. For example, consider the possibility that when the central bank effects a tighter monetary policy, credit availability is curtailed more or less severely in a unit banking area than in a comparable branch banking environment. Such sectoral differences may have considerable relevance to problems of regional growth and stabilization.

While an enumeration of factors affecting bank behavior has a place in this discussion, ultimately the question remains to be answered empirically. As is the case with so many economic problems, the empirical analysis proves to be highly complex. This, in part, may explain the dearth of research in this area. However, the potential importance of this problem for public policy warrants an attempt at its solution. This article analyzes a small body of data in an attempt to make a modest step in this direction.

A comparison of the cyclical fluctuations of various components of commercial banks' asset portfolios under varied structural conditions serves as the evidence from which differences in behavior, if any, will be inferred. Alterations of portfolio accounts will be interpreted as reactions to changes in monetary stringency.

It should be noted that observed differences in portfolio adjustments may stem from a variety of causes. There may be differences in the types of pressure brought to bear on the various banks when the central bank initiates a change in policy. For example, unit banks,

being predominantly small and locally oriented, may not find it profitable to trade extensively in the Government securities market, or to participate at all in the Federal funds market. Moreover, the occasional need for unit banks to supplement their reserves may be satisfied by their correspondents, irrespective of normal changes in the degree of monetary stringency enforced by the central bank. Such factors may, to some extent, insulate unit banks from the vicissitudes of monetary stringency and may be reflected in differences in observed portfolio adjustment. However, these considerations would not indicate that branch banks react differently than unit banks when confronted with the same pressures. In fact, unit and branch banks may, in any given instance, be reacting to pressures of varying severity. On the other hand, the pressures sustained by the various banks as a result of changed monetary conditions may be essentially the same. If this is the case, then differences in portfolio adjustment may be observed because the structure of banking affects the way in which banks react to a given type of pressure.

PROCEDURE

Structure

Banking systems of 45 states and the District of Columbia were classified into three groups—statewide branch banking permitted, limited area branch banking prevalent, and unit banking prevalent.¹ The traditions which most pervasively influence the structure of state banking systems appear to be largely regional in origin. This suggests that the behavior of aggregated structure groupings of the

¹New York, California, and Illinois were deleted from the sample because there was evidence to suggest that for various reasons their behavior may be somewhat atypical. Moreover, their size greatly influenced the aggregates. Hawaii and Alaska were deleted because data were not readily available for the entire period studied.

Table 1.
**THE STRUCTURE
OF STATE BANKING SYSTEMS**

| Statewide Branch Banking Permitted | Limited Area Branch Banking Prevalent | Unit Banking Prevalent* |
|---------------------------------------|--|----------------------------|
| NEW ENGLAND | NEW ENGLAND | NEW ENGLAND |
| Maine | Massachusetts | New Hampshire |
| Vermont | MIDEAST | GREAT LAKES |
| Rhode Island | New York | Illinois |
| Connecticut | New Jersey | PLAINS |
| MIDEAST | Pennsylvania | Minnesota |
| Delaware | Dist. of Columbia | Iowa |
| Maryland | GREAT LAKES | Missouri |
| SOUTHEAST | Michigan | North Dakota |
| North Carolina | Ohio | Nebraska |
| South Carolina | Indiana | Kansas |
| Louisiana | Wisconsin | SOUTHEAST |
| SOUTHWEST | PLAINS | West Virginia |
| Arizona | South Dakota | Florida |
| ROCKY MOUNTAIN | SOUTHEAST | Arkansas |
| Idaho | Virginia | SOUTHWEST |
| Utah | Kentucky | Oklahoma |
| FAR WEST | Tennessee | Texas |
| Washington | Georgia | ROCKY MOUNTAIN |
| Oregon | Alabama | Montana |
| Nevada | Mississippi | Wyoming |
| California | SOUTHWEST | Colorado |
| | New Mexico | |

*Some states among this group do have a small number of branches that were in existence prior to the passage of prohibitory legislation or are limited function offices.

SOURCE: 98th Report of the Comptroller of the Currency, 1960; Annual Report of the F. D. I. C., 1960.

kind made in the table may be subject to complex regional influences which may obscure effects attributable to banking structure.

Variables

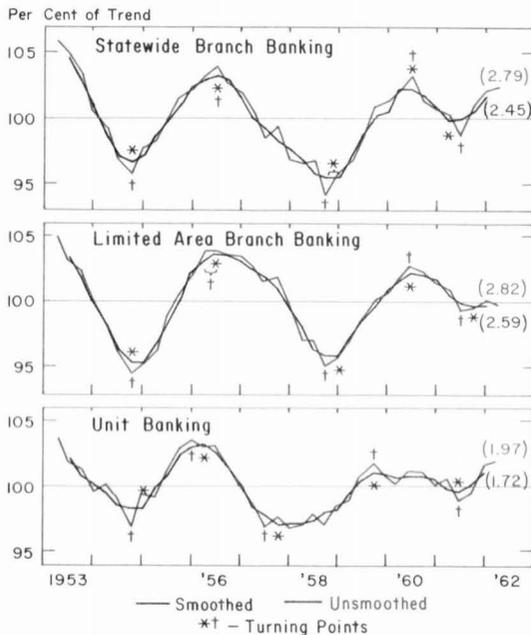
Differences in the behavior of the three groups were studied by comparing the cyclical fluctuations of four asset variables: loans, cash, U. S. Government securities, and loans and securities combined. While a number of variables might have been used, these four were selected because of their obvious sensitivity to changes in monetary stringency.

The period covered was from April 20, 1953, through March 26, 1962. There were 37 quarterly observations of each variable, taken from Federal Reserve member bank condition reports, for each structure.

Adjustments of Data

In order to permit comparisons of the cyclical component of fluctuations in the various

Chart 1.
LOANS



NOTE: Numbers in brackets represent standard deviations measured in per cent.

series, it was necessary to eliminate extraneous influences. Toward this end, the following adjustments were applied to each of the 12 series:

(1) The trend factor in each series was isolated by linear least squares regression and then the raw data were expressed in terms of ratios to trend values.

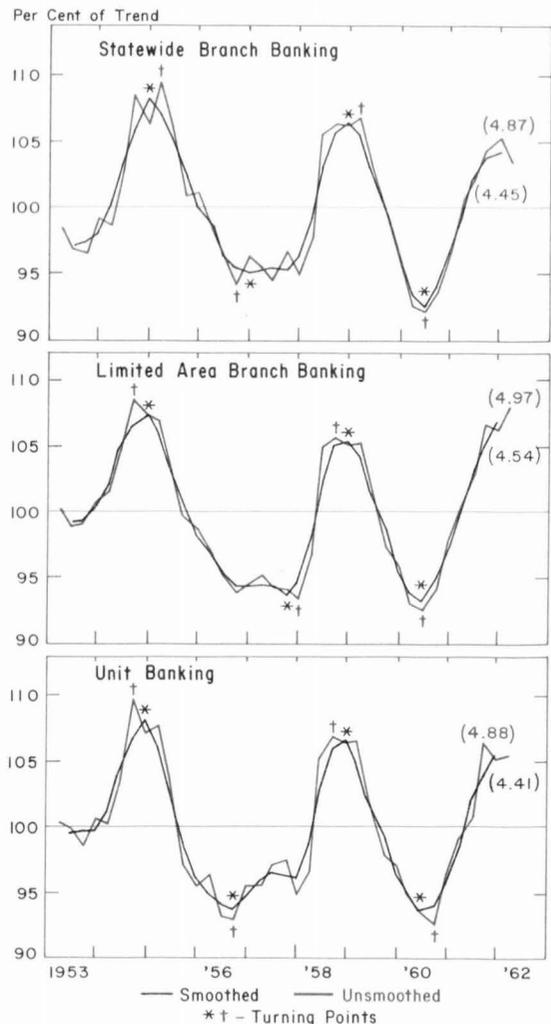
(2) The series were adjusted to eliminate purely seasonal fluctuations.²

(3) In some instances the series corrected for trend and seasonal variation displayed what

²The Census II method of seasonal adjustment was employed. See J. Shiskin and H. Eisenpress, *Seasonal Adjustment by Electronic Computer Methods*, National Bureau of Economic Research, Technical Paper 12, 1957. In applying the seasonal adjustment process, it is generally assumed that observations are taken at corresponding dates in each year. Condition reports are not submitted on the same dates each year. However, this did not appear to constitute a serious problem. See accompanying charts.

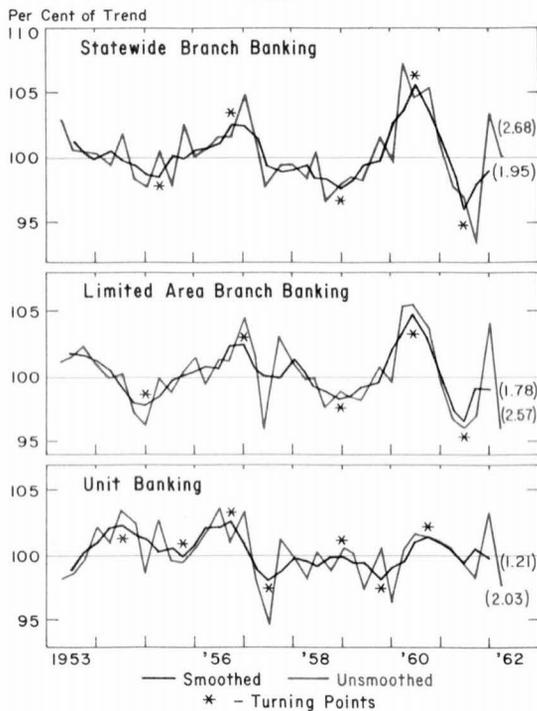
appeared to be marked erratic fluctuations. Three-quarter moving averages smoothed out a large part of the erratic movements, but this presented the danger of suppressing fluctuations relevant to the analysis. For that reason, both the smoothed and unsmoothed versions of the time series were analyzed. Since the analysis of the smoothed and unsmoothed

Chart 2.
U. S. GOVERNMENT SECURITIES



NOTE: Numbers in brackets represent standard deviations measured in per cent.

Chart 3.
CASH



NOTE: Numbers in brackets represent standard deviations measured in per cent.

series indicated the same conclusions, only the former set of results are presented. Charts 1, 2, and 3 are presented to illustrate the results of the various processes of adjustment. These are the series on which the following analysis is based.

TESTS

Turning Points

One way in which the structure of banking might affect bank behavior is in the speed of reaction to changed conditions. It would seem reasonable to expect such differences to be reflected in the timing of cyclical turning points of the variables—loans, cash, U. S. Government securities, and loans plus securities. For example, if unit banks were slower to

react to tightened monetary conditions, peaks or troughs presumably would occur later than corresponding turning points for the statewide branch banking or limited area branch banking series. Unfortunately, the series span too short a period—two cycles in most cases—to permit a reasonable test for the existence of systematic leads or lags. However, a test was made in which the ratios of simultaneously timed turning points to total turning points were compared.

The results of this test are shown in Table 2. The loan and cash variables prove to be especially interesting. In the case of loans, five turning points are observed. The statewide branch banking and the limited area branch banking series achieved four of the five turning points simultaneously, but the timing of the unit banking series was completely different from the other two.

In the case of the cash variable, the statewide branch banking and limited area branch banking series display two peaks and three troughs. However, the unit banking series rather clearly displays four peaks and at least three troughs, which precludes a comparison of corresponding turning points. Suffice it to say that the unit banking cash series displays a decidedly different timing of turning points than the two branch banking cash series.

The remaining two variables—earning assets and U. S. Government securities—do not suggest clear-cut differences among structures.

Table 2.
COMPARISON OF TURNING POINTS

| | Number of Times Statewide and Limited Area Branch Banking | Number of Times Statewide Branch and Unit Banking | Number of Times Limited Area Branch and Unit Banking |
|------------------------|---|---|--|
| Loans & Securities | 1 of 5 | 2 of 5 | 2 of 5 |
| Loans | 4 of 5 | 0 of 5 | 0 of 5 |
| Cash | 3 of 5* | N.C. | N.C. |
| U. S. Govt. Securities | 3 of 4 | 3 of 4 | 3 of 4 |

N.C. — not comparable.

*The two remaining pairs of turning points were separated by one quarter.

Table 3.
FIRST DIFFERENCES

| | Statewide and Limited Area Branch Banking | Statewide Branch and Unit Banking | Limited Area Branch and Unit Banking |
|------------------------|---|-----------------------------------|--------------------------------------|
| Loans and Securities | VS | VS | VS |
| Loans | VS | S | S |
| Cash | VS | 0 | 0 |
| U. S. Govt. Securities | VS | VS | VS |

NOTE: VS — indicates a very significant degree of association between series.

S — indicates a significant degree of association between series.

0 — indicates no significant degree of association between series.

First Differences

Differences in patterns of adjustment may be shown in the direction of movement of the series. Using the smoothed series for each banking structure grouping, quarter-to-quarter changes—referred to as first differences—were obtained. Only the plus or minus signs of the first differences were recorded. The series were then paired—statewide branch banking and limited area branch banking, statewide branch banking and unit banking, limited area branch banking and unit banking—and the number of matched signs was counted for each pairing of series. The ratio of matched quarters to total quarters indicates the proportion of the time that any two series move in the same direction and can be considered a measure of the similarity of patterns of fluctuations. If no systematic relationship exists between a given pair of series, it would be expected that the signs would match approximately half of the time. A statistical test was made to determine whether the number of matched signs observed for each pair of series could reasonably be expected on the basis of chance alone.³ The results of this test are presented in Table 3. Again, it is found that the loans and cash variables suggest differences among banking structures while the

³The "t" test, employing the normal approximation to the binomial distribution, was used.

earning assets and U. S. securities variables provide no such evidence. While a significant degree of relationship between the unit banking loan series and the two branch banking loan series is found, these relationships are more tentative than that found between the statewide branch banking and limited area branch banking loan series.⁴ In the case of the cash variable, the differences are more dramatic. There appears to be no significant relationship between the unit banking and branch banking series, while the relationship between the two branch banking series is very significant.

Amplitude

So far, the various series have been compared in terms of the timing of peaks and troughs and in terms of the direction of movement of quarter-to-quarter changes. A third way in which the series may be compared is in terms of the volatility or amplitude of movements. To gauge amplitude or volatility, some measure of dispersion must be employed. Frequently used measures of dispersion include the range, average deviation, and standard deviation. Because of certain desirable statistical properties, the last of these measures was selected. The standard deviations for the 12 series were compared by using a technique for testing the statistical significance of differences between pairs of standard deviations.⁵

⁴A difference is referred to as "significant" when the hypothesis being tested is rejected at the 5 per cent level of significance and "very significant" when it is rejected at the 1 per cent level.

⁵The "F" distribution was employed for testing differences between variance estimates. Both the "F" and "t" tests assume the data are random samples drawn from normally distributed populations. It is believed that the bias introduced as a result of failure to meet this requirement would tend to indicate a relationship between two series in the first difference test and to obscure a difference between series in the case of the amplitude test.

Table 4.
AMPLITUDE

| | Statewide and Limited Area Branch Banking | Statewide Branch and Unit Banking | Limited Area Branch and Unit Banking |
|------------------------|---|-----------------------------------|--------------------------------------|
| Loans and Securities | 0 | 0 | LABB < UB |
| Loans | 0 | UB < SWBB | UB < LABB |
| Cash | 0 | UB < SWBB | UB < LABB |
| U. S. Govt. Securities | 0 | 0 | 0 |

NOTE: 0 — indicates no significant difference in amplitude.
A < B — indicates A is significantly less than B in amplitude.

The results are presented in Table 4. Once again the loans and cash variables prove most revealing. In the case of loans, the unit banking series displays significantly less amplitude than either of the branch banking series. In contrast, there appears to be no significant difference in amplitude between the statewide branch banking and limited area branch banking series. The cash series indicates similar conclusions.

Neither the earning assets nor the U. S. securities series provide sufficient grounds for distinguishing among structures. In the case of earning assets, the unit banking series is significantly more volatile than the limited area branch banking series, but neither is significantly different from the statewide branch banking series in amplitude. Hence, the results are considered ambiguous.

CONCLUSIONS

This study has attempted to present a small body of evidence that might be useful in determining whether the effects of monetary stringency or ease may be tempered by the structure of banking in any given area.

In order to attribute differences in portfolio behavior to structural characteristics of the market, a number of assumptions must be made. Most important, perhaps, are these: (1) conditions to which banks are responding are either uniform for all state banking systems, or, such differences as do exist can

be attributed to structural factors; (2) average size of banks is not independent of structure; and (3) regional influences do not affect the cyclical variation of the asset accounts of the grouped state banking systems. No attempt was made to subject the validity of these assumptions to rigorous empirical tests. It might be added, however, that the first assumption would be extremely difficult to evaluate empirically and may very well be the most precarious of the group. On the other hand, there is evidence to suggest that the assumption regarding the independence of bank size and structure can be corroborated with little difficulty. In addition, any distortions introduced as a result of regional influences, particularly differences in patterns of demand, are believed to be of minor importance.

Given these assumptions, the findings lend support to the argument that banking structure is a factor affecting the response of the banking system to changes in monetary stringency. All three tests of the loans and cash variables indicate a clear distinction in the pattern of cyclical adjustment between branch and unit banking systems. It should be added, however, that analysis of the U. S. Government securities and loans plus securities variables revealed no evidence of such differences. The U. S. Government securities series indicates a high degree of similarity among banking structures while the results of tests on the earning assets series were somewhat mixed.

While systematic leads or lags were not in evidence, their existence cannot be ruled out. The number of cycles observed was small and relatively little effort was devoted to analyzing the nature of the differences in response observed. Indeed, the analysis had the limited objective of identifying differences in cyclical adjustments of various portfolio accounts associated with differences in the structure of banking. Hence interpretation of the differences observed must await further research.

The one point that emerges rather clearly from this investigation is that there are grounds for questioning the assumption that the impact of monetary stringency or ease permeates the economy without selective effects.

While others have discovered this point by studying particular industries such as housing construction, or small as compared with large borrowers, this article has focused on the structure of banking as a factor conditioning the impact of monetary stringency. The findings suggest that the structure of banking

prevalent in an area may be instrumental in tempering the impact of monetary policy, but the prescriptive implications of the findings are quite limited. Certainly, this aspect of the structure of banking deserves the recognition and evaluation of regulatory authorities. However, an intelligent evaluation of this problem requires a more complete understanding than is now possessed. Hence, the present findings point to the need for a more intensive effort to study the relationship between the structure of banking and the effects of monetary policy.



BANKING IN THE TENTH DISTRICT

| District and States | Loans | | | | Deposits | | | | Loans | | | | Deposits | | | | Loans | | | | Deposits | | | |
|---------------------|----------------------------------|-----------|----------------------|-----------|---------------------------|-----------|----------------------|-----------|----------------------------------|-----------|----------------------|-----------|---------------------------|-----------|----------------------|-----------|----------------------------------|-----------|----------------------|-----------|---------------------------|-----------|----------------------|-----------|
| | Reserve City Member Banks | | Country Member Banks | | Reserve City Member Banks | | Country Member Banks | | Reserve City Member Banks | | Country Member Banks | | Reserve City Member Banks | | Country Member Banks | | Reserve City Member Banks | | Country Member Banks | | Reserve City Member Banks | | Country Member Banks | |
| | Feb. 1963 Percentage Change From | | | | | | | | Jan. 1963 Percentage Change From | | | | | | | | Dec. 1962 Percentage Change From | | | | | | | |
| | Jan. 1963 | Feb. 1962 | Jan. 1963 | Feb. 1962 | Jan. 1963 | Feb. 1962 | Jan. 1963 | Feb. 1962 | Dec. 1962 | Jan. 1962 | Dec. 1962 | Jan. 1962 | Dec. 1962 | Jan. 1962 | Dec. 1962 | Jan. 1962 | Dec. 1962 | Nov. 1962 | Dec. 1961 | Nov. 1962 | Dec. 1961 | Nov. 1962 | Dec. 1961 | Nov. 1962 |
| Tenth F. R. Dist. | # | +10 | +1 | +15 | +2 | +5 | # | +9 | -1 | +8 | # | +15 | -4 | +2 | # | +8 | +3 | +6 | +4 | +14 | +2 | -1 | +2 | +7 |
| Colorado | +2 | +12 | +3 | +20 | +2 | +3 | +2 | +12 | -1 | +9 | # | +19 | -2 | +1 | -2 | +10 | # | +8 | +1 | +19 | -1 | -8 | -1 | +10 |
| Kansas | ** | ** | +1 | +16 | ** | ** | -1 | +7 | ** | ** | -2 | +14 | ** | ** | -1 | +7 | ** | ** | +6 | +12 | ** | ** | +4 | +7 |
| Missouri* | -2 | +2 | +1 | +14 | +1 | +2 | -2 | +9 | -5 | +3 | # | +13 | -8 | -1 | -2 | +6 | +4 | +4 | +3 | +13 | +7 | # | +3 | +6 |
| Nebraska | +3 | +19 | # | +14 | +6 | +7 | -1 | +9 | # | +12 | +1 | +14 | -4 | +1 | +1 | +7 | +1 | +13 | +4 | +15 | -1 | -1 | # | +7 |
| New Mexico* | ** | ** | -3 | +13 | ** | ** | +2 | +10 | ** | ** | +2 | +18 | ** | ** | +1 | +6 | ** | ** | # | +17 | ** | ** | # | +6 |
| Oklahoma* | -1 | +11 | +1 | +13 | +2 | +8 | # | +10 | +1 | +9 | +1 | +15 | -2 | +7 | +2 | +11 | +4 | +3 | +7 | +14 | +2 | +4 | +3 | +8 |
| Wyoming | ** | ** | +1 | +11 | ** | ** | -1 | +6 | ** | ** | +2 | +12 | ** | ** | -2 | +6 | ** | ** | +2 | +10 | ** | ** | -1 | +4 |

*Tenth District portion only.
#Less than 0.5 per cent.

**No reserve cities in this state.

PRICE INDEXES, UNITED STATES

| Index | Feb. 1963 | Jan. 1963 | Dec. 1962 | Nov. 1962 | Feb. 1962 | Jan. 1962 | Dec. 1961 |
|---|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Consumer Price Index (1957-59=100)..... | 106.1 | 106.0 | 105.8 | 106.0 | 104.8 | 104.5 | 104.5 |
| Wholesale Price Index (1957-59=100)..... | 100.2 | 100.5 | 100.4 | 100.7 | 100.7 | 100.8 | 100.4 |
| Prices Received by Farmers (1910-14=100)..... | 242 | 244 | 242 | 245 | 243 | 242 | 240 |
| Prices Paid by Farmers (1910-14=100)..... | 311 | 311 | 309 | 307 | 305 | 304 | 302 |

TENTH DISTRICT BUSINESS INDICATORS

| District and Principal Metropolitan Areas | Value of Check Payments | | | | | Value of Department Store Sales | | | | |
|---|--------------------------------------|-----------|---------------|-----------|-----------|---------------------------------|-----------|---------------|-----------|-----------|
| | Percentage change from previous year | | | | | | | | | |
| | Feb. 1963 | Jan. 1963 | Two Mos. 1963 | Dec. 1962 | Year 1962 | Feb. 1963 | Jan. 1963 | Two Mos. 1963 | Dec. 1962 | Year 1962 |
| Tenth Federal Reserve District..... | +5 | +3 | +4 | +4 | +6 | +3 | +4 | +3 | +6 | +3 |
| Denver..... | +7 | -1 | +2 | -8 | +6 | +3 | 0 | +1 | +3 | +1 |
| Wichita..... | 0 | -1 | -1 | +6 | +4 | -2 | +8 | +3 | +5 | +1 |
| Kansas City..... | +5 | +4 | +4 | +7 | +6 | +3 | +9 | +6 | +12 | +8 |
| Omaha..... | +5 | +14 | +10 | +4 | +8 | +10 | -1 | +4 | +5 | +2 |
| Oklahoma City..... | +8 | +9 | +8 | 0 | +9 | -3 | +9 | +3 | +5 | +5 |
| Tulsa..... | -4 | -3 | -3 | +3 | +4 | 0 | +10 | +5 | +5 | +4 |