

RESEARCH DEPARTMENT
WORKING PAPER

"REGIONAL BUSINESS ANALYSIS"



research
department
federal reserve bank of minneapolis

"REGIONAL BUSINESS ANALYSIS"

By

David S. Dahl

A Speech Delivered to the Marketing
Research Seminar for Gas Utilities

Sponsored by
The American Gas Association

October 2, 1969

Regional Business Analysis

It is a pleasure for me to be here this morning to talk about regional business analysis. Because the meaning and interpretation of this rather broad topic can vary with one's particular interest or concern, my remarks will be primarily restricted to our efforts at the Federal Reserve Bank of Minneapolis to analyze business conditions in the Ninth Federal Reserve District. I hope to accomplish this by answering two questions: 1) Why is the Federal Reserve Bank of Minneapolis interested in regional business analysis? 2) How does the Federal Reserve Bank of Minneapolis analyze regional business conditions? In addition, I would like to comment on another program underway in our district to provide regional economic data. Then, in conclusion, I will make some remarks on how the bank's efforts in regional business analysis can be of benefit to you in market research for gas utilities and how we can benefit from your efforts.

Why is the Federal Reserve Bank of Minneapolis interested in regional business analysis? The United States is unique in having a decentralized central banking system, and one of our bank's responsibilities as a regional central bank is to bring a regional perspective to the formulation of national monetary policy. Although monetary policy is focused on national economic goals, the regional analysis of business conditions is important, especially if certain economic phenomena in a federal reserve district have a special relationship to the national economy. For example, in the Ninth district, which contains the nation's

spring wheat raising area as well as a significant part of its cattle raising and farming potential, what happens to district agriculture is important for the entire national economy.

Our bank is very much involved in this process of bringing regional economic conditions to bear on decisions about national monetary policy. This function is primarily accomplished through the bank president's participation in the formulation of monetary policy as a member of the Federal Open Market Committee of the Federal Reserve System. This committee, which meets every three to four weeks, is the most important policymaking group in the Federal Reserve System. Prior to our president's departure for these meetings, our Research Department prepares an analysis of current economic conditions in our district. Memos are prepared on district agricultural, business, construction and financial conditions. Much of my talk will be concerned with our resources and efforts to prepare the district business conditions memo.

Because a healthy economic environment is a necessary prerequisite if our commercial banking system is to prosper, the regional federal reserve banks must be aware of the regional economic needs of their district. This too requires regional business analysis. For instance, the economic development of the Ninth Federal Reserve District, an area that includes Minnesota, Montana, North Dakota and South Dakota plus the Upper Peninsula of Michigan and the twenty-six northwestern counties of Wisconsin, has been tied in the most part to the natural resource industries -- agriculture, forestry, and mining. Resource depletions and productivity changes in these industries have played a dominant role in changing the structure of the Ninth district's economy.

For example, since 1955 district farm employment has dropped 38 percent, due primarily to productivity advances in agriculture. Similar figures also can be cited for district mining and forestry. This has set up a process of transition in the district of shifting from resource-tied activities to other activities. The task confronting the district has been to create employment opportunities to offset declines in the district natural-resource-tied industries. These changes have been going on since World War II and are expected to continue for many more years.

As a consequence of this transition, new employment growth in the district must do double duty. Employment declines in the natural-resource-tied industries must be offset before total employment can increase. So far this decade, employment has increased 15 percent nationally, but it has only increased 9 percent in the district. This transition has also retarded the district's population growth as people have left the district to seek new job opportunities. In the nation population has increased by 11 percent since 1960, but in the district it has only increased 4 percent.

Although the national resource based industries will continue to provide impetus to the district's economic growth, the economic structure of the district is changing and becoming less dependent upon them. Farm employment accounted for 23 percent of district employment in 1960, but today it accounts for 15 percent of district employment. Manufacturing employment, on the other hand, now accounts for 15 percent of district employment whereas in 1960 it accounted for only 13 percent. Thus, the district is becoming more industrialized. This is especially true in the Twin Cities metropolitan area, which is one of the nation's

fastest growing metropolitan areas. Approximately 70 percent of the district's growth in manufacturing jobs since 1960 has taken place in the Twin Cities metropolitan area. Service and trade employment also have increased their relative importance in the district. Government employment's share increased from 12 percent in 1960 to 16 percent and service employment's share has jumped from 9 percent to 12 percent since 1960. The district's other major economic sectors have either held their own or decreased.

Because these changes affect the banking and credit requirements of our district, the Federal Reserve Bank of Minneapolis must be aware of them. Thus, the Federal Reserve Bank of Minneapolis sponsors regional economic research and is interested in the work others are doing along these lines. This analysis is also important in your industry, for your markets grow in proportion to the economic development of the area you serve.

This brings me to my second question. How do we analyze regional conditions at the Federal Reserve Bank of Minneapolis? My remarks will be primarily restricted to our analysis of current economic conditions in the Ninth district. In analyzing district business conditions, our basic objective is to describe the current status of the district's economy and in particular to indicate any anticipated changes. Before discussing our procedures, it is necessary to make several comments on the nature of a regional economy.

The important analytical feature that distinguishes our district's economy from the national economy is the openness of the district's economy versus the closedness of the national economy. The United States

economy for the most part is a self contained economic unit, but the district's economy is a component of the national economy. Therefore, the major economic influences affecting the district are national in scope. The district by itself has a small effect upon the rates of technological change in its industries, the levels of national demand for its products, and the prices at which its products can be sold. Levels of unemployment and income in the district generally follow national movements and the district's economic fortunes are closely tied to national economic conditions. For instance, the demand for goods produced by our large manufacturing plants is largely determined by buyers located throughout the United States.

I am certain that analytical models are available or can be designed to analyze a regional economy. However, their implementation is constrained by the fact that it is very difficult to measure economic phenomena at a regional level. Consequently, a paucity of data exists for a regional economy in the United States compared to the national economy. The operations of large national corporations and the Federal government cover the entire United States, and it is very difficult to allocate their operations to various regions of the country. How do you, for example, distribute the corporate profits of national corporations to various states and regions in the United States? Problems of this sort have impeded the development of regional or state income accounts similar to our national income accounts. Also, to completely understand a particular region you have to have data on what is going on in other regions of the United States. To illustrate, an increase in investment spending in the Ninth district does not necessarily mean a

corresponding increase in the production of investment goods and services in the district, for many of these would probably be imported from other areas in the United States, as well as foreign countries. In addition, the decision to invest or not to invest in the district would probably be made in many cases outside of the district. Therefore, the scope of regional business analysis is restricted much more than the analysis of national business conditions.

In spite of the above mentioned limitations, existing data and methods are available that provide a great deal of information about a regional economy, and it is these that I would now like to discuss. My remarks will be restricted to our efforts to analyze the business or real nonagricultural economic activity in the district. Because the scope of our efforts to analyze regional business conditions is restricted by the availability of data, our data base will be discussed first.

The current economic data on the business sector of the Ninth Federal Reserve District consist of monthly and quarterly indicators that cover various facets of district economic activity. A preponderance of our monthly indicators is employment data which measure such things as the civilian work force, employment, unemployment and employment by industrial sector plus average weekly hours and earnings in manufacturing. These data are gathered by states in the district as part of the Department of Labor's Current Employment Statistics Program. It is available fifteen days after the end of the month, which makes it very timely data. Employment data are the most comprehensive source of current economic data on the Ninth district.

Because it is considered a coincident indicator of the business cycle, employment data provide a current measure of economic expansion and contraction in the district.

In the area of consumer spending, series are maintained on new passenger car registrations and department store sales. As measures of production, series are kept on the industrial use of electric power and production worker manhours. A series is also maintained on iron ore production. Comprehensive data are available on district construction activity where in addition to building permit data which the Federal Reserve Bank of Minneapolis collects, construction contract data are available from F. W. Dodge Corporation.

Quarterly series, which we watch, are state personal income estimates which are prepared by the Office of Business Economics in the Department of Commerce and prime defense contract awards data by state which are released by the Department of Defense. Personal income is superior to employment as a measure of overall economic well being, and just recently it has become available by a broad industrial source on a quarterly basis. Because defense spending comprises well over half of the Federal government's procurement of goods and services, prime defense contract awards provide a measure of changes in Federal government spending in a state.

Our present data base suffers from three deficiencies. First, we have some serious gaps in our data. The absence of any comprehensive measure of retail sales is a noticeable gap. This is especially disconcerting in our district, where trade is the largest economic sector in terms of employment. We also lack a comprehensive measure of production in the district. The second occurrence of deficiency is the occurrence

of substantial time lags in obtaining some data. For example, the usefulness of both state quarterly income estimates and prime defense contract awards data are limited by the fact that we receive them three to four months after the end of the quarter. Third, the reliability of the regional data does not match that of national data. For example, our measures of the civilian work force, employment and unemployment do not possess the accuracy of their national counterparts.

Although I have pointed out some of the deficiencies in current regional economic data, the situation is improving. At the federal level, both the Office of Business Economics and the Bureau of Labor Statistics are expanding the amount of current regional economic data they publish. The Office of Business Economics is currently developing a regional economic information system. As a result of this program, regional personal income data are now available in greater detail and for counties and SMSAs as well as for states. The Bureau of Labor Statistics this year began publishing detailed labor force data -- age, sex, race, etc. -- for selected states and SMSAs. Also, in 1970 we expect that job vacancy data for selected local areas throughout the country will be available. The Twin Cities SMSA, fortunately, is included in these new series. At the state level, a great deal of data are available from administrative records, especially tax records. The problems are in identifying the data's usefulness and getting it in the proper format. Given the above information, we can look forward to an expanding data base for regional business analysis.

As an effort to supplement our data base, we conduct an Industrial Expectations Survey. This survey is sent to approximately

200 district mining and manufacturing concerns four times a year. We ask our respondents to give us the percentage change in their sales for the past quarter over a year ago, and then to project the year-to-year sales change they expect in the current quarter and the next two quarters. Questions are asked regarding firms' attitudes towards inventories and plant and equipment facilities. The firms also answer a question regarding the number of employees as of a specified date and verify their standard industrial classification (SIC) code. We have just completed the eighth survey, and it has proved to be a valuable source of data. Also, a comparable national survey is available, so it is possible to evaluate district manufacturing sales performance against national manufacturing sales performance.

The results of the survey so far have been very interesting and quite informative. The sales increases experienced by district manufacturers have been quite substantial. The lowest percent increase in sales from a year ago was 8.6 percent and in five out of the last eight surveys district manufacturers have experienced year-to-year sales increases in excess of 10 percent. Also, the sale of durable manufacturers' goods has been growing at a much faster rate than the sale of nondurable goods in the district. This is not surprising given the industrial structure in the district, for a number of rapid growth durable goods manufacturers such as computer manufacturers are located in the district. It also has disconcerting aspects in that one of the slowest growing nondurable manufacturing industries has been food and kindred products, the district's largest manufacturing industry. In comparing district manufacturing sales performance with national manufacturing

sales performance, the district in five out of the eight surveys out-paced national manufacturers' sales performance.

The results of the mining component of the survey have not provided data as reliable as that of the manufacturing component. The number of respondents is small, usually ten responses or fewer, and strikes, especially in copper mining, have distorted the survey results.

The performance of the survey is in the process of being evaluated. Preliminary findings reveal that its performance as a predictor of economic activity has not been too good. If we had assumed that manufacturers' sales were the same in the current quarter as in the preceding quarter, we would have generally been closer to their actual sales performance than if we had used the manufacturers' sales expectation for the current quarter. However, by watching how manufacturers change their expectations from quarter to quarter, we are provided with some clues on how manufacturers' expectations and outlook have changed.

District newspapers, trade journals and business periodicals can also be a valuable source of regional economic data. In addition, we periodically conduct informal surveys of our Board of Directors, who represent the various states and areas in the district as well as a cross-section of various industries, to obtain their assessment of current and future prospects of their own businesses and the district and national economy.

Given this data on our district, how do we proceed to analyze it? First, all monthly data where applicable are seasonally adjusted. This allows us to evaluate trend and cyclical characteristics of the

data and to determine if the series is increasing or decreasing. The core of our analytical procedure is a computer program that analyzes the last fourteen observations of a particular series. Calculations are made to measure the percentage change at an annual rate from a month ago, a quarter ago, and a year earlier and the trend rate of growth for the last twelve months. The output from this computer program is presented in tabular form with the appropriate national series listed along side the district series. This program is in the process of being completely automated, so that the computer will be able to compute a number of tables and graphs. This data along with any supplemental data such as the Quarterly Industrial Expectations Survey provide the basis for our analysis of business conditions in the Ninth Federal Reserve District.

With this information we attempt to assess the current economic situation in the Ninth Federal Reserve District. Because this information is provided to economic policymakers, we endeavor to evaluate the current status of the district's economy. Is economic activity in the Ninth Federal Reserve District speeding up or slowing down? For instance, in spite of the fact that district wage and salary employment increased between June and July, it declined in the three-month period ending in July on a seasonally adjusted basis. Also, the recent growth in district wage and salary employment is below its recent twelve-month trend rate of growth. Thus our assessment is that overall economic activity recently has been slowing in the district.

To explain movements in general indicators of district economic activity, it is necessary to examine the district's important economic

sectors. In the manufacturing sector, for example, recent evidence also suggests a slowdown. The results of our latest Industrial Expectations Survey indicate that the rate of increase in district manufacturing sales slowed between the first and second quarters, and district manufacturers are now less optimistic about their sales prospects for the last half of 1969 than they were last May.

Also, we are interested in how economic growth varies between the various states and areas of our district. Although personal income in the first quarter of 1969 increased 2.4 percent above the fourth quarter of 1968, this increase was not shared by all states in the district. Substantial first quarter gains in Minnesota and North Dakota of 3.6 percent and 2.7 percent respectively offset declines of 1.3 percent in Montana and 2.1 percent in South Dakota. In order to place this data on the district in proper perspective, the performance of district economic indicators is compared to national economic indicators. For example, whereas the district wage and salary employment decreased 3.5 percent at an annual rate in the three-month period ending in July, in the nation it increased at a 1.5 percent annual rate. This is the type of analysis that we are able to make, and the essential thing is to detect signs of economic change in the district and attempt to explain them. This analysis of district business conditions combined with analyses of the other major segments of the district's economy provide a comprehensive analysis of the district's economy.

* * *

Next, I would like to discuss another type of regional economic analysis in which I have been involved. This project is the RAFT or Rapid

Analysis Fiscal Tool project. This project is being sponsored jointly by the Upper Midwest Research and Development Council and the Citizen's League, two nonprofit service organizations located in the Twin Cities, and it is funded by a Ford Foundation Grant. RAFT is a computerized representation -- a model -- of the existing local government fiscal situation in the seven-county Twin Cities metropolitan area.

The model will consist of two basic components: 1) a file of detailed fiscal data, updated annually, including valuations, levies, tax rates, revenues, expenditures and other information on school districts, municipalities, townships and counties in the seven-county Twin Cities metropolitan area, along with selected social and economic indicators; 2) a representation of existing laws and formulas affecting local government revenues and expenditures, specifically designed to permit the testing of possible policy changes in these laws and formulas.

The model will permit rapid analysis of the effect of proposed changes in tax laws and formulas on the fiscal situation of local governments and show the impact on representative taxpayers in different localities in the Twin Cities area. Hopefully, this model will be operational sometime during the first part of 1970. RAFT is the first project of this kind in the country, and the model is being constructed so that it can be expanded to include the entire state of Minnesota.

Given the large number of governmental units in the Twin Cities metropolitan area, the increasing demand for governmental services and the wide range of fiscal disparities among Twin Cities area governmental units, this model should be an invaluable tool for rational fiscal planning and policymaking. Once the model is fully operational, it is

planned that some appropriate government unit will maintain and operate it. I have mentioned this type of regional analysis because it is, I feel, of interest to your industry. Because your respective companies operate in a large number of communities, many of which are concentrated in metropolitan areas, you are interested in local government finance and how it affects the development of a metropolitan area.

* * *

I have presented a brief description of our interest in the analysis of regional business activity and discussed some of our efforts in this area. How may this work be of benefit to you? Much of the regional economic analysis that the bank undertakes is published in one form or another and is made available to the public at no cost. Therefore, I would like to summarize with you several of our department's releases.

(1) Ninth District Conditions is a monthly publication of the Federal Reserve Bank of Minneapolis that presents an analysis of the current business, construction, agricultural and financial conditions in our district. It also contains 52 monthly series of business and financial data both for the nation and the district. This publication provides the reader with a current assessment of economic conditions in the district and a large amount of current economic data about the district and the nation. Over seven thousand of these publications are mailed out monthly.

(2) The Federal Reserve Bank of Minneapolis also collects building permit data from 310 building inspectors and city clerks throughout the district. These data are published in a monthly release and in

an annual summary. They provide data on the number and valuation of building permits in addition to providing data on the type of permit. The data are also broken down geographically to the municipal level. Building permit data are very important for monitoring and projecting the growth of an area as evidenced by the fact that the Twin Cities Metropolitan Council and the Minnesota State Highway Department regularly use building permit data in their research work.

(3) Another publication is our Bank Debits release. Bank debits basically represent the total amount of checks written against demand deposit accounts (i.e., checking accounts) of individuals, partnerships, corporations, states, and other political subdivisions in payment for goods, services and debts. This release is published monthly and annually. They also contain a great deal of geographic detail. These data are used as a measure of economic activity especially for small nonmetropolitan communities. Chamber of Commerces and other organizations use these data as a measure of economic growth in their particular community.

The bank also publishes several financial releases and an Annual Statistical Review. Furthermore, our Research Department answers a large number of requests each year for data. We are always happy to discuss with anyone interested in our activities, any additional ways we may be of value. Although I am in no position to speak for the other federal reserve banks, they also publish and distribute data similar to ours.

Data collection and dissemination is a cooperative effort. Just as a large number of organizations and people come to us for economic

information, we gather our information from a wide range of sources. Therefore, we turn to companies like yours for information. Our Industrial Expectation Survey would not be possible if it was not for the fine cooperation that district businesses have provided. The same is true of our district series on the industrial use of electric power. Therefore, we need and solicit information from private business. Your efforts in industrial development are of great interest and importance to us, because this type of information is valuable in helping us monitor economic growth in our district.

In summary, the Federal Reserve Bank of Minneapolis has a definite interest in regional business analysis and actively pursues a program to analyze current economic conditions in the Ninth Federal Reserve District. We stand ready to provide you with economic data you require if we have it, and depend on companies like yours to get the vital information we need.