

# SURVEYING SMALL BUSINESSES ABOUT THEIR FINANCES

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## I. Introduction

Small businesses account for about a third of employment and sales of US industry and a majority of its growth (US Small Business Administration 1988b). Yet despite the importance of small businesses in our economy, relatively little is known about the financial position of small firms.

To obtain basic data on small businesses, the Board of Governors of the Federal Reserve System and the Small Business Administration sponsored the National Survey of Small Business Finances (NSSBF) in 1988. Conducted by Research Triangle Institute (RTI), NSSBF collected data from a national sample of 3,600 small business firms inventorying their use of transaction accounts, other deposit and investment accounts, and credit services by source as well as obtaining a balance sheet, an income statement, and other characteristics of the business. A major concern of the study was to assess the degree to which small businesses rely on local commercial banks for credit, transactions, and deposit services. This information may have implications for public policy on mergers and deregulation in financial markets. The survey was intended, however, to serve a much broader purpose of providing basic data needed to address a wide range of issues in small business finance.

The NSSBF is the first attempt in several decades to collect comprehensive financial information from a nationally representative sample of small businesses (Acs and Audretsch 1989). The dearth of experience in surveying small businesses was a problem at virtually all stages of the survey -- from development of the sampling design and data collection procedures to data preparation. This paper provides the first report of the purpose, content, and basic procedures used for the survey and presents a preliminary discussion of the coverage and overall response. (For a more comprehensive report, see Cox, Elliehausen and Wolken, 1989.)

## II. Background and Objectives

One of the regulatory functions of the Federal Reserve Board is to determine whether proposed mergers or acquisi-

tions of bank holding companies and of certain banks are anticompetitive. This task requires empirical delineation of the economic markets in which banking firms operate. Current analysis relies on research and court decisions that are more than two decades old. A major purpose of the NSSBF was to determine how banking markets should be delineated for small businesses. Data needed for this task also provide information about other issues associated with small business finances.

The need to study banking markets for small businesses dictated that NSSBF collect data along two dimensions (see Wolken 1984). First, to delineate geographic markets, the survey obtained information on the geographic location of suppliers of financial products relative to the small business. Second, the survey collected an inventory of the different financial products that the firm obtained from each supplier to determine whether the business obtains services as a "cluster" from a single institution or purchases them separately from different institutions (in other words, whether banks compete in a single product market or in several separate product markets).

The bank market definition problem is only one component of the study of how small businesses finance their activities. In a modern economy, business firms invest in real assets to carry on production. Finance is concerned with the questions of how much the firm should invest and how it should obtain funds to pay for these investments. Important considerations for the small business are the cost and availability of credit to finance its operations.

The NSSBF collects a complete balance sheet and identifies the sources of financing to the firm. It also collects information on the ownership and management characteristics of the firm, collateral and guarantor characteristics of the firm's debts, and extent of use of cash services. This information permits empirical analysis of many of the basic questions on small business financing (Ou 1986; Pettit and Singer 1985).

## III. Sample Design

The NSSBF collected data from two samples: a national sample of about 3,600 small businesses and a supplementary sample of 400 firms having SBA-guaranteed loans. The procedures for the SBA sample were comparable to those used for the national sample. This discussion focuses on procedures used in selecting the national sample.

### *Definition of the Target Population*

The target population for a survey is the entire set of elements about which inferences will be made using the survey data (Cox and Cohen 1985). For the NSSBF, the target population was defined to be all small nonfinancial and nonfarm small business enterprises in the US in operation as of December 1987.

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1. We would like to thank Charles Ou of the Small Business Administration and Frederick Yohn and members of the Financial Structure Section at the Board for advice during the development of the survey; RTI staff members involved in implementing the survey; and Gerhard Fries, Ronnie McWilliams, and Andrew Steinerman who provided excellent research assistance in preparing this paper. This project was funded by the Board of Governors of the Federal Reserve System and the US Small Business Administration. The views expressed in this paper are those of the authors and do not necessarily reflect those of the Board of Governors of the Federal Reserve System or Research Triangle Institute.

A firm was considered to be small if it had fewer than 500 full-time equivalent employees. Large firms were excluded from the target population because they generally have access to a national market for financial services and are not a concern in bank antitrust cases. Moreover, a large amount of publicly available data already exist for large businesses.

Nonfinancial and nonfarm business was defined as all privately owned and for-profit businesses, excluding industry groups: (1) agriculture, forestry, and fishing; (2) finance and insurance underwriting; and (3) real estate investment trusts. Some industry groups (especially utilities, transportation, and educational services) contain both privately and publicly owned entities as well as for-profit and not-for-profit firms. Ineligible firms in these industry groups were identified in a screening interview, which is discussed in a later part of this paper.

These restrictions correspond to the definitions for the nonfarm, noncorporate business and corporate nonfinancial sectors in other statistical sources. In addition, the restrictions eliminate from the target population several types of organizations that differ substantially from most businesses, or for which existing statistical information already exists.

An enterprise was defined as an aggregation of all offices, branches, and subsidiary companies under common ownership and control. An enterprise may be a single, independent establishment or a company with multiple branches or subsidiaries. While production and sales occurs at the subsidiary or branch level of the firm, financial decisions typically are made at a higher level and encompass all branches and subsidiaries of the firm.

Firms that were no longer in business, bankrupt, or in business less than a month at the time of the interview were also ineligible for the survey. At the target date, the finances of such firms would not reflect those of a going concern.

#### ***Sampling Frame***

The sampling frame is a list or mechanism used to identify population elements for sample selection purposes. The ideal frame is a list of all population members with sufficient data to identify and locate each member (Cox and Cohen 1985). Thus, the utility of a particular sampling frame also depends on the method chosen for data collection. Cost considerations led to the decision to use telephone data collection for the NSSBF. For this reason, availability of telephone numbers was a crucial consideration in selecting a sampling frame.

The sampling frame for the NSSBF was constructed from the December 1987 Dun's Market Identifier (DMI) file. The DMI file combines the old Dun and Bradstreet data file, which contained firms applying for credit, and a business telephone listings file. The addition of firms from the telephone listings file reduced the coverage problem of the old program, although there is still undercoverage of very new firms, firms with few employees, and sole proprietorships. Nevertheless, the SBA estimates that the DMI file accounts for about 93 percent of private employment in the US (US Small Business Administration 1988a, 1988b).

Several alternative frames provide potentially better coverage than the DMI file, including area probability sample based frames, the Bureau of Labor Statistics' Employment and Wages (ES-202) file (which provides comprehensive coverage of firms that employ five or more persons and are active in the first quarter of the year), and IRS tax returns. These alternatives were rejected because of expense or confidentiality restrictions as well as lack of availability of telephone numbers.

#### ***Sample Selection***

To develop the sample design, frame counts were obtained for various reporting domains. Reporting domains of interest for which DMI information was available include industry, Census region, urban/rural location, age of business, number of employees, and sales. The distribution of firms indicated that rural firms would have to be over-sampled to achieve approximately equal precision by urban/rural location. Similarly, larger firms would have to be oversampled to achieve equal precision across all size groups of firms.

The sample frame was partitioned on the basis of Census region (Northeast, North Central, South, and West), urban/rural location (firms in MSAs are classified urban; all others are classified rural), and firm size (small=1-49 employees, medium=50-99 employees, and large=100 or more employees).

The decision was to create 28 strata, allocating 400 completed interviews to small firms in each region by urban/rural location category, 200 completed interviews to medium firms in each urban/rural location category, and 200 completed interviews to large firms in each urban/rural location category. For medium and large firms, the completed interviews were allocated proportional to population size within each Census region to reduce the effect of unequal weighting. Simple random sampling was used to select firms from each stratum.

#### **IV. Questionnaire Development**

The survey materials were developed in an iterative process involving four rounds of informal tests and one formal pretest. Most respondents would not be able to report the requested financial data accurately without consulting records. For this reason, the survey design called for mailing worksheets listing the financial questions to respondents before interviewing. The information on the worksheets was then to be collected in telephone interviews. The use of telephone interviews to collect the data was intended to achieve a higher response rate and better quality of information than is typically obtained in mail surveys.

The survey objectives involving public policy toward commercial banks required collection of an inventory of financial services by source (see Wolken 1984). The information could be obtained either by listing the sources of financial services and then asking about the financial products obtained at each institution or by taking an inventory of services and identifying the sources of each service. Testing results indicated that it was easier for

respondents to identify the financial product first and then list the sources.

While firms have a small number of some financial services (such as checking accounts and credit lines), they may have a large number of other types of financial services (for example, automobile lessors may have many motor vehicle loans). Testing indicated that higher levels of aggregation increased the complexity of the questionnaire, and respondents often had greater difficulty answering questions. Some aggregation, however, was necessary to avoid extremely burdensome interviews for some respondents. The types of financial services most likely to cause problems -- mortgages, motor vehicle loans, and equipment loans -- were categories that respondents had little trouble understanding and that tended to be relatively homogeneous.

Another problem was to develop a structure for collecting reasonably consistent financial data from all firms in the sample. Several obstacles were encountered. Accounting practices, developed for controlling business firms' operations rather than reporting economic value, are not uniform. Larger firms tend to have greater coordination and monitoring needs and thus more complex records than smaller firms. Similarly, partnerships and corporations tend to have more sophisticated records than proprietorships. Federal tax returns provided a nearly common basis for reporting balance sheet items for partnerships and corporations. The worksheet and questionnaire identified the appropriate lines from the tax forms for each item requested. Proprietorships, however, do not normally prepare balance sheets. They had to be instructed how to construct a balance sheet. Informal tests also revealed that many respondents (partners and stockholders as well as proprietors) did not understand accounting terms. Therefore, definitions were provided for all items in both the worksheet and the questionnaire. Moreover, a proprietor's business and personal finances are not normally separated. Instructions were also necessary to provide guidance in separating business and personal finances.

Testing also revealed that respondents' willingness to respond varied substantially for different types of questions. Few respondents were sensitive to questions about the general characteristics of firms. Few respondents refused to acknowledge use of different services or to identify the source from which it was obtained. Some respondents were willing to report sources but refused dollar amounts. Income statement and balance sheet questions encountered the most resistance. Many respondents refusing income and balance sheet questions viewed this information as confidential. Lack of understanding of accounting terms also contributed to respondents' reluctance to answer these questions.

Some respondents were unwilling to report aggregate debts or cash holdings in a balance sheet, even though they had reported dollar amounts of individual debts and accounts. The order of questions was based on this experience.

A formal pretest was conducted for small samples of firms from the DMI and SBA lists. Responses were obtained from 26 of 45 eligible respondents from the DMI sample.

Thirteen of the remaining firms were refusals. The remaining cases were partial interviews, which were not completed due to time constraints.

Respondents appeared to have little problem answering the financial service questions, although dollar amounts reported on this part of the questionnaire often appeared to be estimates. Some respondents had difficulty with the income statement and balance sheet. Refusals and don't know responses were also a problem for these cases.

## **V. Implementation and Response**

Based upon the results of the four rounds of testing and pretest, a data collection strategy evolved. The approach began with a short screening interview to determine study eligibility and to confirm the mailing address. A lead letter package and worksheets were then mailed to the business. After a 10 day delay, the business was contacted by telephone and questionnaire data collected including worksheet responses. At the conclusion of the interview, the interviewer asked the respondent to mail the worksheet and the records he used in answering the questions. This section discusses the results of this data collection approach.

### **Screening Results**

Screening interviews of firms selected for participation were conducted to determine eligibility and to correct inaccurate information on ownership, telephone number, and address. Because the eligibility rate was unknown, screening was scheduled in waves. Each wave was a random sample. Thus, estimates of eligibility from the early waves could be used to select a sufficient number of firms in the fourth wave to yield the desired number of eligible firms.

A total of 8,017 firms from the DMI file were screened. Of these firms, 5,280 firms (66 percent) were determined to be eligible and an additional 267 firms (5 percent) remained indeterminable.

Virtually all of the ineligible firms can be classified into one of two categories. The first category consisting of ineligible types of businesses contains 969 firms (12.1 percent of screened firms). About 57 percent of these 969 firms were not-for-profit or publicly owned, 28 percent were not the main office of the firm, 9 percent had more than 500 employees, and 6 percent were subsidiary companies.

The second category contains firms that were no longer in business. About 17 percent of the sample was in this category: 921 firms where the owner or another knowledgeable person reported that the firm was out of business, and 452 firms which had no directory listing and could not be traced through calls to their top executive, the Better Business Bureau, the Chamber of Commerce, local libraries, and the telephone company.

### **Interviewing and Response**

After completion of screening, packages were mailed to eligible and indeterminable businesses containing letters from Alan Greenspan and RTI's president urging participation in the survey, a question and answer pamphlet

explaining the purposes and procedures for the survey, and the worksheets. Ten days after packages were mailed, interviewers began telephoning respondents. The pretest had indicated that most respondents could not complete the interview in one session. Initially we planned to have the interviewer ask the general questions about business characteristics first and then to break off the interview if the respondent had not completed the worksheets. Early results, however, indicated that the bulk of the sample were very reluctant to respond or difficult to reach. In addition, not having completed the worksheets was clearly being used as a "put off" technique by the respondents. To alleviate this problem, interviewers were instructed to allow a breakoff only when they were convinced the respondent intended to complete the worksheets. Otherwise, the interviewer was to encourage respondents to get any records they had and continue the interview.

Obtaining response was a continuing problem throughout the interview process with two primary sources for the difficulty: (1) respondents did not want to respond to a survey that asked for such sensitive, confidential data and (2) establishing contact with the owner and finding an appropriate time for interview was often problematic. This difficulty in establishing contact and gaining cooperation was reflected in the number of contacts needed to complete screening and the interview.

An average of 4.3 calls were made for each business selected for screening with 3.1 calls made for completed screenings, 4.9 calls for nonrespondents, and 9.6 calls for unable to contact firms. For the interview itself, 11.6 calls were made on average for each sample business with 10.4 calls made for totally complete interviews, 11.6 - 20.3 calls for partial interviews, 10.9 calls for total nonrespondents and 19.2 calls to unable-to-contact businesses.

Since obtaining response was so problematic for this study, we set up four separate response status indicators for the interview: the first for Section I where business characteristics were discussed, the second for Section II where financial services used by the firm were inventoried, the third for Sections III-V where the income statement and balance sheet were obtained and the fourth for the questionnaire as a whole. For completed questionnaires and work in progress, we evaluated the individual section response status indicators by tabulating the frequency of missing data in the data base. When too large a percentage of the items in a completed section were missing, the respondent was telephoned to obtain the missing data. Data were obtained for approximately 60 percent of these reopened cases.

The data collection goal was to achieve a 75 percent response rate among study eligibles. Early in the data collection process, it became clear that achieving this goal might not be possible. From the beginning days of the survey, respondents demonstrated extreme reluctance to participate in the study. As an example, during the first two weeks of data collection, interviewers averaged less than one completed interview per interviewer-day worked (an 8-hour shift). Drastic measures were taken to boost production including staff retraining, reassignment of

personnel, changes in working hours, incentives, etc. Production increased markedly peaking at 3-4 completed interviews per interviewer-day. The bulk of time was spent in trying to establish contact with respondents and to convince them to participate. The interview itself averaged 50 minutes in length; this time to complete together with the end-of-year data collection period made every interview difficult to obtain.

An interview was considered complete if the respondent provided answers to the majority of the financial inventory questions in Section II. When all possible nonresponse follow-up approaches had been exploited, we achieved a 71 percent response rate for the DMI survey. Of these respondents, 93 percent had completed all survey sections including the income statement and balance sheet sections. Breakoffs were more frequent than typically found in sample surveys and they occurred at all points in the survey questionnaire. To illustrate, 24 percent of the nonrespondents stopped after having provided all Section I data on characteristics of their business.

In spite of having screened for eligibility, we had 6 percent of the fielded DMI sample classified as ineligible. These survey ineligibles included ineligible business types with incorrect SIC codes, subsidiary companies and large businesses not correctly identified in screening, and companies that had gone out of business since screening or were not truly in business. The latter source of ineligibility often was identified after the interview was nearly complete. In recording income, the interviewer would encounter no sales and no expenses. Probing in these cases usually determined that the business had been actively pursued in the past but was now totally inactive.

There was little difference in response rates by firm size. When firms were grouped by other criteria, however, some differences in response rates were found. Rural firms were more likely than urban firms to complete interviews. By region, the response rate was lowest in the northeast (68 percent) and highest in the south (74 percent). Among industry groups, response rates ranged from 68 percent in transportation, communication, and public utilities to 75 percent in mining and manufacturing and in wholesale trade industries.

## *VI. Concluding Remarks*

A few observations about responses and use of worksheets and records are worth mentioning. Most respondents had little difficulty in reporting about financial institution relationships. Dollar amounts were the most difficult questions in this section. Many estimated dollar amounts here but later consulted records to report income statement and balance sheet items. Small firms' failure to use worksheets or records was troublesome, but most of these firms appeared to have simple finances. Major items appear to be reported, although dollar amounts are often estimates. Items such as prepayments, deposits, and accrued expenses and taxes payable are likely to be underreported. However, these items tend to be relatively small amounts. We will be able to say a great deal more about these issues in a future paper.

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