Volume Title: Conference on Research in Business Finance

Volume Author/Editor: Universities-National Bureau Committee for Economic Research

Volume Publisher: NBER

Volume ISBN: 0-87014-194-5

Volume URL: http://www.nber.org/books/univ52-1

Publication Date: 1952

Chapter Title: Analyzing the Effects of Business Size on Sources and Uses of Funds

Chapter Author: Charles H. Schmidt

Chapter URL: http://www.nber.org/chapters/c4784

Chapter pages in book: (p. 35 - 64)

ANALYZING THE EFFECTS OF BUSINESS SIZE ON SOURCES AND USES OF FUNDS

CHARLES H. SCHMIDT
Board of Governors of the Federal Reserve System

Despite the progress that has been made in the field of research in business finance during the past ten years, we are still a long way from having reasonably complete and satisfactory time series of balance sheet, income statement, and sources and uses of funds data for various size groups of business concerns. Most of the available tabulations of financial data and analyses of business sources and uses of funds have been confined to the incorporated sphere of the business population and, more especially, to the larger units in this sphere. It is only for the larger companies since the early 1920's that sufficiently detailed and dependable financial data have been available to the economist.

Not only the fragmentary character of financial data for small corporations and unincorporated business concerns, but the vast number of such enterprises makes the task of compiling information about them rather formidable. The situation in the smaller business area of the economy is such that even the less ambitious project of collecting and assembling data for a relatively limited but scientifically selected sample of business concerns is a costly and time-consuming task. Such sample data as we do have are largely incomplete and of doubtful representativeness, due in part to the small size of the samples and in part to the character of existing sources of information.

Since the emphasis in this paper is on the need for additional data, and since both personnel and financial resources available for exploring the economic implications of business finance are limited, some thought should be given to the major objectives of research in the field and the relevancy of size stratification of firms to the realization of these objectives.

I MAJOR OBJECTIVES OF RESEARCH

SOCIAL AND ECONOMIC RESPONSIBILITIES FOR FACILITATING SMALL BUSINESS FINANCING

It is this objective of economic analysis which, more than any other, requires the development of more adequate knowledge concerning the financing problems and practices of small corporations and unincorporated businesses. Socially, as well as economically, small business is a vital element in our society. Free entry of new business units and continued growth of existing small business concerns are essential to full employment of the resources of a free enterprise economy. In order for small business concerns to prosper it is essential that they have access to both short- and long-term credit and equity capital. Being small, such businesses have little or no access to the organized security markets; instead, they are dependent for their initial capital upon the owner's personal savings or investment by his friends, relatives or business associates, and upon retained earnings and long-term bank credit for funds with which to expand. However, the greater variability of small business profits complicates the problem of their financing, since retained earnings are a much less reliable source of equity capital for them than for larger companies with more consistent profits records.

The inherent difficulties of small business financing, often combined with inept management, are reflected in the large numbers of small business failures that occur even in prosperous times and often with alarming frequency in periods of business recession. Waste of economic resources resulting from business failures, concentration of business activity in a relatively small number of large companies, social and economic repercussions of restricted freedom of enterprise in establishing and operating one's own business – these are problems closely related to small business financing.

A frontal attack on the socio-economic problems of creating and sustaining small business units in the economy requires a much broader factual basis than anything that has been evolved to date. It is imperative that we should develop some quantitive measurement of small business needs for credit and capital, some perspective on the financial experience of small business in periods of prosperity and depression. We are confronted, on the one hand, with claims that all of the legitimate financial requirements of small business are being met and, on the other, with proposed legislation that would provide for a large volume of additional government or private financial assistance to small business. Wholly apart from any scientific interest in the phenomena of small business financing, there is a real need

for factual data on the magnitude and character of the problems involved in formulating methods for facilitating small business financing.

INDUSTRIAL DIFFERENCES IN BUSINESS FINANCING

Whether or not data for small corporations and unincorporated business concerns are essential for analyzing industrial differences in financial structure and practices depends entirely upon the industries selected for comparison. While the telephone industry, in which one company accounts for all but 5 percent of total assets and sales, is an extreme case, there are a number of others, including tobacco, rubber, petroleum products, and automobile manufacturing, railroads, and gas and electric utilities, in which fewer than twenty-five companies account for 60 percent or more of industry sales and total assets. Obviously, for industries of this type, there is relatively little to be gained by including data for small and medium-sized business concerns.

On the other hand, there are industries, such as retail trade, service and construction, in which small business units predominate. Any attempt to analyze the financial structure and practices of these industries must of necessity be predicated on the availability of data for small and medium-sized corporations and unincorporated business concerns.

IMPACT OF CENTRAL MONETARY AND CREDIT POLICIES

The effect of central monetary and credit policies on business financing practices and requirements cannot be properly evaluated from over-all aggregate business financial data. Smaller concerns, which depend heavily upon bank and trade credit in financing their working capital and some intermediate capital requirements, are, in all probability, most directly affected by policies designed to influence the availability of bank credit. Large corporations, being less dependent upon bank credit, and better able to finance their short-term credit requirements from alternative sources, are less likely to be directly affected by such policies. However, to the extent that credit policies have the effect of raising or lowering long-term interest rates, thereby affecting the availability of long-term funds, their impact will be felt by large corporations, which borrow substantial amounts through public sale or private placement of their notes, bonds and debentures.

The interaction of central credit and monetary policies with business financing practices and requirements is a field of research that merits careful exploration. Its effective investigation is, however, largely dependent upon the development and analysis of sources and uses of funds data for various business size groups.

THE ROLE OF THE CAPITAL MARKETS

The majority of small business concerns do not have direct access to the capital markets — investment banking channels, for example, and the organized securities markets — for the sale of bonds, notes and stock. This is the result, in part, of the relatively high cost of preparing and publicly marketing small security issues; in part, of the lack of general investor acceptance of the securities of small business concerns. Leading corporations, on the other hand, have ready access to such markets, and their financing activities account for practically all of the funds flowing through organized market channels.

For the purpose of analyzing this flow of funds, either the large corporation sources and uses of funds estimates prepared by the National Bureau and the Federal Reserve Board for leading corporations in selected industries may be used, or the Department of Commerce aggregative estimates for all nonfinancial corporations. The principal disadvantage of the former series is that of incomplete industrial and large corporation coverage, while the latter, by combining all industrial groups, lacks detail that would be of interest for such analysis. As an alternative, the feasibility of using the National Bureau and Federal Reserve data to supplement the Commerce estimates should be explored, but in any event no useful purpose would be served by using small corporation and unincorporated business financial data in the study of capital market transactions.

II Present Status of Research

Some progress has been and is being made in developing and analyzing sources and uses of funds data for 1) large corporations in selected industries for the period 1914 to date, 2) the aggregate of corporate business for the postwar and selected prewar years, and 3) small corporation samples drawn from various sources and covering various periods of time. On the other hand, relatively little information is available or has been collected regarding the financial structure and practices of unincorporated business concerns, and nothing has been accomplished by way of a complete accounting for all sources and uses of business funds stratified by major industry and by size of business concern.

USE OF SAMPLE DATA

As a substitute for an over-all size and industry stratification of business sources and uses of funds, financial statements and sources and uses of funds estimates for small corporation samples have been relied on extensively in comparing the financial structure and practices of small companies

with those of larger corporations. Alexander's study[1] of long-run changes in the financial structure of American business enterprise was, for example, based in part on data obtained from relatively small samples of small, medium and large corporations, while the Schmidt-Young analysis[2] of the effects of World War I on business financial structure and practices relied heavily upon data for three small samples of manufacturing and trade corporations.

While data obtained for larger samples have been used in analyzing comparative financial behavior during more recent periods, there are some reservations concerning the representativeness of these samples. Dirks, for instance, in analyzing earnings and financing of manufacturing and trade concerns during the period 1940-43, utilized financial statements for nearly 2,000 concerns[3] and a somewhat larger number were employed in subsequent articles covering the later war and early postwar years.[4] These statements were selected, with the collaboration of the Robert Morris Associates, from the files of bank credit officers, and were subsequently edited, tabulated and analyzed by research personnel of the Board of Governors of the Federal Reserve System. While the coverage of these samples proved to be relatively inadequate, particularly for the smaller size classes of manufacturing and trade corporations,[5] the financial experience of sample companies in the aggregate paralleled rather closely that of all corporations of comparable size during the period 1940-43.[6] However, there is some

[1] Sidney S. Alexander, *Changes in the Financial Structure of American Business Enterprise, 1900-1940* (National Bureau of Economic Research, ms., 1943).

[2] Charles H. Schmidt and Ralph A. Young, *The Effect of War on Business Financing: Manufacturing and Trade, World War I* (National Bureau of Economic Research, 1943).

[3] F. C. Dirks, "Wartime Earnings of Small Business," *Federal Reserve Bulletin,* January 1945; *idem,* "Wartime Financing of Manufacturing and Trade Concerns," *Federal Reserve Bulletin,* April 1945.

[4] See, in the *Federal Reserve Bulletin* for the dates given, the articles by: Doris P. Warner, "Financial Developments in Manufacturing and Trade," April 1945; Albert R. Koch and Eleanor J. Stockwell, "The Postwar Financial Position of Business," December 1946; Albert R. Koch and Charles H. Schmidt, "Financial Position of Manufacturing and Trade in Relation to Size and Profitability, 1946," September 1947.

[5] F. C. Dirks, "Wartime Earnings of Small Business," *Federal Reserve Bulletin,* January 1945.

[6] Charles H. Schmidt, "Wartime Changes in Financial Position of Manufacturing and Trade Concerns, FRB-RMA Sample and Corporate Universe, 1940-43," *Current Comments* (Board of Governors of the Federal Reserve System, confidential mimeographed release), February 25, 1947.

question as to the suitability of a period like 1940-43 for purposes of testing the representative behavior of any sample. Practically every business concern that continued in operation throughout the war period was subject to governmental controls and other factors that would make for uniformity, rather than dissimilarity, of behavior.[7]

While most of the studies of business size/financing relationships undertaken thus far have employed sample data in whole or in part, there is one noteworthy exception — Walter Chudson's cross-section analysis of the financial structure of manufacturing, trade, mining and construction corporations based on *Statistics of Income* tabulations for the year 1937.[8] For reasons which will be discussed more fully below, neither *Statistics of Income* data nor the recently initiated *Quarterly Industrial Financial Report Series* of the Federal Trade Commission and Securities and Exchange Commission are particularly suitable for developing sources and uses of funds estimates. There is a distinct possibility, however, that periodic cross-section analyses of financial structure of the type developed by Chudson could be used in lieu of, and certainly as a supplement to, sources and uses of funds estimates prepared from sample data.

SUMMARY OF ANALYTICAL METHODS AND FINDINGS

Since the number of published works dealing with the effects of business size on over-all financial structure and practices is relatively small, the analytical and statistical techniques which they employ, together with their principal findings, may be reviewed within a fairly brief compass.

[7] Subsequent analysis of the composition and coverage of a somewhat larger sample of small and medium-sized business concerns obtained from the same source and in the same manner as those underlying the analyses of manufacturing and trade concerns' financial experience during the period 1940-43 revealed that:

1 Coverage of concerns in the under $50,000 total asset size class was particularly low, there being only 38 manufacturing and 26 trade concerns of such size in the entire sample. Of an estimated 1946 small (annual sales of less than $50,000) retail trade concern population of 1,474,000, the sample contained only 12 concerns.

2 The majority of financial statements included in the FRB-RMA sample were obtained from larger banks — those with total deposits at the end of 1946 of $100 million and over, while only 11 statements were submitted by banks with total deposits of less than $10 million. Sampling only those business concerns that have financial statements in bank credit files in itself introduces an element of bias in the sample, and to omit the smaller banks, which deal with the very small business concerns, tends to bias the sample even further.

[8] Walter A. Chudson, *The Pattern of Corporate Financial Structure: A Cross-Section View of Manufacturing, Mining, Trade, and Construction, 1937* (National Bureau of Economic Research, 1945).

NBER Financial Research Program Study of Changes in the Financial Structure of American Business Enterprise[9]

The primary objectives of this study were 1) to determine the importance of various subclasses of ownership and indebtedness in relation to asset structure of incorporated enterprise, 2) to analyze changes in the relative importance of these constituent items over the period 1900-1940, and 3) to evaluate over-all economic implications of changes in corporate financial structure.

Relatively little use was made of sources and uses of funds estimates, most of the analysis being based on financial statement ratios computed from global statistics, with business/size comparisons derived from various small, medium and large corporation sample data. Because of changes in the complexity of corporate structure, evolution in accounting practices, and variations in the method of filing federal income tax returns, numerous adjustments of the basic data were required in order to ensure some measure of comparability between earlier and more recent years. As a consequence, the data have limited significance in analyzing the more detailed and minor changes in business financial structure, but are useful for describing changes of a broader and more general character.

Among the significant conclusions of this study relating to temporal changes in financial structure and practices of small and medium-sized, as compared with large, nonfinancial corporations are the following:

1 Large corporations increase indebtedness more rapidly than net worth in periods of profitable expansion and reduce indebtedness more rapidly than net worth in periods of contraction. Small corporations, on the other hand, build up net worth relative to indebtedness during economic expansion, while in periods of contraction losses suffered by small companies eat up their net worth more rapidly than debt can be repaid. The greater volatility of small business earnings in response to changes in over-all economic conditions is also indicated by cyclical changes in their current ratios, which contrast with anti-cyclical variations in the current ratios of large corporations.

2 Such declines as there may have been since World War I in inventory holdings relative to total assets were concentrated in small manufacturing and trading enterprises and department stores; there is no evidence of such decline among large manufacturing corporations, mail order houses or chain stores. Whereas inventory holdings were formerly larger in relation to total assets among small concerns than among large companies, the downward trend in the inventory/total asset ratio has brought the two size groups more nearly in line with one another.

[9] Alexander, *op. cit.*

3 Generally speaking, large corporation liquid asset holdings increased in relation to total assets over the period 1900-1940, whereas those of small companies remained relatively constant. There was also some evidence of greater liquid asset erosion among small companies during the depression of the early thirties, followed by a more rapid building up of such assets during the ensuing recovery period.

4 Evidence provided by the samples of small, medium-sized and large corporations concerning changes in the importance of bank and trade credit relative to total assets was rather inconclusive, but suggested a somewhat greater decline among large corporations than among small and medium-sized companies.

NBER Financial Research Program Study of Manufacturing and Trade Concerns in World War I[10]

One of the primary objectives of this study was to assess the impact of war and postwar inflation on the financial structure of small and medium-sized, as compared with large, corporations.

While limited use was made of sources and uses of funds estimates, chief reliance was placed on comparisons of selected asset, liability, and income items, many of which were converted to index numbers, using averages for the period 1916-20 as a base. Principal reasons for the selection of the index number technique were 1) lack of sufficiently detailed financial information to compute reliable sources and uses of funds estimates for that period, 2) disparities in the absolute dollar amounts being compared, and 3) primary interest in relative, rather than absolute, changes in financial structure.

Among the findings of this study that are of particular interest, especially in comparison with changes in business financial structure that took place during World War II, are the following:

1 Throughout the period of hostilities (1914-18) current assets of large corporations expanded more than those of small companies, reflecting a more rapid expansion of large company sales. During the postwar boom of 1919-20, on the other hand, growth of current asset holdings of small manufacturing companies was much greater than that of large manufacturing corporations. The opposite was true in the case of trade companies.

2 A somewhat less conservative inventory policy on the part of large corporations was evidenced by a steady decline in their inventory turnover ratio from 1916 on, whereas inventory turnover among small and medium-sized companies increased through 1920 and then declined rather sharply to approximately its prewar level.

[10] Schmidt-Young, *op. cit.*

3 The rapid and pronounced growth of large corporation short-term indebtedness to commercial banks was one of the most significant features of the entire wartime financial development. Before the war, large manufacturing and trade corporations were not, as a rule, heavy short-term borrowers; during the war and immediate postwar years, however, both the large manufacturing and the large trade corporation groups more than tripled the amount of their short-term bank borrowing. Smaller companies, on the other hand, reported much less of an increase in their short-term indebtedness.

For the most part, broad generalizations of the foregoing type, comparing large and small corporation financial experience in earlier years, are limited by the inadequacies of the data as well as by the lack of representativeness of the samples. In more recent years, increased comparability and detail of financial statements, together with improved samples have enlarged the possibilities for comparing financial structure and practices of large corporations with those of small and medium-sized concerns.

FRB-RMA Studies of Manufacturing and Trade Concerns in World War II

The most comprehensive comparisons of financial structure and practices among business concerns of various sizes are those incorporated in the series of articles published in the *Federal Reserve Bulletin* during the years 1945, 1946, and 1947.[11] Several statistical techniques are employed in presenting and analyzing the data, including indexes of major asset, liability and income items; financial ratios; and, to a limited extent, sources and uses of funds estimates.

For the sake of brevity, this summary will focus on the first two articles of the series – those that cover the financial experience of manufacturing and trade concerns during the period 1940-43:

1 While the percentage increase in sales, 1943 over 1940, was approximately the same for all size classes of manufacturing concerns in the aggregate, sales of smaller companies in industries such as steel, paper, chemicals, machinery, and transportation equipment increased relatively more than those of large companies. The same was true of smaller companies in related wholesale trade lines.

2 The relative increase in profit margins during the period 1940-43 was substantially greater for small than for large companies. In manufacturing, for example, profit margins of concerns in the under one-quarter million dollar total asset size class increased about three times, as compared with less than two times for companies in the one to five million dollar size class, and practically no change in the ten million

[11] Cited in footnotes 3 and 4.

dollar and over size class. A similar pattern was noted in the case of return on net worth, indicating that smaller companies in general experienced greater improvement than large corporations in their profits position during the early war years.

3 The relatively greater increase in sales and profitability of small business operations was reflected in the greater growth of their inventories, receivables, and liquid assets; correlatively, the greater expansion of small business operations resulted in a larger growth of short-term indebtedness, in the form of tax and wage accruals, trade notes and accounts payable, and amounts due to banks. While the liquidity position, as measured by the current ratio, of all manufacturing concerns declined between 1940 and 1943, the decline was much less in the case of small than of large companies. In the case of trade, there was marked improvement in the liquidity position of small concerns, and decline in that of larger concerns.

These and other findings corroborate the impression gained from earlier studies that the financial position of small business concerns in general is more volatile than that of large corporations, their sales and profits rising rapidly in the early stages of economic expansion and, presumably, contracting sharply in periods of recession.

NBER Financial Research Program Study of Corporate Financial Structure

In contrast to the preceding two studies, based on samples and covering eight- and three-year periods, is the cross-section analysis of corporate financial structure based on *Statistics of Income* data.[12] While the former studies stress relative changes in balance sheet and income items over time among different size classes of business, the latter analysis emphasizes differences in the composition of assets and liabilities among various industry/size classes of business at a given point of time. The technique is not only useful for evaluating the relative financial positions of small, medium, and large business concerns at a given time, but, if repeated annually or at other regular intervals, might be used as a substitute for the more detailed sources and uses of funds method of analyzing size differences in financing practices.

Conclusions concerning the effect of size on business financial structure and practices, based on the 1937 reports of all manufacturing, mining, trade and construction companies, may be summarized as follows:

1 While industrial activity, rather than size, is the primary determinant of a business concern's financial structure, differences in financial structure are associated with differences in size up to a certain point

[12] Chudson, *op. cit.*

(total assets of $5 million); beyond that point, individual company characteristics are more important than size as determinants of financial structure.

2 Primarily as a result of greater vertical integration among the larger corporations, inventory turnover declines as size of company increases; greater complexities of operation and multiple processing by larger concerns results in such companies holding larger stocks of goods-in-process relative to their total sales volume.

3 While liquid asset holdings relative to total assets vary irregularly with size of concerns, their components are directly related to corporate size. Relative to total assets, cash holdings decline and marketable security holdings increase as size of company increases. This reflects the practice among larger companies of investing excess cash balances in interest-bearing securities.

4 Generally speaking, debt in relation to equity declines as size of business increases, though the pattern is not uniform among all of the major industry groups and the generalization is not true of companies in the smallest size class (total assets of less than $50,000). Large companies with substantial investments in plant and equipment, notably those in the railroad and electric utility industries, borrow heavily to finance capital expenditures; very small companies, on the other hand, are often unable or unwilling to borrow on the credit terms offered them, and therefore rely primarily upon the owner's initial investment and retained earnings for their funds.[13] Among smaller companies, short-term debt is utilized much more extensively than long-term debt, with the proportion of bank to trade credit increasing with size of company.

5 Liquidity position, as measured by the ratio of current assets to current liabilities, improves with size of company; since this has been found to be true of both income and deficit corporations, the increase cannot be attributed to the greater prevalence of income corporations in the larger size groups.

6 Fixed capital assets relative to sales, like inventory, increase sharply with size of concern, and for the same basic reason, *viz.*, the greater degree of vertical integration which exists in the case of the larger companies. While fixed capital assets compared with total assets on a consolidated basis also show a tendency to rise as size of company increases, increases from one size group to another are not nearly so pronounced as in the case of the total asset/sales ratio.

[13] See also Neil H. Jacoby and Raymond J. Saulnier, *Business Finance and Banking* (National Bureau of Economic Research, 1947); and Carl Kaysen, *Industrial and Commercial Debt — A Balance Sheet Analysis, 1939* (National Bureau of Economic Research, ms., 1942).

7 While the ratio of capital stock to total assets declines as size of company increases, the surplus ratio rises sharply, with the result that bigger companies have a larger proportion of net worth to total assets than do smaller concerns (an exception was previously noted in the case of very small concerns which are largely dependent on equity capital for the bulk of their financing).

Again it should be emphasized that the foregoing conclusions were derived from an analysis of corporate financial structure in 1937, and while the general picture may not have altered materially since then, changes in detail as between size and major industry groups may have occurred during the intervening war and postwar years.[14]

III Main Problems of Research

Among the principal problems encountered in research on business size/financing relationships are 1) the limitations, for sources and uses of funds estimates, of such global statistics as those contained in the Federal Trade Commission/Securities and Exchange Commission *Quarterly Industrial*

[14] There are, in addition to the foregoing studies which emphasize comparisons in financial structure and practices among various size groups of business concerns, the following specialized studies covering certain industry and/or size classes, or certain aspects of financial structure:

Charles L. Merwin, *Financing Small Corporations in Five Manufacturing Industries, 1926-36* (National Bureau of Economic Research, 1942). An analysis of the comparative financial structure of 1,000 small corporations (assets of less than $250,000) in five manufacturing industries, based on federal income tax returns for the period 1926-36. No size comparisons are incorporated, but the results might be used in conjunction with related industry/size studies for purposes of comparing financial behavior in a period of pronounced economic recession.

Albert R. Koch, *The Financing of Large Corporations, 1920-39* (National Bureau of Economic Research, 1943).

Charles H. Schmidt: "Industrial Differences in Large Corporation Financing," *Federal Reserve Bulletin,* June 1948; "Industrial Differences in Large Corporation Financing in 1948," *Federal Reserve Bulletin,* June 1949. The studies incorporate basic data and analyses of the financial structure and practices of large corporations which could be used in connection with other sample data to illustrate differences associated with size of concern.

W. E. Hoadley, Jr., E. Baughman, W. P. Mors, *A Financial and Economic Survey of the Meat Packing Industry* (Federal Reserve Bank of Chicago, 1946), and *1948 Supplement* to the foregoing (Federal Reserve Bank of Chicago, 1948). Composite financial statements for various size groups of meat packing companies: one set of tabulations covers the period 1930-47; another, the period 1933-47, and a third, for the "big four" companies alone, the period 1918-47. Some comparisons of financial structure and practices by size of company are included in the analysis.

Carl Kaysen, *op. cit.* A study of the structure and character of debt by major industry and size of concern as of end of 1939, based on a carefully selected sample of approximately 6,200 credit reports drawn from Dun & Bradstreet files. Reports were classified into "cells" on the basis of size, industry, geographic location, size of town, form of organization, type of property holding and credit rating of the business concern, and comparisons made of debt structure among the various cells.

Financial Report Series and the Bureau of Internal Revenue *Statistics of Income,* 2) the difficulties involved in obtaining adequate samples of data to supplement the global statistics, and 3) the noncomparability of large corporations' financial statements with those of small companies, and of corporate financial statements with those of unincorporated concerns.

GLOBAL STATISTICS

Beginning with the year 1931, composite balance sheet and income statements of all corporations, classified according to total asset size, have been published annually by the Bureau of Internal Revenue in its *Statistics of Income.* These composite statements, together with supplementary tabulations of principal asset, liability and income items for all corporations classified by both size and major industry, constitute a valuable basic source of corporate financial data. More recently, the Federal Trade Commission and Securities and Exchange Commission have undertaken the compilation and publication of what amounts to a current quarterly extension of the *Statistics of Income* data for all manufacturing corporations. However, both BIR and FTC/SEC published data have certain characteristics that limit their utility for purposes of analyzing the effects of business size on financial structure and practices:

Statistics of Income. The principal problem involved in using the BIR data is that of differentiating changes in corporate financial structure from changes that are the result of size or industrial reclassification, births, deaths or mergers in the business populations, and consolidation or deconsolidation of financial statements. So far as changes in size and industrial classification are concerned, and the addition or subtraction of new and deceased corporations, there is relatively little that can be done by way of adjusting the data. However, it is principally in attempting to estimate sources and uses of funds that changes of this type constitute a serious problem. For periodic cross-section analyses of corporate financial structure, they are of less importance.

Consolidation and deconsolidation of financial statements introduces a different and, in many respects, more serious problem in the analysis of financial changes. Prior to 1934 companies were permitted to file consolidated financial statements at their option. From 1934 through 1941 all except railroad companies were required to file unconsolidated returns. From 1942 on, companies have been permitted to file consolidated returns upon payment of an additional 2 percent tax. The effect of the 1934 prohibition of consolidated returns was to increase sharply the reported amount of corporate assets, liabilities, net worth and sales by introducing intercorporate receivables, investments in affiliates, payables and sales,

which had previously been eliminated in the preparation of consolidated reports. In contrast, granting of the option to file consolidated or unconsolidated returns in 1942 did not cause a sharp or immediate change in reported financial structure, as corporations are only gradually returning to the filing of consolidated returns.

Specific problems encountered in using *Statistics of Income* data for purposes of estimating sources and uses of funds in recent years can best be illustrated by reference to actual figures, such as those shown in Table 1.

Table 1

COMPARATIVE BALANCE SHEETS, SURPLUS ANALYSIS AND ESTIMATED SOURCES AND USES OF FUNDS, ALL MANUFACTURING CORPORATIONS WITH TOTAL ASSETS OF LESS THAN $250,000, 1945-46[a]

(in millions)

	1945	*1946*	*Adjustments*	*Sources & Uses of Funds*[b]
Assets				
Cash	$ 650	$ 748		$ 98 U
Notes and accounts receivable	690	945		255 U
Inventories	780	1,154		374 U
Investments, gov't oblig.	215	150		65 S
Other investments	134	155		21 U
Net capital assets	1,051	1,386	d. $+118	453 U
Other assets	175	209		34 U
TOTAL ASSETS	$3,695	$4,747		
Liabilities and Net Worth				
Accounts payable	$ 511	$ 722		211 S
Bonds, notes & mtgs. payable				
Maturity less than 1 yr.	206	312		106 S
Maturity 1 year or more	241	364		123 S
Other liabilities	403	543		140 S
Capital stock, preferred	145	154		9 S
Capital stock, common	1,341	1,612	c. −19	252 S
Surplus reserves	58	59	e. −1	
Surplus & undivided profits	792	979	a. −406 b. +89 c. +19	111
TOTAL LIABILITIES & NET WORTH	$3,697	$4,745		
Selected Income and Other Data				
Net profits after taxes	a.	$ 406	e. +1 d. +118	525 S
Cash dividends	b.	89		89 U
Stock dividends	c.	19		
Deprec., deplet. & amortization	d.	118		
TOTAL SOURCES OF FUNDS				$1,431
TOTAL USES OF FUNDS				1,324
Discrepancy between estimated totals				$ 107

[a] Source: Bureau of Internal Revenue. Letters a-d preceding the amounts shown in the adjustment column refer to net profits, cash dividends, stock dividends and depreciation, respectively, and provide cross reference to debit and credit adjustments; letter e identifies an adjustment between surplus reserve and net profit.

[b] Estimated. Letter S following an amount indicates a source of funds; letter U, a use of funds.

The balance sheets are those for all manufacturing corporations with total assets of less than $250,000 at the respective year-ends, while income and dividend data are those of corporations that fell in this size class at the end of 1946. As indicated in the table, the discrepancy between reported and computed balance of surplus and undivided profits at the end of 1946 amounts to $111 million, or roughly 11 percent of the reported closing surplus balance. There is no way of telling to what extent this discrepancy reflects unreported debits to surplus arising out of asset revaluations, and to what extent it reflects changes in the individual company composition of this particular industry size group. Consequently, no attempt has been made to adjust for this discrepancy.

After making adjustments for current depreciation, depletion and amortization accruals, stock dividends and changes in surplus reserves, net changes in the asset and liability accounts are carried over as estimated sources and uses of funds. There is an unexplained discrepancy of $107 million between estimated total sources and total uses of funds, all but $4 million of which (representing differences caused by rounding of figures) can be traced back to the unexplained difference between the computed and reported closing balance of surplus.

In their currently published form *Statistics of Income* data are not suitable for purposes of estimating sources and uses of corporate funds, since, without surplus debits and credits being given, it is impossible to tell to what extent changes in the figures are the result of changes in industry/size classification or of changes in the numbers of companies whose statements are tabulated. A final limitation of *Statistics of Income* data, so far as current economic analysis is concerned, is that of the time lag involved in their publication. In recent years the elapsed time between the close of a calendar year and publication of *Statistics of Income* balance sheet and income statement data for that year has averaged around twenty-seven months.

Quarterly Industrial Financial Reporting Series. This was initiated by the Federal Trade Commission and the Securities and Exchange Commission in order to secure global estimates of manufacturing corporation assets, liabilities and principal items of income and expense on a relatively current quarterly basis. These statements are compiled from reports for all manufacturing companies with total assets of $5 million and over, and from scientifically selected samples of smaller companies, coverage ratios of the samples ranging from 3 out of 4 (corporations with total assets of $1-5 million) to 1 out of 72 (corporations with total assets of less than $50,000). The data are classified by industry (21 major manufacturing industries) and by size (5 size groups, based on total assets), but as yet

industry/size classifications are not available. The earliest figures obtainable are those for the quarter ending March 31, 1947; but such items as current depreciation charges, net debits or credits to surplus, and the breakdown of stockholders' equity into its component accounts begin only with the first quarter of 1948.

ACCUMULATION OF SAMPLE DATA

The FTC/SEC quarterly estimates satisfy the specific objective of measuring changes in manufacturing assets, liabilities, and income from quarter to quarter. While relatively free of any noncomparability resulting from changes in degree of consolidation or in industrial classification, the published FTC/SEC data are of somewhat limited use for purposes of conventional sources and uses of funds analysis. In the first place, the published figures represent not a constant sample but an estimated universe of manufacturing corporations whose number changes from quarter to quarter as a result of business births and deaths. Moreover, since the published figures represent universe estimates rather than constant samples or samples "blown up" to a constant universe, the year-to-year comparability of any given asset size group of companies is bound to be affected by changes in the size classification of individual concerns. Thus, over any given period of time, observed changes in the financial structure of a particular size class of manufacturing corporations reflect in part births and deaths and changes in the size classification of individual companies, and in part sources and uses of funds of a relatively large and constant business population.

In the second place, the existence of unexplained net debits or credits to surplus, which are relatively large for the smaller size classes of manufacturing corporations, makes it impossible to obtain accurate sources and uses of funds figures from the published data. Whether a net debit to surplus represents stock dividends, "write-downs" in the book value of assets, or some combination of these and other "non-fund" bookkeeping transactions cannot be determined. It should, however, be noted in passing that the magnitude of these unexplained debits and credits to surplus among the smaller size classes of manufacturing corporations has been found, in more recent reports, to be diminishing.

As is shown in Table 2, surplus reconciliation, changes resulting from business births and deaths and shifts from one asset size class to another, and unexplained net debits or credits to surplus are relatively large among the smaller size classes of manufacturing corporations covered by the FTC/SEC tabulations.

It is presumed that the item "other changes" in the above tabulation reflects primarily changes brought about by business births and deaths and

Table 2

ANALYSIS OF CHANGE IN SURPLUS, ALL MANUFACTURING CORPORATIONS BY ASSET SIZE, MARCH 31, 1948-49[a]

(in millions)

ITEM	TOTAL ASSET SIZE (in thousands)					
	Under $250	*$250-999*	*$1,000-4,999*	*$5,000-99,999*	*$100,000 and over*	*All Sizes*
Surplus 3/31/48	$675	$2,285	$4,851	$11,505	$13,944	$33,257
Net income, 12 months	159	525	1,175	3,677	5,553	11,088
Net surplus adjusted	−38	−106	−175	−298	−160	−774
Dividends	−56	−155	−426	−1,511	−2,273	−4,418
Other changes	−67	−126	−267	−352	258	−555
Surplus 3/31/49	673	2,423	5,158	13,021	17,322	38,598

[a]Source: Federal Trade Commission and Securities and Exchange Commission. Amounts do not always add to totals shown due to rounding.

by changes in the size classification of surviving companies. For manufacturing corporations with total assets of less than $250,000 the "other changes" item amounts roughly to 10 percent of opening surplus, and 42 percent of net income during the period covered by these figures. On the other hand, the "other changes" item is relatively small when compared with the opening surplus and net income of manufacturing corporations with total assets in excess of $100 million. Since, however, the smaller size classes of manufacturing corporations are the ones for which sources and uses of funds estimates are most needed, FTC/SEC data, as published, are not too helpful.

The difficulties encountered in deriving satisfactory sources and uses of funds data from published FTC/SEC financial statements of manufacturing corporations classified by size are further illustrated in Table 3, where it is seen that the discrepancy between total estimated sources and estimated uses of funds of manufacturing corporations with total assets of less than $250,000 amounts to $66 million – roughly one-fifth as large as the total estimated uses of $316 million, and larger than any single use of funds, save plant and equipment expenditures. With a discrepancy as great as this, it is difficult to say just how much significance may be attached to any one of the various sources and uses of funds shown in the table.

While the FTC/SEC data, as published, have limitations for purposes of estimating sources and uses of funds for various size classes of manufacturing corporations, a good deal could undoubtedly be accomplished by means of special tabulations of the basic data.[15] Thus, for example, a series

[15] As presented at the Haverford Conference, the paper neglected to discuss the possibilities for special tabulations of the basic FTC/SEC data for purposes of sources and uses of funds analysis. The text has subsequently been revised in the light of Mr. Friend's comments to include some mention of the need and possibilities for such special tabulations.

Table 3

COMPARATIVE BALANCE SHEETS, SURPLUS ANALYSIS AND ESTIMATED SOURCES AND USES OF FUNDS, ALL MANUFACTURING CORPORATIONS WITH TOTAL ASSETS OF LESS THAN $250,000, END OF FIRST QUARTER, 1948-49[a]

(in millions)

	FIRST QUARTER 1948	FIRST QUARTER 1949	*Adjustments*	*Sources & Uses of Funds*[b]
Assets				
Cash	$ 358	$ 352		$ 6 S
U. S. gov't securities	83	71		12 S
Notes and accounts receivable	519	483		36 S
Inventories	638	579		59 S
Other current assets	61	61		
Property, plant and equipment (net)	831	809	d. $+89	67 U
Other assets	162	163		1 U
TOTAL ASSETS	$2,652	$2,518		
Liabilities and Net Worth				
Bank loans – due within 1 year	$ 117	$ 102		15 U
Other notes and accounts pay.	419	395		24 U
Federal income taxes accrued	102	82		20 U
Other current liabilities	113	82		31 U
Long-term debt: bank loans	47	36		11 U
Long-term debt: other	117	132		15 S
Other liabilities	38	44		6 S
Reserves	14	14		
Capital stock and surplus	1,010	957		53 U
Earned surplus	675	673	a. −159 b. +56 c. +38	67
TOTAL LIABILITIES & NET WORTH	$2,652	$2,518		
Selected Income and Other Data				
Net profit after taxes, year ending March 31, 1949	a.	$159	d. +89	248 S
Cash dividends paid	b.	56		56 U
Miscellaneous debits to surplus	c.	38		38 U
Depreciation	d.	89		
TOTAL SOURCES OF FUNDS				$382
TOTAL USES OF FUNDS				316
Discrepancy between estimated totals				$ 66

[a] Source: Federal Trade Commission and Securities and Exchange Commission. Letters a-d preceding the amounts shown in the adjustment column refer to net profits, cash dividends, miscellaneous debits to surplus and depreciation, respectively, and provide cross reference to debit and credit adjustments.

[b] Estimated. Letter S following an amount indicates a source of funds; letter U, a use of funds.

of overlapping identical samples could be substituted for the universe estimates, and in this way the discrepancies resulting from business births and deaths and changes in size classification would be largely eliminated. Also, to the extent that the information may be obtained from the often inadequate bookkeeping records of small business concerns, surplus debits and

credits might be classified according to such major categories as stock dividends, plant and equipment and inventory revaluations, and capital stock premiums and discount.

NONCOMPARABILITY OF FINANCIAL STATEMENTS

Lack of uniformity in accounting principles and practices has steadily been reduced over the past ten or twenty years, but there are still many differences that affect the comparability of financial statements for small corporations with those of medium-sized and large companies, and of unincorporated business concerns with those of corporations. Among the more important are the following:

Cash versus Accrual Basis

A great many unincorporated business concerns, and some small corporations, count as income or expense for a given calendar or fiscal year only items actually received or paid in cash. Larger companies, almost without exception, follow the practice of accruing income or expense for the period in which it is actually earned or incurred, irrespective of when actual cash settlement is made. Over an extended period of time, both the cash and accrual bases of accounting yield approximately the same results (minor differences in the amount of taxable income and income taxes paid are bound to result, especially if tax rates change or taxable income fluctuates sharply from year to year); but comparisons involving periods of only one or two years may be appreciably affected by differences in accounting methods. Furthermore, in comparing corporations of various sizes, differences may arise from month to month or quarter to quarter, despite the fact that the majority of corporations utilize the accrual basis in preparing their annual statements. Large companies generally accrue items of income and expense throughout the year, whereas small companies often operate on a cash basis during the year and accrue income and expense only at the year-end.

Surplus and Valuation Reserves

During the past few years, large companies have utilized surplus and valuation reserves extensively for purposes of equalizing reported net profits, accumulating funds for replacement of high cost plant, and cushioning against inventory losses. Furthermore, it is fairly common practice among many of the large companies to incorporate such surplus and valuation reserve credits and charges in their regular quarterly financial statements. Smaller companies, as a rule, are less inclined to utilize reserve accounts for such purposes and where they do, will generally make such adjustments only at the year-end.

Compensation of Officers

One of the principal difficulties encountered in comparing operating results of incorporated with those of unincorporated businesses results from the unlike reporting of officers' compensation. The owner-proprietor of a small unincorporated business may include withdrawal of profits with his salary, or may pay himself no regular salary but simply withdraw funds as and when needed. Moreover, in the case of retail food, clothing and similar establishments, a substantial proportion of the owner's withdrawals may be in the form of merchandise rather than cash. Corporation executives, on the other hand, are paid regular salaries, and profit withdrawals are separately reported as dividends. Again the small, closely held corporation whose officers are also the owners may follow quite a different procedure from that of large companies in accounting for officers' compensation and profit withdrawals.

Other Accounting Problems

Many small businessmen are extremely lax about accounting separately for their personal and business resources, with the result that the purported financial statements of an individual proprietorship may in fact reflect the owner's personal as well as other business financial activities. Similarly, valuation of assets, including depreciation of fixed assets and pricing of inventories, tends to be somewhat haphazard among small concerns.

IV Suggestions for Further Research

There are several areas of research in business size/financing relationships that merit particular attention at this time. One is a careful appraisal of the impact of economic expansion and contraction on the financial structure and practices of different major industry/size groups of business concerns. The general approach for a study of this type would be similar to that employed by Alexander,[16] but with increased emphasis upon 1) comparisons among business concerns of different size, and 2) uniformity, or lack of uniformity, of behavior on the part of individual concerns. Another is the determination of the magnitude and character of long-term credit and equity capital requirements of small and medium-sized business concerns, using a questionnaire/interview technique similar to that employed in the Federal Reserve-Survey Research Center studies of consumer finances.

In addition to these two broad avenues of inquiry, there are several

[16] Alexander, *op. cit.*

closely related pathways of investigation that are of especial interest, including 1) the effects of federal income and of federal and state inheritance and estate taxes on small or medium-sized businesses, by reducing the amount of funds available for investment in them and bringing about their liquidation or sale to meet lump-sum tax payments; 2) the relative cost of debt and equity financing among small and medium-sized concerns, in terms of managerial control as well as actual financial expense, and 3) analysis of the factors determining investment, as well as the bases for estimating investment expenditures on the part of different industry/size groups.

Present plant and equipment expenditure estimates do not afford any detail by size of concern or by subclassifications into manufacturing or commercial and miscellaneous. Any efforts to obtain data on small and medium-sized business concerns by means of questionnaire/interview surveys should provide for accumulation of data necessary to estimate plant and equipment expenditures for various industry/size groups.

CYCLICAL VARIATION IN FINANCIAL STRUCTURE AND PRACTICES

Studies in this area should cover a long enough period of time to include at least the expansion of the late twenties, the depression of the early thirties, and developments since then. In view of the practical difficulties involved in attempting to compile sample data for earlier periods, principal reliance would have to be placed upon available published financial data, such as those in *Statistics of Income*. Despite the desirability of having complete sources and uses of funds time-series for various major industry/size groups of business concerns, limitations of *Statistics of Income* data may require the adoption of some more expedient alternative, such as a periodic repetition of the cross-section financial statement analysis used by Chudson.[17]

The approach envisaged here can probably best be illustrated by reference to actual data, and for this purpose the FTC/SEC series for all manufacturing corporations has been selected since 1) the data are of current interest, and 2) the information available from this source is roughly comparable with that contained in *Statistics of Income* for earlier years. Rather than deal with absolute dollar magnitudes, a number of the more significant financial statement ratios have been computed for various size groups of manufacturing corporations, as is shown in Tables 4, 5, and 6. The developments which they reflect may be summarized in the following manner.

[17] Chudson, *op. cit.*

Table 4

SELECTED INDICATORS OF LIQUIDITY POSITION OF MANUFACTURING CORPORATIONS IN VARIOUS TOTAL ASSET SIZE GROUPS, FIRST QUARTER, 1947-49[a]

LIQUIDITY POSITION	TOTAL ASSET SIZE (in thousands)				
	Under $250	*$250-999*	*$1,000-4,999*	*$5,000-99,999*	*$100,000 and over*
Curent Ratio (times)					
1947	2.4	2.5	2.5	2.8	3.2
1948	2.2	2.4	2.6	2.8	3.0
1949	2.3	2.7	2.8	3.0	2.8
Quick Ratio[b] (times)					
1947	.7	.7	.7	.8	1.1
1948	.6	.7	.7	.8	1.0
1949	.6	.7	.7	.8	.9
Ratio of Inventory to Total Current Assets (percent)					
1947	36.2%	40.3%	44.0%	46.3%	46.2%
1948	38.5	42.1	44.4	48.1	46.6
1949	37.5	43.6	47.1	48.9	48.0
Ratio of Sales to Receivables (times)					
1947	3.0	3.2	3.0	2.9	3.2
1948	3.0	3.1	3.0	2.9	3.4
1949	3.0	3.0	2.9	2.8	3.4

[a] Based on data from Federal Trade Commission/Securities and Exchange Commission, *Quarterly Industrial Financial Report Series*. Balance sheet data are those for the end of the first quarter 1947, 1948 and 1949; income statement data, those for the first quarters of the respective years.

[b] Cash and marketable security holdings divided by total current liabilities.

Liquidity Position

Small and medium-sized manufacturing companies were, generally speaking, in a somewhat less liquid position, as measured by the ratios of current assets and of cash and marketable securities to current liabilities, at end of first quarter 1947, than were the larger companies. On the other hand, the smallest size class of manufacturing corporation, which had the smallest proportion of current assets invested in inventories, would appear to have been in a more favorable position than the larger companies, had it not been for the continued rise in raw material and finished goods prices that occurred during the rest of 1947 and the first nine months of 1948. So far as collection experience on receivables was concerned, there was relatively little difference among manufacturing companies of various size at the beginning of the period under consideration.

During the remainder of 1947 and the first quarter of 1948, the

liquidity position of the smallest and largest size classes of manufacturing corporation declined moderately, while that of medium-sized companies changed relatively little. For the most part, the decline in liquidity reflected 1) substantial increases in federal income tax accruals on the part of the very large and profitable companies, 2) reduction of cash and marketable security holdings as funds were used for plant and equipment expenditures and investment in inventories, and 3) a marked growth in inventory holdings relative to total current assets. While a similar conversion of cash and marketable security holdings into inventory and plant and equipment occurred among medium-sized manufacturing companies, changes in their total current assets were more nearly proportionate to changes in their current debt.

During the last three quarters of 1948 and first quarter of 1949, all classes of manufacturing corporation but the largest experienced moderate improvement in their liquidity positions, the result of continued profitability of operation and gradual curtailment of inventory accumulation. In general, the range in current and quick ratios between the smallest and largest size class of manufacturing corporation was narrower after two full years of high level business activity and pronounced price rise than before, though most of the narrowing was due to a decline in liquidity position of large companies, rather than to any marked improvement on the part of small companies. Interestingly enough, the collection experience of small companies did not change over the period 1947-48; large companies, on the other hand, reduced their average collection periods somewhat, while medium-sized companies encountered some slowing down of their receivables turnover.

Operating Results

Despite the fact that the years 1947-48 were ones of record high level corporation profits, all size classes of manufacturing companies did not fare equally well. Relative to total assets, sales of the smallest and largest size classes remained relatively constant, while those of medium-sized companies declined. However, among all but the very large companies, costs and expenses rose sharply in relation to net sales, while net profits after taxes declined in relation to sales. To some extent, the rise in cost and expenses relative to sales reflected an influx of marginal producers among the smaller manufacturing companies, and to some extent, increased productivity and efficiency of high volume activity among the largest companies.

In this respect, it is interesting to compare the wartime experience of small companies with that of the postwar period. In a period of abnormal

Table 5

SELECTED INDICATORS OF OPERATING RESULTS OF MANUFACTURING CORPORATIONS IN VARIOUS TOTAL ASSET SIZE GROUPS, FIRST QUARTER, 1947-49[a]

OPERATING RESULTS	TOTAL ASSET SIZE (in thousands)				
	Under $250	*$250-999*	*$1,000-4,999*	*$5,000-99,999*	*$100,000 and over*
Ratio of Sales to Total Assets (percent)					
1947	58.8%	56.8%	50.4%	41.1%	30.7%
1948	58.4	55.5	47.9	40.2	34.2
1949	58.3	48.9	43.9	36.3	31.7
Ratio of Sales to Inventory (times)					
1947	2.5	2.1	1.7	1.4	1.2
1948	2.4	2.0	1.7	1.3	1.4
1949	2.5	1.8	1.5	1.2	1.3
Ratio of Cost and Expenses to Net Sales (percent)					
1947	92.5%	89.7%	87.1%	86.7%	87.8%
1948	96.2	91.8	90.2	88.4	86.4
1949	96.3	94.0	93.1	90.1	87.8
Ratio of Net Profit After Taxes to Net Sales (percent)					
1947	4.7%	6.2%	7.9%	8.0%	7.6%
1948	2.0	4.9	6.0	7.1	8.7
1949	2.4	3.5	4.0	5.9	7.8

[a] Based on data from Federal Trade Commission/Securities and Exchange Commission, *Quarterly Industrial Financial Report Series*. Balance sheet data are those for the end of the first quarter 1947, 1948 and 1949; income statement data, those for the first quarters of the respective years.

wartime demand, with controlled labor and raw material prices, the profitability of small company operation increased much more than that of large concerns, but with a return to peacetime competitive conditions and the relaxation of price controls, small companies in the aggregate soon found their costs of operation mounting more rapidly than their sales, whereas large companies discovered ways and means of holding operating costs constant in relation to sales volume.

The data on inventory turnover during the period first quarter 1947-first quarter 1948 reflect no change on the part of small companies, some improvement on the part of medium-sized companies, and a slight tendency for inventory holdings of large companies to rise in relation to their sales. Since postwar sales/inventory ratios for most lines of manufacturing and trade have been well below prewar levels, these data suggest that large companies were somewhat more successful in replenishing their war-

Table 6

SELECTED INDICATORS OF DEBT STRUCTURE OF MANUFACTURING CORPORATIONS IN VARIOUS TOTAL ASSET SIZE GROUPS, FIRST QUARTER, 1947-49[a]

DEBT STRUCTURE	TOTAL ASSET SIZE (in thousands)				
	Under $250	*$250-999*	*$1,000-4,999*	*$5,000-99,999*	*$100,000 and over*
Ratio of Net Worth to Debt (times)					
1947	2.1	2.1	2.1	2.3	2.5
1948	1.8	2.0	2.2	2.2	2.2
1949	1.9	2.4	2.6	2.4	2.2
Ratio of Short-Term Bank Loans to Total Current Liabilities (percent)					
1947	14.4%	16.1%	20.2%	16.7%	6.7%
1948	15.6	16.2	18.4	17.1	5.8
1949	15.4	16.1	18.8	15.6	8.9
Ratio of Current Liabilities to Total Liabilities (percent)					
1947	27.1%	27.6%	27.1%	23.0%	17.1%
1948	28.3	27.3	25.2	22.7	18.3
1949	26.3	23.2	22.5	20.4	18.3

[a] Based on data from Federal Trade Commission/Securities and Exchange Commission, *Quarterly Industrial Financial Report Series*. Balance sheet data are those for the end of the first quarter 1947, 1948 and 1949; income statement data, those for the first quarters of the respective years.

depleted stocks than were the small, and particularly the medium-sized, companies.

Debt Structure

During the period 1947-48 both small and large manufacturing companies expanded their short- and long-term debt more than their net worth, and their short-term bank debt relative to current liabilities. The reasons for the expansion of debt in relation to equity are not, however, the same for large and small companies. Throughout this period, large corporations were taking advantage of relatively low interest rates to borrow substantial sums from insurance companies and other institutional investors to finance replacement and expansion of their plant and equipment. Small companies, on the other hand, increased their short- and long-term debt only moderately, but additions to their net worth resulting from retained earnings were relatively much smaller than those of large companies, with the result that the modest expansion of their debt was still relatively larger than the growth of their net worth.

DETERMINATION OF LONG-TERM CREDIT AND EQUITY CAPITAL REQUIREMENTS

The need for reliable estimates of business requirements for, as distinguished from actual uses of, funds has prompted much of the research in business finance, as well as a number of Congressional committee investigations – all of which have produced relatively little in the way of satisfactory quantitative evidence. Since financial statements reflect what has happened rather than what might have happened under different circumstances, the most they can be expected to reveal are the more obvious results of inadequate financing of a type required by an individual business concern. Thus, if a particular concern has failed to expand its productive facilities or sales at a rate which is comparable to that of similar concerns, or if its debt structure is top-heavy in relation to net worth, it might be inferred that here is a case of inadequate equity capital financing. On the other hand, as revealed by Rosa's study of individual industrial loan (13b) applicants,[18] failure to expand or to maintain an appropriate financial structure may reflect inefficient or incompetent management rather than a chronic inability to obtain equity capital, either from sources outside the business or through reinvestment of earnings.

In all probability, the only basis for estimating the character and magnitude of small and medium-sized business requirements for long-term credit and equity capital will be the replies obtained from questioning a scientifically selected sample of business concerns. For this purpose, some adaptation of the Federal Reserve-Survey Research Center questionnaire/interview technique is most likely to yield acceptable results. In addition to obtaining answers to such questions as "What type and amounts of funds are needed and upon what terms and conditions?" and "For what purposes are the funds required?" such a survey should provide for the collection of information essential to a proper evaluation of the replies. Without attempting a detailed listing of such supplementary information, it may be observed that it should cover such general areas as 1) the concern's organization, location, affiliations, products or services, and markets; 2) history of its development, including method of acquisition by present owner and initial sources of capital; 3) duties and capacities of present management, as indicated by training and experience of officers and the utilization of professional and technical assistance; 4) recent financial experience, including details of unsuccessful attempts to obtain long-term debt or equity

[18] Robert V. Rosa, "Small Business and Depression," *Harvard Business Review*, January 1948.

financing, and 5) future plans and prospects for expansion, amount and type of financing required, and method of financing contemplated.

The mere fact that more adequate data on the long-term credit and equity capital requirements of small and medium-sized business concerns are needed does not assure the launching of an ambitious program for collecting such information. Aside from the technical difficulties of constructing and testing a questionnaire and interview that are adequate for the purpose, and of selecting a valid sample of business concerns to be interviewed, there is the matter of cost.

The Federal Trade Commission has been spending nearly $100,000 a year in assembling (by mail questionnaires) and tabulating financial statements for its sample of small and medium-sized manufacturing corporations, and has estimated that it will require an additional $200,000 to broaden the coverage of its quarterly surveys to include wholesale and retail trade corporations. Contract payments by the Board of Governors of the Federal Reserve System to the Survey Research Center in connection with its consumer finance surveys amount to nearly $130,000 a year, not including the salaries of Board staff members assigned to this project. Moreover, the Federal Trade Commission studies are limited to corporations and the Survey Research Center's sample is of relatively small size. Thus, it is readily apparent that a scientific sampling of the expectations and requirements of the entire business population would represent a financial undertaking of major proportions.

Some direct sampling of the small business population by means of interviews or questionnaires might be undertaken by various university, financial and business research groups. Since any individual program of this sort would of necessity be limited in scope and coverage, there is a real need for careful coordination of such programs to provide the maximum amount of information and avoid needless duplication of effort. Particular care should be exercised to ensure the collection of information that would supplement, rather than duplicate, the financial statement data that are already being collected and published by the Federal Trade Commission and the Securities and Exchange Commission.

It is conceivable that a coordinated program of research might be developed whereby universities in various sections of the country could collect information about small and medium-sized business in their respective localities. The success of such a program would depend largely upon the quality of planning and preparation and upon centralized control and coordination to assure uniformity and comparability of the data collected. To this end a business financial research planning and advisory committee might be established under qualified auspices to do the following things:

1) Evaluate the capacities of university research groups for participation in a program of collecting and analyzing information on the capital and credit requirements of small and medium-sized business concerns.

2) Develop and test, by means of a pilot operation, a satisfactory schedule to be used by field interviewers in the collection of data.

3) Prepare a manual of instructions for training and information of interviewers.

4) Work out appropriate methods for sampling the small and medium-sized business population with due regard for the facilities of the cooperating universities.

5) Supervise the conduct of field surveys and provide technical assistance wherever needed.

DISCUSSION:

ROBERT V. ROSA, *Federal Reserve Bank of New York*

By way merely of supplementary observations suggested by Mr. Schmidt's excellent paper, I should like to comment on three points: 1) the technique of sources and uses analysis, 2) the problem of obtaining useful data, and 3) the use of this type of analysis in attempting to determine whether or not there is a substantial unsatisfied need for equity capital among smaller businesses.

1

As developed by Mr. Schmidt and others over the past several years, the sources and uses of funds methodology is concerned with the net change in principal balance sheet items from one statement date to another. Supplementary information from the income statement is similarly used on a net basis. It follows from this "net approach" that the sources and uses technique can be no more than a starting point in isolating the major influences upon the flow of funds through an individual concern or a sector of the business community.

Necessarily, there must be a wide range of variation between statement dates, both in the flow of funds required and in the flow made available; these variations cannot, of course, be discovered by an examination of net changes. Thus, for example, a concern whose inventories appear the same from one statement to another, and whose bank and trade indebtedness is

similarly unchanged, may nonetheless be dependent at times during the intervening period upon a much larger volume of inventories and of current indebtedness. It would be impossible to deduce the full operating requirements of any concern from a sources and uses analysis alone, or to determine whether bank and trade credit was available in adequate amount as critical needs arose.

The inherent limitation of a sources and uses analysis do not by any means, however, imply that the technique is unimportant. So long as its limitations are recognized, the sources and uses methodology can provide a meaningful indication of fundamental structural changes in the assets and liabilities of business concerns. The next step toward a thorough analysis of financial behavior must be the detailed case study of individual concerns. Case studies do not, of course, lend themselves to the elegance of aggregative statistics, but they can provide a necessary rounding out of such types of financial research as that undertaken by Mr. Schmidt in his paper.

2

Mr. Schmidt has rightly stressed the inadequacy of available data for smaller concerns, whether incorporated or unincorporated. It becomes essential, therefore, to explore all of the nooks and crannies where potential data may now be lying unused. One of these may be the materials assembled by the Accounting Corporation of America, which has recently begun to provide uniform bookkeeping and accounting services on a fee basis for a large number of smaller concerns whose own accounting facilities are inadequate. Data for several thousand firms have now been assembled by this corporation, which prepares monthly, quarterly and annual balance sheets and income statements, and makes use of IBM machinery. It might prove, if one were moved to explore these data, that information already in existence on punched cards could be fruitfully processed to summarize the characteristics of a number of narrowly classified industry and size groups.

It might also be feasible to obtain data for particular time periods not covered by other available data, or to take advantage of the relatively early appearance of these records for advance testing of current developments before more comprehensive tabulations are prepared. Of course, the concerns subscribing to services of this kind would not represent a random sample from the business population, but experimentation with the data might provide questions and possible benchmarks for use in working with other materials.

3

Mr. Schmidt and several other participants in this conference have suggested that one of the most immediate uses for research in business finance lies in attempting to answer the old question of the adequacy of equity capital for small business. I doubt, however, whether the application of the sources and uses technique to aggregative data can be more than a feeble first step toward approaching an answer. As has been pointed out, the variation among individual concerns making up any of these aggregative groups is extremely wide. For this reason, it might prove that the second step in beginning to study the adequacy of equity capital would be to extend the sources and uses analysis to a fairly large number of individual concerns. The scatter of these concerns around a central tendency indicated by the aggregative data might then provide a basis for selecting some individual concerns for detailed case studies.

But I have a feeling that even after completing the case studies as a third step, we would not have a wholly satisfactory appraisal of the equity capital position of smaller concerns. It seems to me, and this impression is buttressed by some exposure to the industrial loan program carried out by the Federal Reserve Bank of New York, that there are a host of important qualitative factors in the position of any individual concern that do not reveal themselves during the detached (and more or less distinterested) investigation of a research study, or of a questionnaire. The full fusing of all aspects of managerial competence and the formal accounting record of a concern, into a single composite picture of the concern's need for and ability to use equity capital, is only brought about through an investigation that has the vitality of "the real thing." For that reason, I do not believe that we will ever settle the question, even to our own satisfaction as research analysts (wholly apart from what may satisfy Congressmen and the public), until a pilot experiment in equity financing is conducted. It goes without saying that such an experiment must be kept in the hands of qualified credit and investment analysts, and that it would not serve its purpose if it degenerated into a relief project for the weaker small businesses. But it is only through an acid test, I believe, that we can ever achieve a fully realistic appraisal of the equity capital requirements and capabilities of small business in the United States.