Volume Title: The Pattern of Corporate Financial Structure: A Cross-Section View of Manufacturing, Mining, Trade, and Construction, 1937

Volume Author/Editor: Walter A. Chudson

Volume Publisher: NBER

Volume ISBN: 0-870-14135-X

Volume URL: http://www.nber.org/books/chud45-1

Publication Date: 1945

Chapter Title: Current Liabilities

Chapter Author: Walter A. Chudson

Chapter URL: http://www.nber.org/chapters/c9212

Chapter pages in book: (p. 46 - 66)

·4·

CURRENT LIABILITIES

NOTES PAYABLE

THE INFORMATION ON NOTES PAYABLE which appears in *Statistics of Income for 1937* is of particular interest to both students of banking and students of financial structure, for it provides data on notes payable distributed by industry, size, and profitability.[1] For each of these classifications, we can obtain the dollar volume of notes payable, and we can also measure their importance in relation to other liabilities and assets as well as to sales. It is impossible to obtain such comprehensive data from available banking statistics, although a survey of new commercial loans and renewals during the period April 15-May 15, 1942, made by the Board of Governors of the Federal Reserve System, has helped to fill in this statistical gap.

The 1937 classification of current liabilities, which separates notes payable from accounts payable, provides for an item described as "bonds, notes, and mortgages payable (with original maturity of less than 1 year)."[2] Since bonds and mortgages with original maturity of less than one year are very rare, this item may be considered entirely as notes payable. However, it may include not only notes payable to banks but also notes payable to other financial institutions, to trade creditors, and, among small corporations, to officers, directors, and other individuals. Except in the case of the smallest corporations, with assets of less than $100,000, a safe assumption seems to be that notes payable are due primarily to commercial banks.[3] On the other hand, notes payable

[1] Although notes payable were classified separately by the Bureau of Internal Revenue from 1924 to 1927 inclusive, they were not presented in the threefold classification given for 1937. From 1928 to 1936 inclusive, they were combined with accounts payable.

[2] See the facsimile of Corporation Income and Excess-Profits Tax Return (Form 1120), given in *Statistics of Income for 1937*, Part 2, p. 236.

[3] Although the Internal Revenue data shed no light on the types of notes payable, a sample of balance sheets of 745 large manufacturing corporations for 1938 and 1939, collected by the Federal Trade Commission, provides some information on the

exclude certain forms of corporate indebtedness to banks, particularly term loans, which are repayable in whole or in part after the lapse of more than one year, and thus underestimate the volume of corporate indebtedness to banks. Term loans, a fairly recent development in banking practice, are likely to be classified with "bonds, notes, and mortgages payable (with original maturity of 1 year or more)," the basis being original, not current, maturity.[4] In the following discussion bonds, notes, and mortgages payable with original maturity of less than one year will be referred to as "notes payable."

Industrial Variations

On or about December 31, 1937 the notes payable of all corporations totaled $10,400,000,000, or 47 percent of the total loans of all banks. Of this total, $6,700,000,000, or 30 percent of all bank loans, represented the short-term borrowings of nonfinancial enterprises.[5]

Distribution of the total volume of notes payable among the various industrial divisions is presented in Table 4. Borrowings of financial corporations, including real estate and personal finance, represented 36 percent of the total—the largest for any one industrial division. Manufacturing accounted for 25 percent, trade

---

volume of notes payable due to banks in comparison with those due to trade creditors. Ninety-four percent of all notes payable are due to banks. Notes payable to trade creditors, which occurred in 35 industries of a total of 73, represented only 0.1 percent of the total assets for all corporations in the sample and only 6 percent of the total volume of notes payable. See Industrial Corporation Reports, Federal Trade Commission, 1941. These reports are in the form of aggregate balance sheet and income statements for narrowly defined industrial groups.

[4] Term loans outstanding as of December 31, 1937 were estimated at $827,000,000 on the basis of a sample study made by the Financial Research Program. More than half of these loans were made to corporations with assets over $50,000,000, and nearly 96 percent to borrowers with assets over $1,000,000. Industrially, nearly 60 percent of bank term loans has gone to mining and extraction (including oil production), public utility, and financing concerns, and only 30 percent to manufacturing concerns of all kinds.

[5] The notes payable of unincorporated enterprises (retail trade for the most part) cannot be measured directly but may be estimated by using data on the relative volume of sales of incorporated and unincorporated enterprises as given in the *Census of Manufactures* and the *Census of Distribution*. On this basis, there were $2,600,000,000 of notes payable in unincorporated enterprises in 1937. An attempt was made to obtain an estimate by deducting total notes payable of corporations from Federal Reserve Board statistics giving the total volume of "commercial loans" outstanding, but the latter are apparently defined too narrowly to permit such a method of estimating.

Table 4—DISTRIBUTION OF NOTES PAYABLE FOR INCOME AND DEFICIT CORPORATIONS COMBINED, 1937, BY INDUSTRIAL DIVISIONS[a]
(in millions)

Industrial Division	*Notes Payable*
ALL MANUFACTURING	*$2,593*
Food and Kindred Products	*381*
Bakery products	54
Canned products	129
Mill products	34
Packing house products	52
Sugar refining	33
Other food	79
Liquors and Beverages	*131*
Soft drinks	10
Liquors	121
Tobacco Products	*62*
Textile Mill Products	*248*
Cotton goods	66
Woolens and worsteds	28
Silk and rayon	19
Carpets	20
Textiles, not elsewhere classified	83
Knit goods	32
Clothing and Apparel	*93*
Leather and Manufacturing	*81*
Boots, shoes	35
Other leather products	46
Rubber Products	*54*
Tires and tubes	41
Other rubber products	11
Bone, celluloid, etc.	2
Forest Products	*140*
Sawmill products	80
Other wood products	60
Paper, Pulp, and Products	*$ 76*
Printing and Publishing	*120*
Chemicals and Allied Products	*178*
Chemicals proper	40
Paints, varnishes	20
Allied chemicals	109
Fertilizers	9
Petroleum and Other Oil Products	*203*
Stone, Clay, Glass	*62*
Metals and Products	*641*
Household machinery	24
Iron and steel	175
Locs. and r.r. equipment	11
Factory machinery	35
Agricultural machinery	29
Electrical machinery	63
Miscellaneous machinery	78
Office equipment	13
Metal building materials	54
Hardware	49
Precious metals	19
Other metals	91
Motor Vehicles	*38*
Other Manufacturing	*85*
Radios	10
Musical instruments	62
Airplanes	13

(concluded on next page)

for 16 percent, and transportation and public utilities for 11 percent. Among the manufacturing corporations the largest borrowers were the metals, foods, petroleum and other oil products, and textiles groups.

Since the chief use of bank loans is to aid in increasing the rate of industrial activity, the distribution of notes payable on any particular date reflects not only the cyclical fluctuations of differ-

Table 4 (concluded)—DISTRIBUTION OF NOTES PAYABLE FOR INCOME AND DEFICIT CORPORATIONS COMBINED, 1937, BY INDUSTRIAL DIVISIONS[a]
(in millions)

Industrial Division	*Notes Payable*	*Industrial Division*	*Notes Payable*
SHIPBUILDING	$ 8	Autobus lines	$ 21
CONSTRUCTION	*131*	Cartage and storage	64
Building and construction above ground	51	Electric light	218
Other construction	80	Gas	188
MINING AND QUARRYING	*386*	Pipe-line	37
Metal mining	46	Telephone and telegraph	43
Anthracite	35	Broadcasting	5
Bituminous coal	60	Water	32
Oil and gas	180	Terminals, etc.	30
Other mining	22	SERVICE	*609*
Mining and quarrying, not elsewhere classified	43	Domestic service	441
TRADE	*1,672*	Theaters	3
Wholesale	681	Motion picture prod.	23
Retail	541	Motion picture theaters	33
Wholesale and retail	331	Other amusements	22
Commission merchants	86	Professional service	53
All other trade	33	Business service	16
TRANSPORTATION AND PUBLIC UTILITIES	*1,104*	Other services	18
Steam railroads	293	FINANCE, INCLUDING BANKS	*3,713*
Electric railways	121	AGRICULTURE	*145*
Water transportation	47	NATURE OF BUSINESS NOT GIVEN	*12*
Aerial transportation	5	GRAND TOTAL	*$10,373*

[a] Based on data, as of December 31, 1937, from *Source Book of Statistics of Income for 1937* and *Statistics of Income for 1937*, Part 2.

ent branches of industry but also seasonal characteristics and other dynamic factors. It is regrettable that no comparable data on notes payable are available prior to 1937 to enable us to appraise adequately the extent to which the particular characteristics of cyclical fluctuations in the various branches of the economy affect the distribution of bank loans. Another serious limitation of the available data is that the figures cannot be adjusted for seasonal fluctuations in borrowing. The borrowings outstanding on the balance-sheet date are probably lower than the annual average in most cases, but lack of comprehensive monthly or quarterly data

prevents an appraisal of the extent to which apparent industrial differences reflect different seasonal patterns.[6]

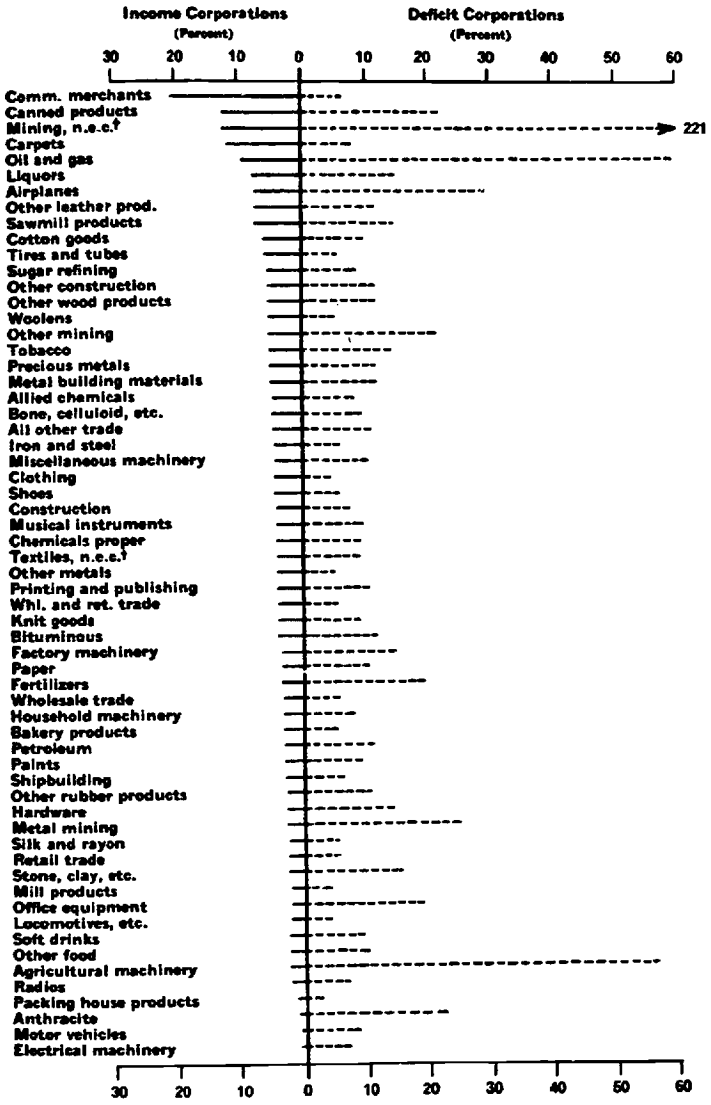
The outstanding feature of the differences among industries in the turnover of notes payable is the narrow absolute range within which the ratios for the majority of minor industrial divisions fall (Chart 5). In most cases, notes payable are less than 5 percent of sales; and the range between the first and third quartiles is only 1.8 percentage points for income and deficit concerns combined.

Industrial variations in the degree of utilization of short-term credit are even more difficult to "explain" than are industrial variations in the turnover of inventory and receivables. The ratios for minor industries within such major industrial groups as food, textiles, chemicals, and metals do not tend to cluster together; and no general relationship is apparent between the characteristic features of the industrial divisions and their reliance upon bank borrowing. The ratio for total manufacturing differs little from that of trade as a whole, but within the divisions of both manufacturing and retail trade there are wide variations. The turnover in retail trade is about twice as rapid as in wholesale trade. The fact that the correlation of the rankings of income and deficit corporations of the minor industrial divisions is very low suggests that the shift from an income to a deficit classification is sufficiently strong to override any "industrial" differences. Further analysis reveals that the industrial rank according to this ratio is related neither to the average asset size nor to the profitability of the minor industrial divisions. Also, classification into producers' and consumers' goods industries does not reveal significant differences in the average value of the notes payable/sales ratio.

In several respects the behavior of the ratio of notes payable to total assets contrasts with that of notes payable to sales. In the former case, the ranking of income and deficit corporations in the minor industrial divisions is moderately similar, indicating that even with substantial differences in the level of profitability, the importance of notes payable relative to the other liabilities remains approximately the same. Comparison of the average ratio of notes payable to total assets for consumers' and for producers'

[6] While the monthly series of commercial loans for reporting member banks, compiled by the Board of Governors of the Federal Reserve System, shows no pronounced seasonal variation, it must be appreciated that the series reflects the combination of many industries, some of which have a definite seasonal pattern.

Chart 5—Ratio of Notes Payable to Sales for Income and Deficit Groups of Minor Industrial Divisions, 1937*



*Based on data from *Source Book of Statistics of Income for 1937*. For composite of income and deficit corporations, see Data Book (National Bureau of Economic Research) Table C-28.

†Not elsewhere classified.

goods industries reveals a significant difference between the two groups: the ratio for consumers' goods industries is considerably higher than that for producers' goods. Finally, the less profitable industries and those of relatively small average asset size seem to have a fairly high proportion of notes payable, indicating that "industrial" characteristics alone do not account for differences in the ratio among the minor industrial divisions.

Since data for notes payable are not available prior to 1937, a comparison of the stability of the industrial rankings between 1937 and 1931 is impossible. A comparison may be made, however, for notes and accounts payable combined, as a percentage both of assets and of sales. In each case the 1931 industrial rankings are strongly similar to the 1937 rankings. Unless the movements of notes payable compensated for those of accounts payable during this period, or vice versa, a reasonable conclusion is that industrial differences in the two components are stable over short periods of time.

The suggestion has often been made that variations in inventory holdings may provide a key to the explanation of industrial variations in notes payable. The validity of this hypothesis depends upon whether sales or total assets are taken as the basis of comparison. The correlation of the industrial rankings of the notes payable/sales ratio with the inventory/sales ratio is below the level of statistical significance. On the other hand, a moderate degree of correlation is evident between the rankings of the ratio of notes payable to total assets and the inventory/total assets ratio. In other words, industries with relatively large (or small) investments in inventory tend to derive a relatively large (or small) proportion of their current funds from banks, although the turnover of inventory and that of notes payable are not significantly related.

Because of the small proportion which notes payable form of sales and total assets, the relative variations of notes payable both to sales and to total assets are as large as those of other working capital components. The smallness of the absolute variations, however, suggests that industrial differences in bank borrowings, while important from the point of view of the lender's opportunity, may not reflect a significant change in borrowing policy

from the point of view of an individual corporation or of an industry as a whole.

Variations with Corporate Size

"Small business," with assets under $250,000, accounts for 22.3 percent of short-term indebtedness in the form of notes payable among nonfinancial corporations (Table 5); corporations with assets of between $250,000 and $5,000,000 account for 38.4 percent; and "big business," corporations with assets of $5,000,000

Table 5—Dollar Volume and Percentage Distribution of Notes Payable for Nonfinancial Corporations, 1937, by Asset Size[a]
(dollar figures in thousands)

Size[b]	*Income Corporations*	*Deficit Corporations*	*All Corporations*	
			Volume	Percentage Distribution
Under $50	$128,601	$313,782	$442,383	6.6
50–100	167,383	207,269	374,652	5.6
100–250	338,925	332.240	671,165	10.1
250–500	318,837	264,526	583,363	8.8
500–1,000	323,141	285,610	608,751	9.1
1,000–5,000	816,081	546,986	1,363,067	20.5
5,000–10,000	291,703	217,786	509,489	7.7
10,000–50,000	627,854	292,550	920,404	13.8
50,000–100,000	216,980	116,825	333,805	5.0
100,000 and over	533,959	318,418	852,377	12.8
Total	$3,763,464	$2,895,992	$6,659,456	100.0

[a] Based on data, as of December 31, 1937, from *Statistics of Income for 1937*, Part 2.
[b] Inclusive of the lower limit and exclusive of the upper.

and over, for 39.3 percent. Thus a little more than 60 percent of the total volume of notes payable represents the indebtedness of small and medium-sized corporations, although in this group is included only 30 percent of the total assets and 53 percent of the total sales of all nonfinancial corporations.

Variations in notes payable among corporations of contrasting size differ sharply according to the basis of comparison. In general, variations in the ratio of notes payable to total assets present a more systematic and more easily explained pattern than variations in the ratio of notes payable to sales.

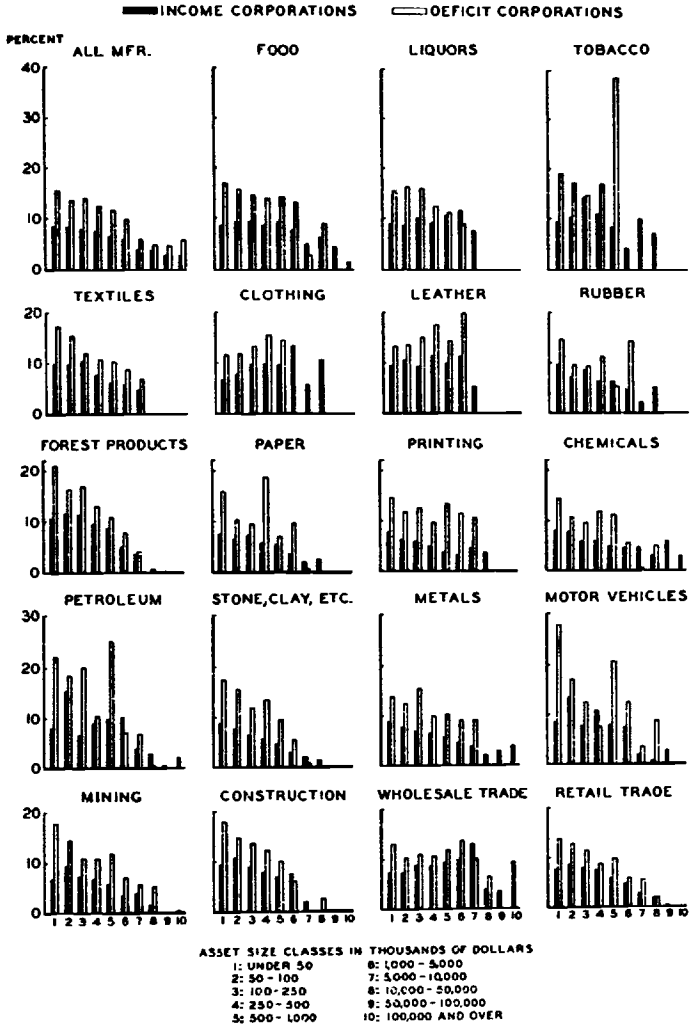
Notes payable as a percentage of sales vary with corporate size

in a predominantly erratic way. (See Table C-21 in Data Book.) Furthermore, little similarity is evident between the variation of the ratios for income and deficit corporations in the same major industrial division. Despite the numerous reversals of direction in the movements of the ratios, however, the ratios for large corporations, with assets over $5,000,000, in a number of groups are at approximately the same levels as those for small corporations, with assets less than $250,000. Medium-sized corporations, with assets between $250,000 and $5,000,000, tend to have higher ratios than either large or small concerns. This general pattern is found in manufacturing as a whole and also in trade. When considered in conjunction with the systematic variations with corporate size of the ratios of receivables and of inventory to sales, it throws some light on the interrelationships of these working capital components. Current liabilities have customarily been considered as bearing a fairly close relationship to current assets, although the nature of this relationship and its basis have seldom been stated precisely. On the basis of ratios to sales, the data studied here indicate that the relatively substantial volume of inventory holdings and receivables of the large corporations are not financed by a proportionately high volume of notes payable, but are supported primarily by funds represented by net worth.[7] The absence of a close parallel between the variations of notes payable as a percentage of sales and the current assets to which they are hypothetically related also reflects the fact that the volume of short-term borrowings is subject to the somewhat arbitrary decisions of the firms making up the size groups in each industry. Only in short periods of relatively rapid change in the working capital assets (associated with seasonal and cyclical fluctuations) is there likely to be a close relationship between changes in notes payable and changes in the current assets.

The ratio of notes payable to total assets follows a more systematic pattern than the notes payable/sales ratio, although even in this form notes payable show more erratic tendencies than the

[7] Two qualifications to this statement are in order. First, the matching of "sources" of funds with "uses" is largely upon a formal plane, and does not necessarily imply that specific sources of funds are devoted to the acquisition of certain assets or the reduction of certain liabilities. Second, the above conclusion is based upon a static, cross-section analysis and does not deny that *changes* in working capital accounts may be intimately related.

Chart 6—Ratio of Notes Payable to Total Assets for Income and Deficit Groups of Major Industrial Divisions, 1937, by Asset Size*



*Based on Table C-19 in Data Book (National Bureau of Economic Research). Wholesale and retail trade figures are for the year 1938.

other major working capital components (Chart 6). The preponderant tendency is for the notes payable/total assets ratio to decline as size of corporation increases, although in very few of the major industrial groups is this behavior consistent from size class to size class, and in several cases it is not found at all.[8] The movements of the ratio often differ as between income and deficit concerns, and the range of variation is usually larger among the deficit concerns. The downward movement among the large-sized corporations in the proportion of notes payable to total assets indicates that the larger corporations take advantage of their greater access to long-term investment markets and of the reinvestment of earnings as a source of funds.

Variations with Profitability

Of the $6,700,000,000 of notes payable outstanding in the balance sheets of nonfinancial corporations at the end of 1937, $3,800,000,000 were payable by income and $2,900,000,000 by deficit concerns. When considered as a proportion of total assets or of sales, however, notes payable are substantially smaller among income than among corresponding deficit corporations. (See Charts 5 and 6.) Profitable concerns, finding alternative sources of financing more readily available, take advantage of such opportunities to reduce their short-term indebtedness. Considerations of relative cost and of convenience combine to produce this result, once the necessary condition—availability of alternative sources of funds—is present. This does not deny that in short-period variations of the level of business the more profitable concerns may finance their incremental working capital requirements by short-term borrowing to a greater extent than the deficit concerns. But the average level of their borrowings tends to be lower.

A comparison of industrial variations in notes payable ratios with industrial differences in profitability shows that generally the profitability differences are not sufficient to dominate the industrial character of short-term borrowings. An exception is found in the ratio of notes payable to total assets among deficit

[8] The variation is particularly erratic in liquors and beverages, tobacco, clothing, and leather. This is partially due to the presence within the major groups of concealed minor industrial divisions of varying asset sizes.

concerns in which there is an inverse relationship between the proportion of notes payable and the level of profitability. This appears to reflect not so much an active policy with respect to short-term borrowing, but rather the "passive" effect of variations in the major liability component, net worth, which are extreme in the case of minor industrial divisions in the deficit category. The net worth of the less profitable divisions in the deficit group is so shrunken that the notes payable are, in proportion, greatly enlarged.

Size variations in the ratio of notes payable to total assets are not found to be related to profitability. Among size classes no sign of relationship is evident between the movements of the ratio of notes payable to sales and those of net income to net worth. While the notes payable/total assets ratio shows systematic variations with size that are similar in the income and deficit divisions, the variations in profitability are distinctly different in the two groups.

Borrowing and Nonborrowing Corporations

The Internal Revenue data do not permit a classification of corporations according to whether or not they have notes payable in their balance sheets. When comparing one class of corporations with another, it is impossible to tell, for example, whether a comparatively low ratio of notes payable to total assets is the result of a small percentage of notes payable among all the firms in that group, of a small percentage of borrowing concerns, or of both. For corporations with assets of more than $1,000,000, some light is thrown on this question by data in *Statistics of American Listed Corporations*. The number of firms with notes payable in their balance sheets is probably lowest on or about the date to which the balance sheets refer, since that date very likely marks the seasonal low point for borrowings. Table 6 reveals that differences in the relative frequency of notes payable among the major divisions of manufacturing and several other broad industrial groups are not, in most cases, widely dispersed about the average frequency for all corporations as a whole, which is 42 percent.

The relative frequency of notes payable shows no systematic variation with corporate size, except in the case of merchandising concerns, which exhibit some tendency toward an inverse variation

Table 6—RELATIVE FREQUENCY OF NOTES PAYABLE FOR LISTED CORPORATIONS, 1937, BY INDUSTRIAL GROUPS[a]
(in percent)

Industry	*Frequency*
All corporations	42.1
All manufacturing	43.7
Food	45.5
Tobacco	52.4
Beverages	53.6
Textiles	49.2
Lumber	75.0
Paper	44.4
Printing and publishing	37.5
Chemicals	38.7
Petroleum refining	47.4
Rubber	52.9
Leather	61.1
Building materials	30.9
Iron and steel	38.0
Nonferrous metals	47.2
Machinery and tools	41.1
Transportation equipment	46.0
Merchandising	45.0
Chain stores	36.1
Department stores	42.1
Extractive	30.4
Utilities	54.0

[a] Based on data, as of December 31, 1937, from *Statistics of American Listed Corporations*, Part 1, Table 63, p. 212.

(upper half of Table 7). In marked contrast to the behavior with respect to size, a strong inverse relationship is seen between the frequency of borrowing and profitability (lower half of Table 7). This inverse relationship is a particularly interesting parallel to that of the ratios of notes payable to total assets and to sales, which are greater among deficit than among income corporations.

ACCOUNTS PAYABLE

In the preceding chapter we considered variations among different classes of corporations with respect to the extension of trade credit. Here we are concerned with the distribution of trade credit from the point of view of the recipient. There is not perfect correspondence between the accounts receivable and the accounts pay-

Table 7—Relative Frequency of Notes Payable for Major Industrial Groups of Listed Corporations, 1937, by Asset Size and by Profitability[a]
(in percent)

Total Assets[b] (in millions)	*Frequency*			
	Manufacturing	Merchandising	Extractive	Utilities
	Size			
Under $1	48.3	73.7	30.1	...
1- 3	43.1	43.3	41.9	.0
3- 5	44.7	51.6	20.0	...
5- 10	51.5	48.4	15.4	50.0
10- 20	37.2	38.5	22.7	37.5
20- 50	36.7	38.9	43.8	25.0
50-100	37.5	10.0	33.3	50.0
100-200	50.0	.0	100.0	50.0
200-500	42.9	.0	...	100.0
500 and over	40.0	...	...	72.2
	Profitability			
Net Profit or Loss on Invested Capital[b] (in percent)				
Net Loss				
10 and over	65.5	100.0	48.1	...
5-10	84.6	100.0	33.3	...
2- 5	50.0	80.0	41.7	...
0- 2	57.7	37.5	33.3	...
Net Profit				
0- 2	54.3	50.0	20.0	...
2- 5	53.1	61.1	37.0	64.0
5-10	42.1	42.6	23.1	46.7
10-20	44.8	37.3	9.1	75.0
20 and over	29.2	31.6	22.7	...

[a] Based on data, as of December 31, 1937, from *Statistics of American Listed Corporations*, Part 1, Tables 64 and 65, p. 224.
[b] Inclusive of the lower limit and exclusive of the upper.

able of all nonfinancial corporations, since the group as a whole is a net creditor in this respect. At the end of 1937, nonfinancial corporations had outstanding $15,600,000,000 of receivables and $12,100,000,000 of accounts payable, showing that they were extending $3,500,000,000 of trade credit to the noncorporate economy, most of it, presumably, in the form of trade credit to unincorporated retailers.

As in the case of receivables, the volume of accounts payable outstanding at any time depends on the proportion of sales which

are financed by trade credit and the average length of time for which that credit is extended. A change in either factor will affect the proportion of accounts payable; therefore, data on the turnover of payables must be interpreted with this fact in mind.

Industrial Variations

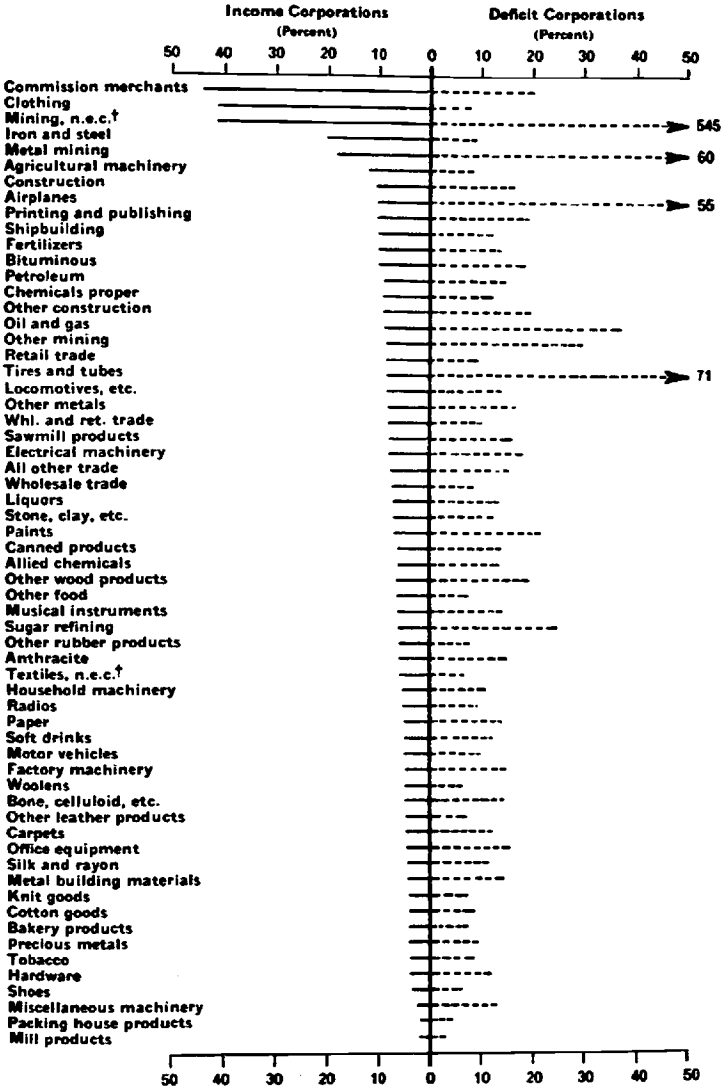
The range of variation among industries for the ratio of accounts payable to sales closely resembles that of the ratio of receivables to sales. (Compare Charts 4 and 7.) For income and deficit corporations combined, the lower and upper extremes of the accounts payable/sales ratio are 3 and 23 percent, respectively; the central half of the distribution lies between 6 and 11 percent; and the median value is 8 percent.[9] (See Table C-28 in Data Book.) In most branches of industry, accounts payable are a more important source of short-term credit than notes payable. The relative importance of the two items varies from industry to industry, with the difference being particularly strong in wholesale and retail trade, where accounts payable are about twice as large as notes payable in relation to sales.[10]

The heaviest users of trade credit in relation to volume of sales include commission merchants and the clothing, mining and quarrying, construction, airplane production, printing and publishing, and iron and steel industries. At the other end of the scale are such industries as mill products, packing house products, tobacco, boots and shoes, knit goods, office equipment, and hardware. Among the possible general explanations of the varying degree to which trade credit is used, the length of the processing period is the most probable, although it clearly cannot account for the high ratios of commission merchants and the clothing industry. The longer the processing period, the more likely is an industry to depend upon credit from the suppliers of its raw and semi-finished materials. The degree of reliance upon such financing should also be greater among non-integrated than among integrated enterprises.

[9] Commission merchants and unclassified mining and quarrying corporations, which have extremely high ratios, are excluded.

[10] It is essential to note that these data refer only to the year-end and may not be an accurate representation of the average relationship for the entire year. However, seasonal variations are not likely to explain the generally higher ratios of accounts payable to sales.

Chart 7—Ratio of Accounts Payable to Sales for Income and Deficit Groups of Minor Industrial Divisions, 1937*



*Based on data from *Source Book of Statistics of Income for 1937*. For composite of income and deficit corporations, see Data Book (National Bureau of Economic Research) Table C-28.

†Not elsewhere classified.

The closest approach to a test of the importance of these factors in relation to the turnover of accounts payable is through a classification of industrial divisions according to producers' and consumers' goods. To a limited extent, this procedure approximates a classification according to the length of the processing period, producers' goods industries having on the average a longer period. The producers' goods industries are also more integrated vertically, on the average. Both these tendencies should make for a greater volume of accounts payable in relation to sales among the producers' industries than among the consumers' industries, and the data confirm this. The use of trade credit by producers' goods industries, which have an average ratio of payables to sales of 9 percent, is significantly greater than the use by consumers' goods industries, which have an average ratio of 6.5 percent.

The extension of trade credit by manufacturing to wholesale and retail trade calls for special comment. In terms of total assets, wholesale and retail trade rely on trade credit to a greater extent than any division of manufacturing. Nevertheless, the turnover of merchandise is so great among trading corporations that the turnover of accounts payable (the balance-sheet ratio that corresponds to the turnover of merchandise) is as rapid as in most branches of manufacturing.

In retail trade, the average length of time during which goods are held in stock corresponds to the period of processing in manufacturing, and the effect of the length of this period on the turnover of payables can be seen in different branches of retail trade. (See Table C-30 in Data Book.) Department stores (including general merchandise and furniture and house furnishings) have a higher ratio of accounts payable to sales (i.e., a lower turnover) than such branches as food, drugs, apparel, and eating and drinking places. Obviously, institutional arrangements as well as the length of the period for which goods are held or processed affect the extent to which trade credit is used. That is, a thorough explanation of industrial differences would require an analysis of the supply as well as the demand for trade credit. The relationship between the supply of trade credit and alternative forms of credit also would have to be considered. To some extent, these factors have already been dealt with in the discussion of receiv-

ables. For example, dealers in autos, accessories, etc., probably keep their stock for as long a time, on the average, as department stores, yet they have a much smaller volume of payables in relation to sales, which indicates different institutional arrangements in the case of auto manufacturers than in the case of manufacturers of department store merchandise with respect to the extension of trade credit. The extension of greater facilities of trade credit to department stores in turn probably reflects their higher credit rating, based on a considerably higher profit rate, particularly among the medium-sized and large concerns. Of course, all such interpretations of industrial differences are subject to the qualification that seasonal differences at the year-end may, to some extent, be the basis for apparent industrial differences.

An examination reveals that industrial variations in the ratio of accounts payable to sales are not significantly related to industrial differences either in average asset size or in average profitability. (See Appendix D.) While these factors may be related to the use of trade credit, other elements obscure their effect among industrial divisions.

The similarity between income and deficit concerns in the industrial rankings of the accounts payable/sales ratio is moderately significant. Apparently industrial differences are sufficiently strong so that they are not upset by differences in the level of profitability of corporations in the same industrial division. As in the case of notes payable, a comparison of 1937 and 1931 data is not possible, since notes and accounts payable were combined in the earlier year. In the study of notes payable above, however, we observed a high degree of similarity in the industrial rankings of the ratio of notes plus accounts payable to sales in the two years.

Variations with Corporate Size

The turnover of accounts payable, like that of notes payable, shows no systematic variation with corporate size. (See Table C-22 in Data Book.) Among income corporations, the movements of the ratio are fairly narrow in range; among deficit concerns, the range of the ratio is wider than in the income group. Generally, large and small corporations rely to about the same extent on trade credit to finance their current output. An exception to this behavior is found in trade, which shows a definite tendency

for the ratio of accounts payable to sales to increase with size among corporations with assets over $5,000,000. In several branches of manufacturing (metals, liquors, chemicals, and petroleum among others), the ratio rises rather sharply in the largest size class represented. For metals, this sharp rise appears to be due to the presence of the minor industrial division, iron and steel, in the largest size class. The iron and steel industry has a much higher ratio than other divisions in the metals group. The explanation of the sharp rise in the remaining major industrial branches is not clear.

In terms of total assets, accounts payable of manufacturing corporations show a very sharp and fairly consistent decline as corporate size increases. (See Table C-10 in Data Book.) Among manufacturing corporations as a whole, concerns with assets under $250,000 have more than twice as much outstanding trade indebtedness in relation to total assets as corporations with assets over $5,000,000. The downward trend of accounts payable may be due to the relatively high discount rate on trade credit. The larger concerns, having greater access to alternative sources of both long- and short-term credit at lower rates of interest, may economize by substituting such credit for accounts payable. The behavior of trade is not so consistent as that of manufacturing groups: for the income division, the ratio declines until the $500,000 class is reached and then advances; for the deficit division the variation is erratic.

Accounts payable, like notes payable, when compared with total assets exhibit movements that are in striking contrast to those of the ratio based on sales. The ratio to total assets reveals a definite tendency toward the substitution of long-term liabilities for short-term credit as size of corporation increases. On the other hand, the larger, more integrated concerns do not turn over their short-term credit more rapidly than do the small. We have noted previously that the inventory turnover is lower for large than for small corporations. The similarity in turnover of accounts payable among large and small concerns may be attributed to the longer production period among the larger, more vertically integrated concerns. Therefore, the turnover ratio shows no important variation with size, despite the decline in the proportion of trade credit to total assets as size increases. This may also be stated as

meaning that accounts payable are closely related to the rate of purchase of raw materials, regardless of the size of the concern.

Variations with Profitability

The turnover of accounts payable is more rapid among income than among deficit corporations. (See Table C-22 in Data Book.) In this respect notes payable and accounts payable are similar. As noted in Chapter 3, the turnover of receivables does not follow the same pattern, the difference between income and deficit corporations being very slight.

In general, the inability of a corporation to earn a net income would make it less able to pay off its trade creditors as rapidly as a profitable concern in a similar industrial division or size class. This tendency was probably accentuated by the sharp decline in business at the end of 1937. A further factor in the situation is the greater ease with which the more profitable concerns can obtain other sources of funds for current operations, particularly from reinvested earnings.

In the section dealing with notes payable, we observed that the more profitable concerns also have a smaller proportion of notes payable to sales than the less profitable enterprises. This indicates that profitable concerns do not tend to substitute bank indebtedness for trade credit; in fact, the ratio of accounts payable to notes payable is greater among income than among deficit corporations, indicating that the more profitable concerns take advantage of their ability to secure trade credit, which although not necessarily cheaper than bank credit is probably more convenient to obtain.[11] The general explanation of the lower turnover of accounts payable among deficit corporations must be, therefore, their slackness in meeting trade debts, not the substitution of trade credit for possibly less easily available bank credit. A supplementary factor is the greater utilization by income corporations of reinvested earnings and capital stock for working capital purposes, which contributes to a smaller relative volume of current

[11] The comparative ratios of accounts payable to notes payable among income and deficit concerns are as follows:

	Income	*Deficit*
Manufacturing	203.3%	130.2%
Trade	249.7	165.5

indebtedness in both accounts and notes payable among the profitable concerns.

Accounts payable form a larger proportion of the total assets of deficit than of income corporations. (See Table C-10 in Data Book.) This no doubt reflects the shrinkage in the net worth of deficit corporations as well as the fact that deficit corporations are slower in meeting current trade indebtedness.

Although separate data are not available for accounts payable in 1931, the fact that in that year accounts and notes payable combined, as a proportion of either sales or of total assets, were smaller for income than for deficit corporations seems to indicate that the tendencies noted in 1937 are of a relatively stable nature.

ACCRUED LIABILITIES

The widespread development of accrual accounting has made accrued liabilities a balance-sheet item that compares in magnitude with the combined volume of notes and accounts payable. We examined the behavior of accrued liabilities, particularly when compared with sales, among various industries and among corporations of different size and profitability, but we found no results of significance from the point of view of the present study.