THE DETERMINANTS OF PERSISTENT PROFITS

An Empirical Study

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An Empirical Study Based on FTC Corporate Patterns Report Data

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CHAPTER 1

Introduction

The hypothesis that the competitive process eliminates all economic profits and losses rests on two assumptions: First, in industries where prices exceed marginal costs there is an incentive for firms to cut price to expand their market shares and profits at the expense of other firms. This incentive is usually assumed to be greater, the greater the number of firms in an industry. Thus, the first assumption of the competitive model is that positive profits do not exist in any industry in which the number of firms is sufficiently high, concentration sufficiently low.

Where concentration is not low enough to induce sufficient competition among sellers in a market, profits may appear. When they do, these profits are assumed to be a signal for other firms to enter the industry driving prices and profits down. The second assumption about the competitive process is that free entry and exit of factors and firms assures that profits (and losses) cannot persist, even when transitory market conditions sometimes allow them to exist.

A normative investigation of the competitive performance of a market economy would logically consist of two parts: a study of the existence of profits at any point in time due to existing market structures and other conditions, a study of the persistence of these profits over time. The present effort is of the second kind.

The author has already completed one investigation of this question, a study of 472 large U.S. corporations (1977). The study found that companies with higher than normal profits in 1949 were projected to have higher than normal profits at time equals infinity based on 24 years of data. Casual examination of those firms that had persistently high profits suggested that many were dominant companies in their markets. Thus, the question whether profits persist above the norm, naturally leads to the question of whether market shares and structures persist over time.

In attempting to answer this and related questions, our focal point will be the 1000 largest companies as of 1950. This group of companies was the subject of an FTC investigation in the 1950's, which gathered data on shipments by company for each 5-digit census product definition for the year 1950 (FTC, 1972). It is the most detailed breakdown of company sales for a large sample of firms that has ever been published.

The FTC has undertaken a follow-up survey of the largest 1000 companies as of 1972. The study actually covers somewhat more than 1000 companies as an effort was made to include firms from the 1950 1000-largest that still existed but were no longer part of the 1972 1000-largest. The existence of these two samples allows us to compute market shares for economically relevant definitions of a market for a large sample of companies. Their existence allows us to compute market shares for 1950 and 1972 and test for the persistence of relatively high market shares. The years 1950 and 1972 are the end points of our samples of company data.

Although the choice of these two years to define our data series was determined by necessity rather than convenience, they constitute not unreasonable end points for an investigation of the economic performance of the U.S. economy. Nineteen-fifty is sufficiently far removed from the end of World War II, that it may be assumed to be free of influences of this great conflict and the immediate post-war transition. It is, however, the first year of the Korean War, and some companies' performance may be atypical for this reason. More directly our study is affected by this war, because the War Department suppressed the data for those companies heavily involved in armaments production. Thus, our 1950 market share data are for somewhat fewer than 1000 companies.

In contrast, 1972 comes at the close of the Vietnam War. While the data for this and the immediately preceding years may be somewhat "tainted", limited war and heavy defense expenditures have become such a part of our daily life that a good argument can be made for treating them as normal. The year 1972 has the further advantage of coming just before the OPEC price rise and oil crisis of 1973. Thus, our sample covers the bulk of the post-World War II era of rapid economic growth and economic prosperity. Our study seeks to determine whether the forces of competition in the U.S. were sufficiently strong over this stretch of time and in this economic environment to erode positions of economic profit and market power once they appeared.

But prior to determining whether profits and market power persist, a simpler and more basic question must be asked. To what extent did the companies themselves persist? How many of the 1000 largest firms of 1950 were still in existence as independent companies in 1972?

The FTC divided the 1000 largest companies of 1950 into the 200 largest, 201-500th largest, and the bottom 500 in its original study, and this division is a convenient format for examining the survival issue. Due to a misclassification of one company, there are actually only 299 firms in the second group and 501 in the third. In toto only 583 of the 1000 largest of 1950 could be identified as ongoing enterprises in 1972 (see Table 1.1.). These survivors included companies successfully reorganized under the bankruptcy act, and firms designated as surviving following a merger. In most

Table 1.1.

Disposition of the 1000 Largest Companies of 1950

	1 - 200		201 - 500 (299 Firms)		501 - 1000 (501 Firms)		1 - 1000	
	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT
SURVIVED	168	84.0	183	61.2	232	46.3	583	58.3
ACQUIRED	31	15.5	110	36.8	243	48.5	384	38.4
LIQUIDATED	1	0.5	4	1.3	14	2.8	19	1.9
NO INFORMATION			2	0.7	12	2.4	14	1.4

cases, the latter classification was relatively easy as, for example, when Ford acquired Philco. Philco was classified as acquired, Ford as surviving. One might well argue that none of the constituent companies of Norton Simon survived as recognizable entities when this conglomerate was formed in 1968 (Hunt Foods, Canada Dry, and McCall). We have, however, classified Hunt Foods as surviving in the form of Norton Simon. Thus, if anything, our classification scheme exaggerates the number of survivors from the 1950 list. Our decision to treat firms like Hunt Foods as survivors was to maximize the number of companies in our sample. For the same reason a couple of firms that were acquired in late 1972 were classified as surviving, if data for fiscal 1972 were available. The 1000 largest companies are listed in appendix A-1 along with our classifications.

The bulk of the companies that did not survive until 1972 disappeared through mergers and acquisitions. Only 19 companies were liquidated. In determining whether a company survived we consulted Moody's Industrial Manual and the Standard and Poor's and Dun & Bradstreet corporate directories. Fourteen companies simply disappeared from these references without our being able to determine what happened to them, they are classified as "no information". These were for the most part family controlled companies. Even if we assume that all of them were liquidated, only slightly more than 3 percent of the 1000 largest disappeared via this route, compared to over 38 percent via merger.

The likelihood of a company surviving is strongly related to its initial size. Eighty-four percent of the 200 largest companies survived, while less than half of the firms ranked 501 to 1000 did. The survival rate of the 200-500th largest falls squarely in between these two groups.

If we think of these 1000 largest companies as a sample, drawn from the population of all firms over all points in time, and lump being acquired, liquidated and no information together into not surviving, we can then consider surviving a binary event, and the probability of a firm in the 200 largest surviving is significantly greater than that of a firm ranked 201-500 ($Z = 5.95$), and the probability of one of the latter group surviving is in turn significantly greater than the survival chances of a member of the bottom 500 ($Z = 4.15$). Taking into consideration that most of the non-surviving firms were acquired, we can say that the probability of a firm's disappearing through a merger was significantly higher, the lower its size rank as of 1950[1].

The percentage of the 1000 largest companies that disappeared between 1950 and 1972 should be kept in mind as we examine the persistence of profits and market power in the next two chapters. In these chapters we naturally focus upon the companies that survived during this time period. In this most fundamental way these companies were successful, and might be regarded as more successful than the other members of the top 1000. The story we tell for this surviving subsample may not carry over to the full 1000. A second and separate investigation of the non-survivors is required to obtain the full picture. With this caveat we turn to our first question, the profit performance of the survivors.

Footnote:

1. This result accords with those of Singh (1971, 1975) for the UK and Schwartz (1982) for the US.
   In a couple of cases it was not known which firm acquired which in a merger, and we designated the larger as the acquirer. In a couple of other cases a company in the 1000 largest was acquired by one outside of the 1000 largest, but we regarded the member of the 1000 largest as the survivor to keep it in the sample. These classifications bias our figures slightly in the direction of a positive size-survival relationship. There are only about a half dozen of cases of this type, however, not enough to affect the statistical relationship.

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CHAPTER 2

The Persistence of Profits Above the Norm

A. The Hypothesis

As George Stigler once observed, the issue of whether profit rates have a tendency to converge on a single, competitive level is fundamental to a normative evaluation of the competitiveness of a market economy.[1] In an economy subject to uncertainty profits and losses signal the existence of excess demand or excess supply at long run competitive price. If resources are free to respond to market signals, they should move into areas where profits are being earned and out of areas suffering losses. This movement of resources continues until returns are equalized across all markets (with appropriate adjustment for risk). Of course, each new period brings new uncertainties and new positions of profits and loss, so that a point in time when all firm or industry profit levels are equal never obtains. But if the market is capable of responding to the signals of profits and losses, the long run movement of individual firms' and industry profit rates should be toward a common competitive level. All observed profits and losses should be short run deviations around this trend.

Despite the central position the persistence of profits issue must have in any normative evaluation of a market economy, it has received surprisingly little attention from the profession. Yale Brozen has addressed the issue tangentially in his attack on the positive concentration-profit rate relationship found in much of the literature. Brozen presents evidence that the correlation between concentration and profits is unstable over time (1970, 1971a, b). But Brozen does not examine the issue of whether profits do converge completely to competitive levels (or move only part of the way), and if convergence is complete how quickly it occurs. Moreover by focussing on the profits-concentration relationship he leaves totally unanswered the question of whether profits due to factors unrelated to concentration disappear over time.[2)]

In this chapter we test the hypothesis that profits, whatever their cause, converge over time on a competitive level. In this chapter we do not take up the issue of what factors prohibit or slow down the convergence process. Nor do we allow for risk differences across firms. These will be taken up later. The results in this chapter should be interpreted as simply testing the hypothesis that all firm profit rates converge on a single competitive level independent of risk differences across firms.

The tests in this chapter are conducted using observations on individual firms. Although most studies of profit rate determinants have focused on industry profit levels, the competitive environment hypothesis of convergence on a single competitive level should be equally valid for firm level profits as for industry profits. For a homogeneous product all firms in an industry should charge the same price under competitive conditions. Free entry and exit should ensure that only the most efficient firms survive, that all firms have the same average costs as well as price. If all firms in the industry earn profits above the competitive level for long periods, then there must exist a barrier to entering the industry. If only some of the firms in an homogeneous product industry earn persistently supranormal profits they must have access to a resource, technology or special managerial talent that allows them to earn these higher profits. The competitive process would then appear to be thwarted in one or more of 3 possible ways: (1) other firms are banned from using the resource or technology that makes the more profitable firm have lower costs, (2) bidding for this special resource or talent is inhibited so that neither the assets of the firm nor the factor payments rise to bring the return on capital into line with competitive levels, (3) the more profitable firms do not exploit their competitive advantage by lowering price and expanding output at the expense of the other seemingly less efficient companies in the industry.

With differentiated products both the definition of industries and the concept of entry barriers become more fuzzy, the use of firm-level profits more defensible. If a firm with a differentiated product can continually earn profits above the competitive level,other firms must be prevented from selling a sufficiently close substitute or adopting a sufficiently close technology to eliminate the price-cost margin advantage of the more successful firm. If other firms selling close substitutes in what we may typically refer to as the "same industry" are not able to earn returns at competitive levels or suffer losses, this does not offset the fact that the persistently successful firm has some special advantage that others cannot duplicate. Our tests are designed to isolate firms with these special advantages, and determine how significant they are.

B. The Test

We shall throughout this study refer to the hypothesis that all firm and industry profit rates eventually converge on a single competitive level (risk questions aside) as the competitive environment hypothesis. Although several alternative tests of this hypotheses can be formulated, previous work indicates that they yield similar conclusions. We confine ourselves to one test.

If competition drives the return of every firm $\underline{i}$ toward the competitive profit rate Π_c, then at any point in time $\underline{t}$, the profit rate of the $\underline{i}$ th firm should equal the competitive rate plus a random disturbance term

$$\Pi_{it} = \Pi_c + \upsilon_{it} \tag{1}$$

The competitive return on capital may itself change over time due to changes in the micro-economic environment or following macro-economic movements. Thus, we shall make Π_c, time dependent,

$$\Pi_{it} = \Pi_{ct} + \upsilon_{it} \tag{1'}$$

The average return in the economy differs from the competitive return in proportion to the average amount of disequilibrium profits or monopoly rents each firm receives. We shall assume that these supra-competitive profits and rents remain a constant fraction of the competitive rate of return

$$\Pi_{ct} = \gamma\overline{\Pi}_t, \tag{2}$$

where

$$\overline{\Pi}_t = \sum_{i=1}^{n} \Pi_{it}/n, \qquad o < \gamma < 1$$

If (2) holds it is also reasonable to assume that deviations from the competitive return are larger in years when the average level of profits is large. We shall assume these deviations vary in the same proportions as $\overline{\Pi}_t$, i.e. for

$$\mu_{it} = \frac{\upsilon_{it}}{\overline{\Pi}_t}, \quad \mu_t = o, \qquad \sigma_{\mu t} = \text{constant} .$$

If we now subtract $\overline{\Pi}_t$ from both sides of (1) substitute from (2), and then divide both sides by $\overline{\Pi}_t$, we get

$$\frac{\Pi_{it} - \overline{\Pi}_t}{\overline{\Pi}_t} = (\gamma-1) + \mu_{it} \tag{3}$$

or $$\pi_{it} = (\gamma-1) + \mu_{it} , \qquad (3')$$

where

$$\pi_{it} = \frac{\Pi_{it}-\overline{\Pi}_t}{\overline{\Pi}_t}$$

Since $\gamma < 1$, (3') implies that the expected value for normalized profits is less than one.

Now consider Figure 1. Suppose we observe some company i's profits at time t = 0 to be above the competitive profit rate (we ignore the time trend in Π_c here). If the competitive environment hypothesis is valid, Π_{it} must fall to Π_c as the stochastic component of i's profits is eroded. This return to normalcy need not be immediate, however. Whatever the temporary market power or efficiency advantage i has at time 0 is, this advantage may not disappear from imitation or entry for several time periods. Thus, a return to Π_c along a path like A is suggested.

The two most obvious alternative routes toward Π_c, linear path B and nonlinear C both must be rejected, since each implies a continual decline in profits, even after the competitive rate of return has been reattained. Although other initial segments in the path toward Π_c can be envisaged, at some point in time i's profits must approximate Π_c , and thus line A, if the compettitive environment hypothesis holds. Similarly, less than competitive returns at time 0 can be reasonably expected to return to Π_c along some path like D.

Pathes A and D can be approximated by the following equation, allowing for the possible time trend in Π_c.

$$\pi_{it} = \alpha_i + \beta_i/t + \mu_{it}$$

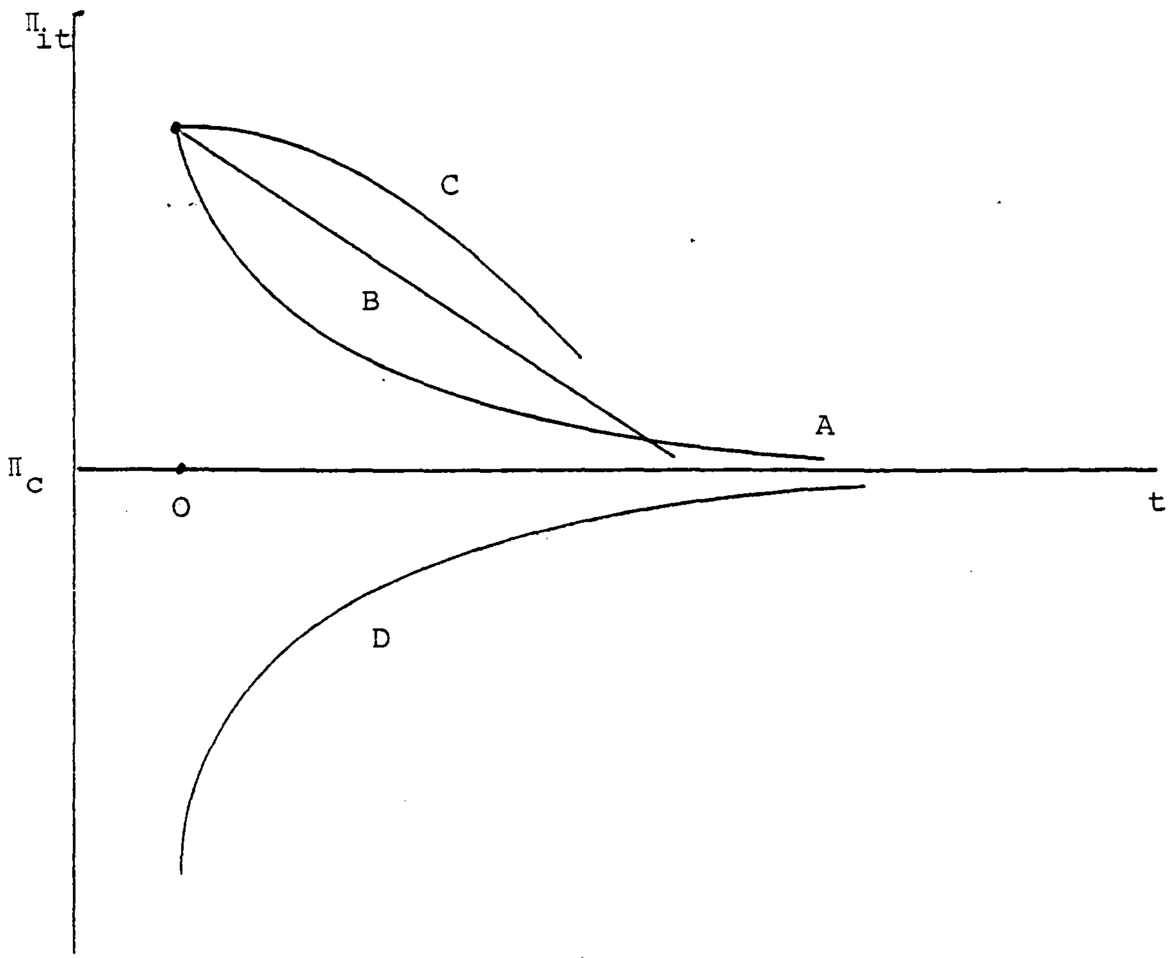

Figure 1. Possible Profit Paths

If the competitive environment hypothesis is valid each firm should have the same expected α_i and these α_i should be independent of the profit ranks of any firm at a given point in time. The β_i measure the speed of convergence to the α_i. Firms with initial profits above the norm should exhibit βs > 0; firms below the norm βs < 0. The absolute size of the βs indicate the speed of convergence. Thus, there are two parts to the competitive environment hypothesis: equal expected α's for each firm regardless of initial profit rank; large absolute values of β for all companies.

We test the competitive environment hypothesis against the alternative that permanent, firm-specific positive and negative rents are earned by some companies. Even if this hypothesis is valid, we would expect to observe some stochastic elements in the profits observed at any point in time. Profits above the average would be more likely to contain positive stochastic elements, below the average profits to contain negative stochastic elements. Thus, we would still expect the profits of firms initially above the normal to fall, below average profits to rise. But under the alternative hypothesis it is not necessary that all of the companies with initially high profits experience a decline, nor is it necessary that all profit rates converge on the same value. It is possible that some companies with initially above average profits have nevertheless negative stochastic components in their returns and are below their long run expected returns including rents. Thus, some firms may follow a path like D in Figure 1, even though they start above the Π_c line. We expect the fraction of companies following a D path to increase, as we move down in the initial profit rankings, however. Similarly we expect the long run projected profits of each firm, the estimated $\hat{\alpha}_i$s, to be directly related to the initial profit levels under the alternative hypothesis that some company profits contain permanent rent components. To establish these initial rankings we average the profit rates for each firm over the first 3 years of the sample period and rank the companies on the basis of these initial profit figures.

In the previous study two sets of profit rates were used, gross and net of taxes (1977). Analogous results were obtained for both sets. We shall, therefore, confine ourselves to an after-tax measure of profits. Net profits has a conceptual advantage over the gross measure, since net profits are presumably the appropriate signal for resource movement. We thus define profits as total corporate profits plus interest payments less income tax payments. The profit rate is this measure of profits divided by total assets. Interest payments are added to profits to make our measure of the profit rate independent of the source of funds from which new assets are financed.[3)]

C. The Results

Our sample consists of 602 firms for which complete time series data are available from 1950 through 1972. The starting point for constructing this sample was the surviving list of companies from the 1950 largest sample group. To these were added those for which a full time series was readily available on the COMPUSTAT Tape. The bulk of these additional firms are in the 1972 1000 largest sample.

Equation (3') was estimated for each of the 602 firms. The full sample was then divided into 6 subsamples on the basis of the average profit rates enjoyed during the first 3 years of the sample period: the 100 companies with the highest average profit rates over 1950-52 in sample 1, the 100 firms with the next highest profit rates in sample 2, and so on with the third and fifth subsamples picking up the 2 extra firms. Table 2.1 presents the mean αs and βs for each group. A distinct pattern is observed. Both coefficients are on average positive and significantly greater than zero in the subsample with highest initial profit rates, and fall uniformly as one moves to subsamples with successively lower average profit rates in the initial 3 years. In the 6th (lowest initial profit rate) subsample, both coefficients are on average significantly less than zero.

The mean values of $\overline{\beta}$ imply fairly rapid convergence to the long run projected values for the profit rates. The mean β for the first subsample, for example, implies that while the profit rates for this group were on average 45.5 percent greater than their long run projected values in the first year of the sample period, they were only 4.55 percent higher after 10 years had elapsed ($\underline{t}$ being indexed 1,23). All other mean βs in the table imply an even smaller deviation from long run projected values. Thus, the rapid convergence portion of the competitive environment hypothesis is satisfied.

But this rapid convergence is not to the same long run value for each subsample, and the competitive environment hypothesis must therefore be rejected. The mean α for the highest initial profit rate subsample is projected at time equals infinity to be 32.1 percent above the average profit rate for the sample. The mean projected profit rate of the second highest group is 9.3 percent above the average profits of the sample. For all other subsamples the average projected profit levels are below the mean profit levels for the full sample, and the differences are increasingly negative as we move to lower and lower initial profit groups. The lowest profit subsample is converging to profit rates that are on average 22.8 percent below the sample mean. Thus, while the tendency exists for above average profits to fall and below average profits to rise, the former do not fall far enough nor the latter rise enough to confirm the competitive environment hypothesis.

These results are in close accord with those of the earlier study (1977). The same positive to negative pattern was observed there, the mean α for the top 1/8th of the companies was 46 percent above the average profit level for the sample, using a gross of taxes definition of profits. This accordance is not too surprising, since the time periods of the studies are almost identical, and there is a large overlap in the two samples. Nevertheless, the present results when placed along-side those of the earlier study indicate that our rejection of the

Table 2.1: Mean αs and βs for Persistence of Profit Test

$$\pi_{it} = \alpha_i + \beta_i/t + \mu_{it}$$

Sample	$\bar{\alpha}$	$\bar{\beta}$	n
1	.321 (.061)***	.455 (.099)***	100
2	.093 (.037)**	.218 (.055)***	100
3	-.018 (.033)	.086 (.051)*	101
4	-.053 (032)*	-.094 (.050)*	100
5	-.122 (.031)***	-.202 (.043)***	101
6	-.228 (.028)***	-.448 (.051)***	100

Standard errors in parentheses.

*** Significantly different from zero, 1 percent level two-tail test.

** Significantly different from zero, 5 percent level two-tail test.

* Significantly different from zero, 10 percent level two-tail test.

competitive environment hypothesis during the quarter century following World War II is robust to fairly large changes in the sample composition (25%), whether profits are defined gross or net of taxes, and the number of subsamples into which the full sample is divided when running the tests.[4)]

The statistical comparisons of mean αs in Table 2.1 are with zero. Equation (3) implies convergence on a rate of return below the average, however, if average profits contain elements of monopoly rents. Our regressions provide two possible ways to estimate long run competitive profit rates. First, we might hypothesize that no company can survive indefinitely unless it earns the competitive return on capital. The lowest projected profit rate must then equal the competitive rate. Under this assumption the competitive rate of return on capital would be projected to be in the long run 22.8 percent below the average return earned by the 602 companies. The long run projected returns of the highest profit group would be 55 percent above the competitive return on capital. All other subsample averages would have to be adjusted accordingly.

The logic of our second method of estimating the competitive return on capital is as follows: The competitive return on capital is earned by those companies who receive zero rents. The profits of these companies differ from the competitive return by a random component assumed to be normally distributed around zero. Firms whose profits equal the normal return plus only a random component should be distributed normally about the competitive return, and should exhibit an equal tendency to rise or fall over time. Thus, the competitive return is the long run projected profits of that group of firms exhibiting equal tendencies for profits to rise and fall. Table 2.2 reports the number of positive αs and βs for each group, as well as the number which were statistically significant. Our interest is in the number of positive and negative βs. There are almost exactly the same number of positive (49) and negative (51) βs, in the fourth profit group. This group also contains the fewest statistically significant βs, i.e. the fewest equations in which there is a statistically significant tendency for profits to move up or down. Thus, by our second method of determining the competitive return, the average long run projected profits of the fourth group equal the competitive return on capital. This average lies some five percent below the sample's mean profit rate. By our second method of computing the competitive profit rate, our highest profit group is projected to have a return on capital 37.4 percent above the competitive rate.

Note also, that one third of the β's of the top group are negative. Thus, one third of the 100 companies ranked highest on the basis of initial profits exhibited a tendency for profits to <u>rise</u> with the passing of time, a tendency starkly inconsistent with the hypothesis that all of the profits initially observed above the norm were transitory. Similarly, seventeen of the lowest ranked profitability firms witnessed a long run tendency for their profits to <u>fall</u> still further. Although the general pattern of results in Tables 2.1 and 2.2 is consistent with an overriding tendency for profits to regress back onto some normal, competitive level, the regression is not complete either in the sense that all firms exhibit such a regression, or that those that do experience a complete return to the competitive level.

D. Caveats and Conclusions

The results presented strongly reject the competitive environment hypothesis. Profits when once above the norm persist at above competitive levels into the indefinite future, and the difference is substantial. Several objections can be raised to this conclusion, however. We take them up now.

1. Risk

The most obvious explanation for why some firms have persistently higher profits than others is that they are riskier. This hypothesis was rejected in our earlier study using both variance and covariance measures of risk. The companies in the top quarter of that sample earning persistently higher profits did not have a significantly greater variance in profits over the sample period, nor did a regression of their profits on the mean profits of the sample indicate a significantly higher β (this being the capital asset pricing model β).

Table 2.2: Fractions of Positive αs and βs by Subsample

Subsample	Number of $\alpha s > o$	Number of αs significantly different from zero*	Number of $\beta s > o$	Number of βs significantly different from zero*	n
1	70	71	67	53	100
2	53	64	67	33	100
3	45	61	56	30	101
4	33	71	49	24	100
5	28	67	31	29	101
6	17	69	17	45	100

* Five percent level, two-tail test

One can argue that it is really ex ante risk that determines required profitability, and that none of the measures of risk based on achieved results truly captures the risks perceived by the market. Although I have some sympathy with this argument, I do not see how to test its validity. The average profits of the 101 companies with the highest profit rates in 1950 - 52 did fall fairly substantially over the subsequent two decades. If the market's evaluation of the shares of these companies was based on an expectation that they would remain at early 1950 levels, holders of their shares would have suffered substantial losses. If, however, the market expected their profits to fall back to competitive levels, then holders of their shares would have done quite well, since their profit rates have continued substantially above competitive levels, and promised to continue to do so.

To the extent long run returns to investors are determined by the long run profits earned by companies, investors would have been better off in 1950 investing in the 101 most profitable companies, than in the second 100 most profitable, better off investing in the second 100 than in the third, and so on down the line. And no short run instability in these companies' profit performance exists to offset this.

2. <u>The Choice of Sample or Time Period</u>

Our sample includes all of the 1000 largest companies as of 1950 for which it was possible to obtain data over the 1950 - 1972 period plus those for which complete data were available on one of several recent COMPUSTAT tapes. The latter group are again relatively large. Thus, our sample includes the bulk of the most important manufacturing firms of the 50s and 60s for which data were available. Any alternative sample would have to be either a subsample of ours or heavily overlap with it. The only possible bias in the choice of our companies I see stems from our focussing on large surviving companies.

The competitive environment hypothesis postulates that all profits above and below the competitive rate of return are disequilibrium phenomena. The profit ranking of a group of companies in any particular year should be random when viewed against the long run profit performances of these same companies. All time periods are atypical as to which firms have above average profits. Thus, no time bias is conceptually possible.

One might object that 23 years is too short of a time span to measure long run tendencies. The βs estimated in our equations imply fairly rapid convergence to long rung projected values, however, so that extending the time period does not seem likely to change the values of our αs very much. Furthermore, the αs measure the projected profit rates at time equals infinity. The argument that our time period is too short must assume that 23 years is not sufficient time even to estimate the eventual equilibrium values of our parameters, an argument that, even if correct, undermines the notion that above normal profits are temporary disequilibrium phenomena.

3. Superior Talent

Now let us turn to the hypothesis that firms with continually high profits possess superior managerial talent. First, it should be noted that, even if true, this hypothesis is inconsistent with the competitive environment hypothesis, at least in its most general form. The same is true of patent rights, locational advantages and other possible causes of above-normal returns. Over time the value of these talents or assets should be bid up either reducing the stated profits of the companies or raising the value of total assets, in both cases driving the return on assets toward the competitive level. That we have found strong evidence of a tendency for profits to persist at above normal levels without attempting to remove elements of monopoly rents from factor incomes or present values of monopoly rents from total assets further strengthens our confidence in the validity of our conclusions.[5]

In this regard, it should be noted that we have made no adjustments to our data to allow for mergers. The purchase price of any firm should include the present discounted value of any assets the firm holds that will yield monopoly rents in the future. Thus, any monopoly rents being earned by firms acquired between 1950 and 1972 are capitalized in the assets of the companies that acquired them. Given the number of mergers taking place between 1950 and 1972, the amount of monopoly rents being disguised in this way in our sample could be substantial.

Mergers have a further tendency to bias our results in favor of the competitive environment hypothesis. The probability that a firm with an above normal return on total assets acquires a firm with a lower return must be greater than .5. Similarly firms earning lower than normal returns will acquire firms earning higher returns on average. Thus, mergers should tend to drive the observed profit rates of companies toward the sample average by the simple arithmetic of averaging, even if the profit rates of all companies were totally unchanged.

4. Accounting Practices

It is of course possible that a firm possessed some assets in 1950 whose market value was significantly below its book value, and that it still possesses these same assets in 1972 and they are still undervalued in the company's accounts. More generally, accounting practices do differ both with respect to the definition and valuation of assets, and the measurement of profits. A cynical interpretation of our results might be that we have established the existence of persistent differences in accounting practices across firms, and that we have not established anything about persistent differences in profits defined in an economically meaningful sense.

While I feel there is more to my results than accounting differences, I also admit that some of the observed differences in profitability may be an artifact of accounting practices.

How to determine the magnitude of these differences is a difficult question. In part, I shall attempt to answer this question by examining the relationship between other economic variables that logically are related to market power and the projected profit values. If the profit projections are related to measures of market power, than all of the observed differences in profit rates cannot be due to the accountant's wizardry.

But first the more basic questions of whether positions of market power tend to persist must be answered.

Footnotes:

1. (Stigler, 1963, p.1)

2. For additional discussion and critique of Brozen's work see (Wenders 1971a,b; MacAvoy, et al. 1971; Winn and Leabo, 1974; Qualls, 1974; McEnally, 1976).

3. Data were obtained from the Standard and Poor's COMPUSTAT Tape and conform to its definitions thus

$$\Pi_i = (\text{INCOME (18)} + \text{INTEREST (15)})/\text{TOTAL ASSETS} \quad (6)$$

   Where COMPUSTAT data were not available but Moody's data were, the analogous definition based on Moody's data was used.

4. The same pattern was also observed in the present study when the full sample was divided into 10 subsamples.

5. The persistence of above-normal profits for sustained periods is consistent with a special talents rationale for traditional entrepreneurial firms, where the innovator-entrepreneur has the residual claim to profits and where, by definition, no market exists for his services. There was some evidence of a disproportionate representation of owner-controlled companies in the persistently-high-profit subsample in the earlier study. But a full investigation of this question requires separate treatment.

CHAPTER 3

The Persistence of Market Power

Evidence of the persistence of profits above the norm naturally raises the question of the persistence of market power. A long literature has evolved linking industry profits above competitive levels to high industry concentration , and a more recent literature is emerging linking firm level market power, i.e. market shares, to company profits (see, Shepherd, 1972; Gale, 1972; Kwoka, 1979; Ravenscraft, forthcoming; Kwoka and Ravenscraft, 1982). Since the focus of this study is the persistence of profits among firms, we shall concern ourselves with the persistence of market share issue.

There are two ways this issue can be addressed. First, we can look at firms and ask the question: to what extent have firms with high market shares in 1950 persisted in having high market shares in 1972, or, in analogy with the profits' test methodology, are projected to have high market shares into the indefinite future? Second, we can look at markets and ask the question: to what extent are individual markets as concentrated in 1972 as in 1950, and to what extent are the same firms dominating individual markets in 1972 as did so in 1950?

In trying to answer the first question several problems arise. Few firms, even in 1950, operated in only one market, and thus, we cannot speak of the market share of a company treated as a whole. We can speak either of a company's share within a given industry, or an average of the market shares across all of the markets in which it sells. Since our interest is in explaining firm level profits, an average of market shares across all markets is the logical measure of a firm's market power to use. But then there are two serious difficulties in making intertemporal comparisons. First, a firm's average market share may change over time, because the industries in which it operates grow at different rates. Thus, a company could maintain precisely the same market share in every industry, and exhibit a falling (rising) average market share if the industries in which it has low (high) market shares grow more rapidly than the others. Second, a firm may diversify into additional industries either internally or through merger causing its average market share to change. Particularly, when this diversification is by merger any changes in average market share that it causes may give a misleading impression of the volatility of company market shares over time. For these reasons, we supplement our investigation of the stability of average firm market shares, with an examination of leading firm dominance in individual markets. We take this up in the following section and then turn to a closer look at individual firm market share stability.

A. The Stability of Dominance by Individual Firms in Separate Markets

Three problems are encountered in attempting to determine the persistence of market dominance: (1) market definitions change, (2) the identity of firms change, and (3) our sample identifies only the top 1000 companies in 1950 and 1972.

The first problem is relatively serious. The Census definitions of industries have undergone a fairly massive transformation since 1950. To give but one example, ethical drugs for human use were to be found in 1950 largely in 3 categories:
a) drugs of animal origin, uncompounded bulk,
b) inorganic and organic medicinals (antibiotics, alkaloids, bulk vitamins), and c) ethical preparations for human use (products advertised or otherwise promoted to or prescribed by the medical profession). In 1972, a much finer classification scheme was used in which drugs are separated into
a) vaccines and antigens, b) antitoxins, toxoids and toxins for immunization, c) diagnostic substances, and a variety of pharmaceutical preparations separated by purpose for use. There is no way to reconcile these differences without being fairly arbitrary. Thus, many industries which existed in 1950 or in 1972, are not compared due to the incompatibility of their definitions.

An effort was made, however, to maintain as many industries for comparison as possible. Thus, several industries in one year could be combined to equal an industry in another, and this was done so. For example, in 1950, all farm machinery and equipment, except tractors, was grouped together in a single 5-digit industry. In 1972, farm machinery was spread over 9 5-digit industries. To compare identities of the dominant firms in this farm machinery "industry", we summed the sales of the leading companies in the 9 5-digit industries of 1972 and checked the indentities of the leading firms in the aggregate against the leaders in the single 5-digit industry in 1950.

There were also numerous cases of slight changes in an industry's definition between the two points in time which we simply ignored. For example, industry 36615 in 1950 included recorders, amplifiers, audio equipment and recording magnetic tapes and wire. This industry was matched against 36514 for 1972 even though the latter did not include magnetic tapes. A list of the industries matched in the two years is contained in Appendix A-3. It should be stressed with respect to this first set of data problems that they all lead to an underestimation of the persistence of market dominance. To the extent that we are not actually comparing the same market at two points in time, it is possible that we will observe a change in the leading companies when no change in the identically defined markets had occurred.

The second difficulty in comparing dominant firm identities in 1950 and 1972, is that the nature of the firms changes through acquisitions and spin-offs. If company A acquires B between 1950 and 1972, and B was an industry leader in 1950, we have classified the industry as having the same leader in 1972, if we find that A is the leader in 1972. A more difficult problem is presented by spin-offs, since they are harder to track down. Suppose A led industry x in 1950 but then sold to C the division producing all of A's x-output. If C was then the industry leader in 1972, one might legitimately argue that the industry had the same leading firm in both years. If we had not recorded the sale of the division, however, we would misclassify the industry as having a new industry leader. Again, this problem produces an exaggertion of the number of changes in industry leadership.

The third data problem in this section arises because we have observations on only the 1000 largest companies in the two years. If the leading firm in either 1950 or 1972, or both, was not a member of the 1000 largest of that year, it is possible that the industry has the same leading firm and we have misclassified it as having a new leader. This problem is more likely to occur, the smaller an industry's size. In the very biggest industries, the leading firms have sufficient sales in the given industry alone to place them in the 1000 largest. In the smaller industries, a company that specialized in the given industry could dominate it and still be too small to make the 1000 largest. Thus, while this data problem again biases our findings toward the conclusion that there has been more instability than there actually has been, the bias is less, the more important the industry. Nevertheless, it should be kept in mind in the following comparisons since we typically do not account for industry size.

Our determination of the stability of market leadership is based on the identities of the two leading companies. Theoretical-empirical support for focusing on but the two largest companies is found in Kwoka's study indicating that a two-firm concentration ratio exhibits the strongest association with profits (1979). A second reason for restricting consideration to the two largest companies is to maintain industries for which the comparison can be made. To compare the identities of the two largest companies at two points in time we obviously need a minimum of two firms in each industry at each point in time. If we wished to compare the 3 largest, we would need at least 3 at each point. As more firms are compared, more industries must be purged from the sample because of an insufficiency in the number of companies reporting in one year. Finally, as we increase the number of firms compared, the number of possible ways of defining stability increases at a geometric rate. With 2 leading companies there are already seven possible categories of change in the leadership of the industry; both firms may be the same and in the same positions, both firms are the same but have exchanged positions, the leading firm is the same but the second is different, and so on. The seven possibilities are presented in Table 3.1 The column heading "None" signifies that neither of the two leading firms in 1972 was the same as in 1950. Arrows indicate direction of movement from 1950 to 1972.

The table presents the number of industries found in each category classified according to 2-digit SIC codes as defined for 1972. One hundred and twenty-five of the 350 industries for which a comparison could be made had two different leading firms in 1972 than they had in 1950. The next largest category is the one in which the leader is the same in both years, but the second firm is different. When we combine this with the category in which both leading firms have the same ranks in the two years, we find that there are 142 industries in which the same firm is the leader in 1972 as was in 1950, some 40 percent of our 350 industries. If we add to these the 13 industries in which the two leading firms have remained the same, but switched places, there are 155 industries, 44 percent of the sample, that can be regarded as having a stable dominant firm structure, in the sense that either the same company is the industry leader in both years, or the same two companies are the leaders. In 125 industries we have instability in the top two positions, and the remaining 70 cases fall inbetween. Whether these numbers depict a situation of dominant firm stability or instability on average is a matter of taste, but this observer regards these numbers as suggesting fairly persistent stability in the identities of the industry leaders in those industries that could be identified as roughly the same in 1950 and 1972.

A look at the figures by 2-digit industry indicates sizeable differences in the stability tendencies from one 2-digit area

Table 3.1

Classification of Industry Leadership Positions Between 1950 and 1972*

Industry 1972 SIC Classification	None	2→2	2→1	1→2	1→1	1→2 2→1	1→1 2→2	TOTAL
20	8	3	3	3	16	1	7	41
21	0	0	1	1	1	0	0	3
22	8	1	0	2	2	0	1	14
23	9	2	0	0	1	1	1	14
24	4	0	0	2	2	0	0	8
25	3	0	0	1	0	0	0	4
26	4	2	0	0	7	0	2	15
27	5	0	0	1	1	0	0	7
28	10	2	2	5	6	1	4	30
29	1	0	1	0	1	0	0	3
30	2	0	0	2	2	0	1	7
31	4	0	0	1	2	0	0	7
32	6	2	0	1	3	1	5	18
33	2	4	1	0	11	1	2	21
34	14	1	1	4	6	1	4	31
35	21	0	4	3	18	4	2	52
36	4	1	1	2	13	2	5	28
37	2	1	0	0	3	0	3	9
38	6	1	2	2	8	0	1	20
39	12	1	1	2	1	1	0	18
TOTAL	125	21	17	32	104	13	38	350

* A list of the 350 industries for which the comparison was made including SIC numbers is contained in Appendix A-3.

to another. In the food and drink industries (SIC 20), for example, 60% of the 41 industries had either the same leading firm or the same two leaders, in 1972 and 1950, while only 20% had two different companies leading in 1972. Similar stability was present in paper (SIC 26), stone, clay and glass (32), primary metals (33), electrical machinery and equipment (36), and transportion equipment (37). In contrast, over half of each of the following industries exhibited a complete turnover of the two leading firms: textiles and apparel (22 and 23), lumber, wood and furniture (24 and 25), printing (27), leather (31), and the miscellaneous category (39). These differences in dominant firm stability across industries are stark and invite speculation as to causality. We turn now to an examination of this question.

B. The Determinants of Market Dominance

In this section we report briefly some results regarding the industry characteristics associated with stable leadership in individual markets.

Given the qualitative nature of the dominance categorizations used in the previous section, normal regression techniques are inappropriate. The most straightforward approach to the question would appear to be a binary classification of industries into those with stable dominance patterns, and those without such stability. The three most stable dominance patterns of the seven we employed are when the top two firms remain the same, whether they interchange positions or not, and when the same firm leads the industry in both 1950 and 1972, i.e. the three categories farthest to the right in Table 3.1. Any industry appearing in one of these 3 columns was classified as having a stable firm-dominance pattern from 1950 through 1972. All other industries were classified as having unstable dominance patterns.

As explanatory variables we chose the following industry characteristics:[1)]

C_4	concentration, $\frac{C_4^{50} + C_4^{72}}{2}$
S	size, $\frac{Sales^{50} + Sales^{72}}{2}$
ΔC_4	change in concentration C_4^{72}/C_4^{50}
ΔS	change in size, $Sales^{72}/Sales^{50}$
ADV	advertising intensity, industry advertising to sales ratio
PAT	patent intensity, industry patent to sales ratio.

In addition to the above specification of the concentration and size variables we tried including the sales and concentration indexes for 1950 and 1972 separately, and using first differences rather than ratios to measure changes. These alternative specifications were either inferior or no better than the ones reported.

We tested for a relationship between the above defined industry characteristics and dominant-firm stability using both the probit and logit maximum likelihood regression techniques[2]. These two techniques gave quite analogous results and so we report only those from the logit technique. DOM takes on a value of 1.0 if an industry has a stable pattern of firm dominance (i.e. is in the 3 categories farthest to the right in Table 3.1) and zero otherwise. Under the logit procedure the dependent variable is $D = \log \left(\frac{DOM}{1-DOM}\right)$.

The results are as follows using the 339 industries for which data for all variables are available

$$\begin{array}{llllll} D = & -\ 2.15 & +\ 7.40\ C_4 & +\ .76 \times 10^{-6} S & -\ .37\ \Delta C_4 \\ & \ \ 4.62 & \ \ 7.41 & \ \ 4.51 & \ \ 2.46 \end{array}$$

$$\begin{array}{lll} -\ .047\ \Delta S & -\ 3.16\ ADV & -\ 1.22\ PAT \\ \ \ 2.23 & \ \ 0.55 & \ \ 0.47. \end{array}$$

<u>Likelihood Ratio</u> 141.2 with 6 degrees of freedom

(t-values under coefficients).

The likelihood ratio asymptotically approaches a χ^2 - distribution with degrees of freedom equal to the number of explanatory variables (6). The LR ratio of over 141 implies high significance and strong overall fit for the equation. The concentration variable takes on the highest <u>t</u>-value and suggests perhaps that stable dominant firm patterns are associated with scale economies, if we assume that scale economies explain industry concentration levels over the long run. The positive coefficient on industry size can be given two interpretations. First, to be an industry leader in an industry with large total sales, a firm must, *ceteris paribus*, be of large absolute size. Being of large absolute size it may be better able to adopt more capital intensive production techniques, and have access to cheaper capital in the capital market. These characteristics may make it more difficult for other firms to displace a leading firm in an industry with large sales. The second reason to expect a positive coefficient on industry size is due to our having observations on only the 1000 largest companies. The probability that an industry leader is not in the 1000 largest firms in 1950 or 1972 is greater the smaller the absolute size of the industry is. Thus, one reason we may observe greater instability in the top 2 ranks of small industries is that the firms we identify as being at the top in one or the other year were not in fact among the leading two firms in those years.

The negative coefficients on both the change in concentration and the change in sales variables lend themselves to similar interpretations. Industries undergoing rapid structural change, as indicated by large increases in concentration and rapid growth, are more likely to experience turnover in leadership than slow growing industries with unchanging concentration levels.

One might anticipate that large declines in concentration would also be associated with more turnover at the top of the industry than when concentration is relatively constant, i.e. that the probability of a stable dominant-firm pattern is highest for a ratio of C_4^{72}/C_4^{50} of about 1.0 and low for both rapid increases and declines in concentration. This conjecture was not confirmed. Inclusion of a squared C_4 term in the equation did not change the sign or significance of the C_4 term, nor was the squared term itself significant.

Neither the advertising nor the patent intensity variables took on significant coefficients. This result is quite interesting in that it seems to refute the opposing views of these activities, that claim that nonprice competition destabilizes industry dominance patterns[3], and the opposing view that these activities lead to entry barriers and thus protection against at least the destabilizing influence of entry[4]. Of course, both hypotheses might be partially true and thus offsetting. Heavy advertising and patent activity could protect industry leaders from displacement by new entrants, while at the same time leading to more reshuffling among the incumbent leaders. We have not pursued these additional possibilities. Our results indicate that a simple, direct linkage between these two forms of non-price competition and the stability of industry leadership does not exist.

Given the nonlinear nature of the equation the marginal impact of a change in any of the independent variables on the probability that an industry has a stable dominance pattern varies with the probability itself. To get a feel for the impact of each independent variable on the probability of an industry having a stable dominant firm structure we make the following calculations: We compute the change in the probability of an industry being classified DOM at the mean for DOM, for changes in each of the significant independent variables from their mean values to a doubling of their mean value

		Mean of	Variable
Δ DOM/$(2\bar{C}_4-\bar{C}_4)$	= .542	.297	C_4
Δ DOM/$(2\bar{S}-\bar{S})$	= .170	9.08×10^5	S
Δ DOM/$(2\overline{\Delta C_4}-\Delta C_4)$	= .188	2.06	ΔC_4
Δ DOM/$(2\overline{\Delta S}-\overline{\Delta S})$	= .064	5.56	ΔS
		.442	DOM

Thus, an industry with double the average four firm concentration ratio (.594 instead of .297) would have a 54.2 percent greater chance of being classified as DOM if the other characteristics implied a DOM of .442, which is to say it almost certainly would be classified as having a stable dominant firm structure. The other probabilities can be similarly interpreted.

Together these results imply that industries with stable dominant firm patterns tend to be large and concentrated suggesting perhaps that efficiency advantages lead to stable industry dominance, and that these industries are not characterized by rapid growth and concentration increases, i.e. by rapid structural change.

C. The Stability of Market Shares

In this section we explore the question of whether the same companies that had relatively high market shares in 1950 continued to have high market shares in 1972. When asked at the level of the firm, this question must be answered in terms of weighted average market shares for each firm. We first calculated these weighted average market shares using sales as weights and the industry definitions of Appendix A-2. There are 425 firms which we could identify as common to both 1000 largest samples, and for which we had complete data to run the persistence of profits tests of the previous chapter. In determining which of the 1950 1000 largest were in the 1972 sample we employed the identity changes following mergers recorded in Appendix A-1.

The mean weighted average market share of a firm in 1950 was .098. The mean market share in 1972 was .085. Other statistics of the two samples are presented in Table 3.2. The decline in mean market shares by firm was significant at the 5 percent level using a two-tail criterion.

The simple correlation between weighted average firm market shares in 1950 and 1972 is .664, statistically significant at all of the usual levels. We can also ask the question whether firms with high market shares in 1950 were projected to have persistently high market shares at time equals infinity. We do not have annual observations on firm market shares, so we cannot estimate a projected market share for each firm as we did for profits in Chapter 2. We can, however, assume that an analogous relation holds for market share as for firm profit rates

$$M_{it} = \alpha_i + \beta/t + \mu_{it}$$

where M_{it} is the i th company's weighted average share in period $\underline{t}$. If we further assume that the observations for 1950 and 1972 fall exactly on the regression line, we can estimate the projected market share M_{ip} of the i th firm at time equals infinity (i.e. α_i) as

$$M_{ip} = \frac{23}{22} M_{i72} - \frac{1}{22} M_{i50}$$

Obviously, the estimate for M_{ip} is dominated by the i th firm's market share in 1972. The mean M_{ip} for the entire sample is .084 and they correlate almost perfectly with M_{i72}. Nevertheless, it is of interest to run the analogous tests for projected market shares as were run for projected profits.

To do so, we grouped the 425 companies into six subgroups based on their 1950 market shares. Group 1 consists of the 70 companies with the highest weighted average market shares, group 2 the 71 companies with the next highest 1950 market shares, and so on, with each of the other 4 groups having 71 firms. Table 3.3 presents the mean projected market shares for each group. The average projected market share for the group with highest initial market shares is almost double the mean of the full sample, a difference which is highly significant. Each successively lower initial market share group has lower projected market shares. The sixth group has mean projected market shares well under half the level for the full sample. Whatever causes the firms to have different market shares in 1950 would appear to continue to affect their relative market power in 1972, and into the foreseeable future.

These results are the more remarkable when it is recalled that no allowance has been made for differences in the relative growth rates of industries or for mergers. Were 1972 market shares weighted by 1950 sales weights, the tendency for market power to persist would most certainly be higher, just as the tendency for profits to persist would most certainly be greater if the effects of mergers, at least, could be netted out.

Table 3.2

Market Share Statistics for 425 Companies Common to the 1950 and 1972 1000 Largest Samples

	1950	1972
MEAN	.098	.085
VARIANCE	.012	.007
MINIMUM	.005	.003
MAXIMUM	.709	.567
N	425	425

Table 3.3

Mean Projected Market Shares for Companies Grouped According to Their 1950 Market Shares

GROUP	N	M_{ip}	Difference from full sample mean (.084)
1	70	.181	.097**
2	71	.101	.017*
3	71	.081	-.003
4	71	.060	-.024**
5	71	.051	-.033**
6	71	.032	-.052**

** Significant at .01 level, two-tailed test.
* Significant at .05 level, two-tailed test.

Footnotes:

1. The C_4 figures are Census values, with that for 1972 being adjusted by Leonard Weiss to account for regional and local market definitions and imports. The advertising intensity variable is the ratio of advertising to sales for 1963 reported on a 3-digit level by the IRS. The patent figure is the average number of patents per year over the period 1966-68 reported by the NSF (1977), divided by 1967 Census of Manufacturing sales. The year 1963 was chosen as falling roughly in the middle of our sample period, the patent data are the earliest reported on an industry basis.

2. For a discussion of these techniques see R.S. Pindyck and D.L. Rubinfeld (1976, pp.237-54).

3. See, L.G. Telser (1964), P. Nelson (1970), H. Demsetz (1979), and M. Hirschey (1981).

4. W.S. Comanor and T.W. Wilson (1967).

CHAPTER 4

Persistent Profits and Persistent Market Power

A. The Static Relationship between Profits and Market Power

We are now ready to address the central question of the study. What is the relationship, if any, between persistent profits and persistent market power?

To begin to answer this question we review the conditions for profit maximization within the firm. Assume first a homogeneous product industry in which each firm i has access to the same production technology, and thus has the same cost function $C(X_i)$. Each firm charges the same price P and the first order condition for profit maximization is

$$d\Pi_i/dX_i = P - X_i \frac{dP}{dX} \frac{dX}{dX_i} - c'(X_i) = 0 \tag{1}$$

where dX/dX_i is the change in industry output in response to a change in firm i's output. Defining

$$\frac{dX}{dX_i} = 1 + \lambda_i, \text{ the degree of cooperation}$$

$$\eta = -\frac{dX}{dP}\frac{P}{X}, \text{ the industry elasticity of demand}$$

$M_i = X_i/X$, firm i's market share and substituting into (1) and rearranging we get the now familiar condition (see, Cowling and Waterson, 1976)

$$\frac{P - c'(X_i)}{P} = \frac{M_i(1+\lambda_i)}{\eta} \tag{2}$$

The price-(marginal) cost margin for a firm in this industry should equal the product of its market share times the degree of cooperation in the industry divided by the industry elasticity of demand. There are two important observations to be made about eq.(2).

First, it is an equilibrium condition not a causal relationship. Firm i satisfies (2) by choosing an X_i given its cost function, the industry demand elasticity, and the degree of cooperation. X_i appears on both sides of (2). We could of course move M_i to the left side, and then would have the two exogenous variables left on the right. But then market share would be explained along with the price-cost margin by two variables that are typically unobservable. The second point to be made about (2) is that it should hold for all firms in the industry. If each expects the same quantity response to a change in its output $(1+\lambda_i)$, then since each charges the same price, faces the same industry demand, and has the same cost function, each should choose the same, profit maximizing X_i. All firms in the industy should be of the same size. Since this condition does not even roughly hold for most manufacturing industries, one of our assumptions must be blatantly false. One could rationalize different firm sizes by different assumed degrees of cooperation $(1+\lambda_i)$, but why if all firms have identical cost functions and prices should some expect different quantity responses from their rivals? More plausible is an explanation of different market shares based on different cost functions and/or prices.

But before turning to this case let us suppose for a moment that all firms within the industry did choose the same X_i; in accordance with (2). M_i is then the same for all firms and is simply one over the number of firms in the industry, which in turn is the Herfindahl index of concentration, H. Thus, when all firms in an industry satisfy (2) for the same $(1+\lambda_i)$, we have

$$\frac{P - c'(X_i)}{P} = \frac{H(1+\lambda_i)}{\eta} \tag{3}$$

The plausible range for $1+\lambda_i$ is from zero to N. If the other firms in an industry always offset any change in output by i we have the conditions of perfect competition. Firm i is powerless in affecting industry output, $1+\lambda_i = 0$. This is the assumption made by Fama and Laffer (1970) in their demonstration that the number of firms in an industry is irrelevant for determining industry profits.

Perfect collusion occurs when each identically sized firm matches a quantity change by _i_ with exactly the same quantity change, $1+\lambda_i=N$. In the range between 0 and N come all of the other plausible quantity responses of other firms in an industry to a change in a given firm's output. Except for the perfect competition case, when the price-cost margin equals zero, $1+\lambda_i$ takes on positive values. η is also positive, and the industry price cost margin is positively related to the level of concentration as measured by _H_.

Equation (3) thus gives a rationale for anticipating a positive association across industries between concentration and profits, the latter proxying the price-cost margin. Such a positive association can be further strengthened if one assumes that the average, anticipated degree of cooperation in an industry ($\overline{1+\lambda}_i$) is an increasing function of concentration, an assumption often made in the industrial organization literature[1)]. This assumption leads to the expectation that the key market structure variable for explaining _firm_ profit rates across industries is _industry_ concentration levels, at least in a world of homogeneous products and ignoring demand elasticity differences. Firm market shares should be identical within industries, and thus perfectly correlated with concentration across industries.

The restrictive assumption that all firms have identical market shares within an industry can be relaxed in several ways that preserve the basic properties of equations (2) and (3). Firms might be assumed to be uncertain about some of the parameters in (2), and choose X_i that deviate from the true profit maximizing X_i by some random disturbance μ. If μ is assumed to be normally distributed with mean 0, then both profits and market shares within industries will be normally distributed with the firm with mean market share having maximum profits. Across industries the dominant relationship is still one between _industry_ concentration levels and _firm_ profit rates.

The assumption that firms choose quantities around the industry optimum subject to a normally distributed random disturbance leads to the prediction that the size distribution of firms within an industry is normal, a prediction seldom consistent with observed industry size distributions (Hart and Prais, 1956; Simon and Bonini, 1958). A closer approximation is often the lognormal distribution (Silberman, 1967). A lognormal distribution of firm sizes will arise if firm growth rates follow a Gibrat process, i.e. the growth rates of firms in a given period are normally distributed around the industry growth rate, and each firm's growth rate in a given period is independent of both its size and previous growth rates. Such a process of growth would emerge in an homogeneous product industry in which all firms had constant returns to scale production functions, and new customers were distributed among firms via some stochastic process following a normal distribution. Other assumptions about the stochastic process determining firm growth rates lead to other predictions about the size distribution of firms (Ijiri and Simon, 1977). Assuming that firm growth rates follow some such stochastic process allows us to entertain the assumption that all firms are on the same cost function, and charge the same price, without having to assume at the same time that they are all of the same size. In particular, if all firms in an industry charge the same price, have the same constant average costs, then all will have the same price cost margin. But, if $(1+\lambda)$ varies across industries with concentration, then the predicted structural relationship across firms from different industries is between firm profit rates and industry concentration.

The assumption of homogeneous products and uniform prices, although often convenient analytically, is unrealistic for empirical work. Studies of actual prices and price setting invariably reveal significant and sustained differences in prices across companies in what appear to be the most homogeneous product industries[2). One reason such price differences can exist is that information about price is not perfect. Both buyers and sellers may be unaware of all of the prices being offered in the market. A second reason why price differences may exist is that even in a seemingly homogeneous product market, firms may differ in their speed, reliability and capacity to fill orders (see Shepherd, 1975, ch.4). Once imperfect information and product heterogeneities of any kind are introduced we can allow each firm to have its own price, P_i, and abandon the restrictive prediction that price-cost margins are the same across all firms within an industry.

Now let us return to the quantity setting decision of firm i, given that we now allow firms to be of different initial sizes and to have different information about the price or quantity decisions of other firms. Let us start from a situation in which all firms are in equilibrium with regard to their profit maximizing quantity decisions. Now suppose there is a shift in the industry demand schedule upsetting the equilibrium. Firms may learn of this shift in two ways: by gathering information directly from their own customers and other independent sources of information, or by observing the behavior of their competitors. These sources of information are complementary. A company's independent evidence that market demand has increased is reinforced by observing that its competitors are expanding production. To the extent firms within an industry are on average correct in recognizing demand shifts on the basis of information other than the behavior of their competitors, this behavior will be a reliable source of information about industry demand conditions for the individual firm. Now the likelihood that a given firm j observes the quantity or price action of another firm i in a world of imperfect information should be higher the larger firm i is. Thus, with imperfect information about demand changes and competitor quantity changes, if firms rely at least in part on the observed quantity changes of their competitors to predict industry demand shifts, the quantity response firm i can expect to a change in its quantity will be greater, the greater its market share. In a world of imperfect information and exogenously given market shares, market share (M_i) and the degree of cooperation ($1+\lambda_i$) should be positively related. This linkage will be reinforced to the extent the larger firms in an industry are assumed to have more or better information about market conditions, a reasonable assumption given the economies of scale inherent in information gathering.

Large firms can also be expected to elicit greater, corresponding quantity changes within industries of truly heterogeneous products. A frequent way of depicting product heterogeneity is in a spatial context in which the spaces are defined over product characteristics (e.g. Lancaster, 1968; Schmalensee, 1978). In this realm, a large firm can be envisaged as taking up a larger "area" in the market than smaller companies. The large firm is "closer" to more companies in the market and its decisions impinge on more. Should it decide to reduce quantity (raise price), more firms are given the room to follow a similar strategy than if a small company makes the analogous response.

The introduction of imperfect information and product heterogeneity, thus, leads to the prediction that market share and the degree of cooperation are positively related. This relationship in turn leads to the prediction that price-cost margins and market shares will be correlated, both within and across industries, the latter prediction qualified as usual by the white noise differing industry elasticities introduce into an across-industry regression.

The assumption that market share and the degree of cooperation are positively related resembles the dominant-firm-price-leadership hypothesis of the traditional industrial organization literature. Whether smaller firms are following the large market share firms as part of a tacit conspiracy or because they regard the bigger companies as visible, perhaps more reliable, barometers of market conditions, however relevant for antitrust purposes[4], is irrelevant as far as establishing a positive association between market share and price-cost margins. The important thing is that the small firms follow the large ones, and that the large ones know it. Together these two conditions lead to a relationship between M_i and $(1+\lambda_i)$, and thereby between market share and profits. We are thus led to two different, testable hypotheses about the degree of cooperation, the collusion theory predicts a relationship between concentration and profits across firms in different industries, the imperfect information market leader theory leads to a market share-profit relationship.

In addition to allowing firms to sell different products at different prices within the same heterogeneous product industry, we must allow firms to produce using different cost functions. Rewriting (3) in its most general form we now have

$$\frac{P_i - c_i'(X_i)}{P_i} = \frac{M_i(1+\lambda_i)}{\eta} \tag{4}$$

The price cost margin of i may be larger than for j because i charges a higher price, has lower marginal costs or for both reasons combined. Allowing firms to produce differentiated products under different cost conditions provides us with two alternative explanations for different firm sizes than simply the stochastic evolution of a Gibrat process. Firms may have greater market shares because their products appeal to a larger subset of buyers, or because they can charge lower prices due to lower costs. Unraveling these two alternative explanations is an important problem, and one which will prove to be largely insoluble in the context of this study. It should be kept in mind, however, that both explanations refer to firm specific product or cost advantages. In particular, if lower costs are hypothesized to have led to larger market share and a positive relationship between profits and market share, then one cannot conclude that the industry is subject to economies of scale of the traditional kind. Traditional economies of scale imply lower costs as a result of larger quantities produced and should over time bring about a concentration of industry output into a few, in the limit a single firm's hands. If all that differentiates firms is their chosen point on a cost curve then all firms must in the long run choose the same point unless there are constant returns to scale. Size and profits can be linked through cost differences only if cost advantages <u>result in</u> larger outputs, and these advantages can be maintained over time only if they are unique to specific firms.

B. Profits and Market Power in the Long Run

Equations (1) through (4) describe equilibrium conditions that pertain to a single firm or industry at a given point in time, for a given set of firms. Any equilibrium attained that results in nonzero profits will be erased over time by the entry and exit of firms, in the absence of entry or exit barriers. These barriers must exist, tautologically, to explain any persistent deviation from zero profits. Since our major concern is persistent deviations from normal returns, we are forced to bring in entry barriers and indirectly entry and exit decisions.

The decision to enter or leave an industry is an investment decision and like all investment decisions must rest on the promised return on investment relative to alternative investment returns. The key decision variable is a return on capital. Thus, consideration of the long run equilibrium leads to a focus on the return on capital rather than on sales. Later we shall want to introduce proxies for entry barriers directly, but for now we shall focus upon the key market structure variables isolated above, market share and concentration.

In chapter 2 we estimated projected profit rates at time equals infinity for each firm on the basis of the following equation

$$\pi_{it} = \alpha_i + \beta_i/t + \mu_{it} \qquad (5)$$

where π_{it} is firm i's relative deviation from the average profit level for the sample in year _t_. The $\hat{\alpha}$ s estimated from this equation will be used as the dependent variables in our subsequent equations. Eq. (5) assumes an initial deviation from some long run equilibrium profit rate and continuous convergence from above or below to the long run rate. Given the arbitrary nature of the starting point of our time series, imposing a common general pattern on all firms may seem restrictive. To allow for subsequent shocks in each company's profit history, we estimated the additional equations

$$\pi_{it} = \alpha_i + \beta_i/t + \gamma_i/t^2 + \mu_{it} \qquad (6)$$

$$\pi_{it} = \alpha_i + \beta_i/t + \gamma_i/t^2 + \delta_i/t^3 + \mu_{it} \qquad (7)$$

Equations (6) and (7) allow for respectively one and two changes in the path of profits over time while retaining the property that profits converge on some value, $\hat{\alpha}_i$, as time approaches infinity. While more polynomial terms could have been added, the constraints imposed by the number of degrees of freedom in the time series, the writer's time, and computer resources dictated stopping with a third degree polynomial. Moreover, allowing for many more twists and turns in the profit series would begin to stretch the notion of eventual convergence to a long run value.

As might be expected many, although less than half, of the equations estimating the $\hat{\alpha}$s exhibited Durbin-Watson statistics suggesting the existence of autocorrelation. Each profit equation for which the D-W statistic fell in either the range requiring acceptance of the autocorrelation hypothesis or the undefined range was reestimated after transforming the data to remove first order autocorrelation using the Cochrane-Orcutt procedure (see Johnston, 1972, pp. 259-265). As econometric theory predicts, the removal of autocorrelation expanded the standard errors of the estimated coefficients without apparently, systematically shifting the coefficients in one way or another.

Unlike in most empirical work, the dependent variables in our second stage equations are themselves parameters estimated from a first stage equation, given by (5), (6) or (7), as the case may be. Thus, our confidence in the accuracy of our estimates of long-run, projected profits varies from observation to observation. To take account of the varying accuracy of our estimates of $\hat{\alpha}$, we have estimated each second stage equation by a form of generalized least squares in which each observation in the second stage equation is weighted by one of the standard errors of the estimate of $\hat{\alpha}_i$, the observation for the dependent variable[5]. This form of GLS estimation has the intuitively appealing feature of weighting each observation in proportion to our confidence in the accuracy of the value of the dependent variable.

Table 4.1 presents the results from several equations for which the $\hat{\alpha}$ dependent variables have all been estimated using eq. (5), and the equations have been estimated via the Cochrane-Orcutt technique whenever the D-W statistic did not allow acceptance of the zero-first-order autocorrelation hypothesis at the 5 percent level.[6] Eq. 1 in Table 4.1 includes two variables. The first, Π_{50}, is the average return on total assets for the firm over the three years 1950-52 expressed as deviations from the sample averages. It was this variable that was used to rank the companies in Chapter 2 when testing for persistence. The Π_{50} variable tests the persistence hypothesis in a continuous way. How much of the deviation of a firm's profit rate predicted at time equals infinity can be explained by the deviation of the firm's profit rate from the norm in the years 1950, 1951, 1952?

The second variable in equation (1) is a 4-firm concentration ratio. We were able to construct two concentration ratios for each firm, in most cases, one for 1950 and one for 1972. The concentration ratio for firm $\underline{i}$ in 1950, is, for example, the weighted sum of the 4-firm concentration ratios for each of the $\underline{m}$ industries in which the firm operated in 1950, with the firm's sales in each industry serving as weights

$$C_{50}^{i} = \frac{\sum_{I=1}^{m} S_{iI} \cdot C_{4I}}{\sum_{I=1}^{m} S_{iI}}$$

where C_{4I} is the 4-firm concentration ratio in industry I, and S_{iI} is the $\underline{i}$th firm's sales in industry I. For 1972 we used Leonard Weiss' C_4 indexes adjusted for regional and local markets and import competition.

Throughout the study we shall use industry variables for each firm that are weighted averages of the relevant industry statistics as with this concentration variable. This practice imposes a strict linearity on the assumed relationship between the industry variable and firm profits that may bias our results. While one could experiment with nonlinear weighting schemes, such experimentation would increase the number of estimations to be made prohibitively.

Using weighted averages across different industries for each firm introduces aggregation biases of unknown magnitude and direction. Although we are not able to test for these biases here, the reader should keep them in mind when judging the significance or nonsignificance of the results.

We experimented with two weighted sums of the 1950 and 1972 concentration ratios. One was a simple average

$$C_{4M}^{i} = \frac{C_{50}^{i} + C_{72}^{i}}{2}$$

the other the projected C_4^i for firm $\underline{i}$ at $t = \infty$, assuming a time path as in eq.(5). This is analogous to our method of projecting market shares in Chapter 3.

$$C^i_{4P} = (23/22)C^i_{72} - C^i_{50}/22.$$

The projected concentration ratio performed much better than the simple average so we have employed it throughout the study. We also constructed analogous Herfindahl indexes using the market share data we have for 1950 and 1972. The C_4 and Herfindahl indexes performed almost identically, with the C_4 measure exhibiting a slight superiority, so we have reported only the results for the C_4 measures.[7] Given the heavy weight placed on the 1972 C_4 by our projection formula, we simply used the C_4 for 1972 as the projected concentration ratio C_{4P} for those firms in the 1972 sample, but not in the 1950 sample. Companies

Table 4.1

Results for Basic Market Structure Variables using GLS $\hat{\alpha}_i$ estimated from Eq. (5) after removing autocorrelation where necessary. Dependent variable α.

Independent Variables

Eq.	Const.	π_{50}	C_{4p}	M_p	$C_{4p} \cdot M_p$	M_p/C_{4p}	C^2_{4p}	N	$\bar{R}^2$
1.	-.335 1.65	.613 19.02	.080 2.26					553	.397
2.	-.592 4.02	.587 19.09		.715 7.26				553	.442
3.	.009 .04	.551 17.60	-.224 4.51	1.190 8.32				553	.462
4.	-.632 .519	.588 19.08		.815 3.75	-.007 .519			553	.442
5.	-.977 5.00	.582 18.99		.466 3.62		3.49 2.96		553	.450
6.	.206 .99	.537 17.04	-.460 4.56	1.044 6.81			.446 2.64	553	.469

Notes: $C_{4p} = (23/22)\ C_{472} - C_{450}/22$, $M_p = (23/22)\ M_{72} - M_{50}/22$

not in the '72 sample were dropped, giving us 553 observations.

The coefficient on Π_{50} is positive, large and highly significant, reconfirming the results of Chapter 2. Whatever factors led to firms having above or below normal returns during 1950-52 persist in generating above or below normal returns into the indefinite future. A company that earned double the average return on total assets in 1950-52 is projected to earn 61.3 percent more than the average into the indefinite future.

The coefficient on projected concentration is positive as expected under the collusion hypothesis, and significant at the 5 percent level, although the _t_-value is a bit disappointing given the number of observations.

Eq. 2 in Table 4.1 replaces projected concentration with projected market share for each firm. As with concentration, a firm's market share was calculated as a weighted average of the market shares it had in each of the industries in which it operated. Both a simple average of 1950 and 1972 market shares was tried, and the projected market share again outperformed the simple average.

The Π_{50} variable performs similarly in eq. (2) as in eq.(1), but the market share variable has both a much larger coefficient and a higher _t_-value than did concentration in eq. (2). A rise in the average concentration level for i's industries from .10 to .20 increases its projected profit rate by .8 of one percent of the average profit rate. A similar increase in _i_'s average market share increases its projected profit rate by 7.15 percent of the mean of the sample.

Eq. 3 includes both projected concentration and projected market share as separate explanatory variables. Both are significant but the coefficient on concentration is _negative._ Concentration in eq. 1 appears to have received a positive coefficient because it was proxying for market share, the simple correlation between these two variables is .72. Once the positive impact of market share on projected profits is separately accounted for, concentration's effect is negative. Assuming concentration is not proxying for some other omitted variable, its negative role in explaining profits can be rationalized, given our discussion of the previous section, through the degree of coopèration term $(1+\lambda_i)$. While such a negative impact on cooperation seems implausible when one considers only price and quantity setting, such a relationship has often been hypothesized to exist for various types of nonprice competition. Advertising has been argued to increase with industry concentration, and could lead to rivalrous interactions driving profit rates down[8]. Similar consequences from rivalrous R and D have been found to exist[9]. Here one must keep separate the effects of R and D and advertising on individual market shares and industry concentration. The results in Table 4.1, when linked to advertising and R and D suggest that a firm that successfully expands its market share through advertising or R and D will increase its profits, but that high concentration *per se* will reduce them. But further discussion of the possible role of advertising and R and D must await explicit introduction of these variables into the model.

Equations 4 and 5 explore the effects of concentration and market share further by means of interaction terms. Eq. 4 adds to Π_{50} and M_p an interaction term between concentration and market share. If high concentration reinforced the impact of market share on firm profits, this term would have a positive coefficient. Instead, the coefficient is virtually zero. In eq. 5 a term is added in which market share is divided by concentration. The higher market share is relative to concentration, the higher projected profits are. Eq. 5 presents in yet another way the fact that market share and industry concentration have opposing influences on a firm's profits. But the $\bar{R}^2$ for eq.5 is lower than for eq. 3. The separate effects of market share and concentration are best captured through a simple linear specification. Adding either the product or quotient interaction terms of equations 4 and 5 to eq. 3, where concentration and market share are both included, resulted in no improvement in explanatory in either case.

John Kwoka (1979, 1981) has argued that the best measure of concentration for explaining industry profits is the two-firm concentration ratio, and that the higher the third leading firm's market share is the lower industry profits are.

Kwoka argues that high third firm market shares tend to increase rivalry breaking down cooperation, and thus lowering industry profits. To test Kwoka's hypothesis we constructed a projected-third-firm's market share for each company in the same manner in which we constructed firm concentration and market share indexes, i.e. as a weighted sum of the market shares of the third largest firm in each of the industries in which a company operated. This projected-third firm market share performed almost exactly as projected concentration did. Indeed, the simple correlation between the two variables was .93. When added to eq. 3 the projected-third-firm market share led to no improvement in the explanatory power of the equation. Kwoka's speculation that the market share of the third leading firm in an industry proxies for profit-eroding rivalrous interaction in the industry would appear to be correct. But in our equation for explaining projected firm profits the 4 firm concentration ratio itself would appear to capture this rivalry adequately, in the presence of firm market share.

Several nonlinear specifications of the 3 main variables were tried beyond the interaction terms. The only one that led to a significant improvement in the fit of the equation was the inclusion of the square of the projected concentration variable (eq. 6). The coefficient on this term is positive indicating that the negative impact of concentration on projected profits follows a concave upward, parabolic form. The coefficients on the two concentration terms imply that the bottom of the parabola is reached at a C_4 slightly in excess of 0.5, so that the net impact of projected concentration on projected profits remains negative throughout the feasible range for concentration figures.

Table 4.2 presents the results using α_i from the equation yielding the highest adjusted R^2 of the 3 specifications (5), (6), and (7) presented above. Of the 602 equations estimated for the full sample of firms, the first and third degree polynominals performed about the same, eq.(5) having the highest $\bar{R}^2$ 243 times, eq.(7) 241 times. Eq.(6) had the highest $\bar{R}^2$ 118 times. In a couple of instances the $\bar{R}^2$ for the second or third degree polynominal was higher than that of a lower order specification, but the t values on the individual coefficients were much lower indicating severe multicollinearity. In these few cases we used the estimates from the lower order specification, since to use the estimates plagued by multicollinearity would be tantamount to throwing the observation away given our GLS procedure of weighting each observation in the second stage by the reciprocal of the standard error of the observation for the dependent variable.

One might hope that one of the reasons we observed autocorrelation, when we imposed eq.(5) on all firms, was that the proper specification was actually given by (6) or (7) and that a shift to one of these would both substantially improve the fit of the equation and eliminate autocorrelation[10]. While this pattern did occur for several firms, most still exhibited autocorrelation in the higher order specifications if they exhibited it in the lower order specification. We therefore once again applied the Cochrane-Orcutt procedure where required. The results in Table 4.2 are again estimated by the GLS procedure described above.

Two differences stand out between Tables 4.1 and 4.2. The $\bar{R}^2$s are considerably lower in Table 4.2 and the Π_{50} variable has a much lower coefficient and t value. Throughout this study the R^2s are calculated as the percentages of the variation in the weighted dependent variable explained by the weighted independent variables. Since the weights differ between Table 4.1 and 4.2, that which must be explained differs between the two Tables and the $\bar{R}^2$s cannot be used to argue, say, that the choice of dependent variable in Table 4.1 (all estimated from eq.5) is better than the choice in Table 4.2. The coefficient on Π_{50} in Table 4.2

clearly suggests that allowing the return on capital to follow a more flexible time path, as given by either eq.(6) or (7), yields projections of long run profits that are less supportive of the persistence of profits hypothesis. Nevertheless, the coefficients on Π_{50} are still quite large, and all t-values are above 7.0.

Beyond these two differences, the pattern of results in Table 4.2 is identical to that observed in Table 4.1. Concentration takes on a small, positive, but now insignificant, coefficient, when included alone with Π_{50} in the equation to explain projected profits. Market share again outperforms concentration as a single explanatory variable, and when both are included in the equation,

Table 4.2

Results for Basic Market Structure Variables using GLS $\hat{\alpha}_i$ estimated from best fit of Eqs. (5), (6) and (7) after removing autocorrelation where necessary. Dependent variable α

Independent Variables

Eq.	Const.	π_{50}	C_{4p}	M_p	$C_{4p} \cdot M_p$	M_p/C_{4p}	C_{4p}^2	N	$\bar{R}^2$
1.	-.048 .18	.400 8.60	.054 1.00					553	.115
2.	-.634 3.24	.374 8.44		1.043 7.06				553	.188
3.	.406 1.55	.313 7.06	-.419 5.80	1.88 9.24				553	.233
4.	-.730 3.36	.378 8.50		1.309 4.38	-.020 1.02			553	.188
5.	-1.340 5.19	.364 8.32		.488 2.46		6.596 4.12		553	.210
6.	.453 1.62	.309 6.81	-.475 3.13	1.859 8.42			.097 .38	553	.234

Notes: See Table 4.1

concentration again takes on a negative and significant coefficient. This equation (3) in Table 4.2, again yields the highest $\bar{R}^2$ of the 5 reported. The two interaction terms in equations (4) and (5) lead to the same conclusions as in Table 4.1, as does the inclusion of a quadratic concentration term (eq.6). The C_{4P}^2 term is positive as in Table 4.1, but insignificant. The $\bar{R}^2$ rises slightly when C_{4P}^2 is included, however, and this plus the noticeable drop in the _t_-statistic on C_{4P} suggest that eq. (6) is plagued by multicollinearity. Unreported equations using simple averages of concentration and market share rather than projected values, the Herfindahl index in place of the C_4, and the projected market share of the third leading firm, did not result in improved statistical performance over the results reported in Table 4.2.

C. Inferences

Before considering other possible determinants of firm profits, let us pause to consider the implications of the results we have obtained so far.

The two variables performing the best in explaining a firm's long run projected return on assets are firm specific variables: its initial profit level at the start of the 1950s, and its projected market share. The one industry variable tried, concentration, was significant when included with the other two variables, but of opposite sign to what is usually predicted under a collusion thesis. Concentration would appear to be related to the degree of interaction among firms, as typically assumed, but in a negative way. The suggestion was made, to be explored further below, that nonprice rivalry advances with industry concentration, at the expense of firm profits.

Two possible explanations for the positive association between market share and profits emerged from our analysis in the opening section. First, market share and profits may be jointly determined by the characteristics of a firm's product or of its production technique. Firms with high market shares may earn higher profits because they have superior products and/or production techniques. Alternatively, or in conjunction, firms with high market shares, whatever their cause, may anticipate more cooperative responses to their price and quantity changes, and thus may be able to charge higher prices, and earn higher profits.

The initial profit rate variable, Π_{50}, captures those product characteristic or production efficiency advantages a firm possesses that do not translate into higher market shares. If the competitive environment hypothesis were valid, the deviations in profits from the competitive return observed in the early 1950s would be entirely due to chance and would disappear. Our results, based on equation 5's projection of profits, indicate that over half of the deviation of a firm's profit rate from the sample mean observed in 1950-52 is projected to persist indefinitely, over and above the deviations accounted for by its market share or industry concentration.

The dominant importance of firm specific variables emerging from this first exploration of the data runs counter to much of the spirit of the industrial organization literature stemming from Edward Mason and Joe Bain. It is the characteristics of the firm itself, of its product or production technique, of its position in the market, that determine its profit rate. This observation is particularly important when one interprets above normal profits as arising from greater efficiency. The traditional way of taking into account efficiency differences across firms has been to assume that all firms within an industry have access to the same production technology. Efficiency differences across firms are then assumed to depend solely on the scale economy properties of the production function and the relative sizes of firms. This view of efficiency has led to the inclusion of estimates of minimum efficient plant or firm size in industry profit equations, and to the new-learning critique of the traditional concentration-collusion hypothesis[11)]. In the latter, it is argued that the usual positive association between profits and concentration is not due to more effective collusion in concentrated industries. Proof that this is so is claimed by observing that smaller firms in concentrated industries do not earn higher than normal returns as would be expected if they had the same average costs as the large companies, and benefitted by being under the same price umbrella collusion among the large raises.

But if high concentration were the result of scale economies available to all, we would anticipate a strong positive coefficient on our market share - concentration interaction term. It is the large firms in the concentrated markets that earn the higher profits. But this prediction was not supported. Rather it is the large firms in the unconcentrated markets that earn the highest long run returns.

It is, of course, possible that these conclusions will be altered as new variables are added to the equation. In particular, the firm effect measured by Π_{50} may prove to be industry related. We first turn to examine the impacts of a series of firm specific variables.

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Footnotes:

1. A classic reference for this assumption is William Fellner (1949).
2. See, for example, Gardner Means (1972) discussion of the Stigler-Kindahl price data as well as the latter study itself (1970).
3. See, Jesse Markham's (1951) discussion of barometric price leadership, and the general discussion by F.M. Scherer (1980), pp. 176-84.
4. Ibid.
5. For a discussion of this form of generalized least squares see Gary R. Saxonhouse (1976).
6. The results when one uses OLS without either adjusting for autocorrelation or weighting by the reciprocal of the standard error of the dependent variable are analogous to those presented in Table 4.1. For example, the OLS estimates of eq.(3) are (t-values under coefficients).

$$\hat{\alpha} = -\underset{2.70}{.144} + \underset{10.34}{.418}\Pi_{50} + \underset{0.48}{.063}C_{4P} + \underset{7.19}{1.557}M_P \quad N = 553,\ \bar{R}^2 = .272$$

7. Those who believe H is superior to C_4 as an index of concentration will be comforted to know that our calculated H varied in its reliability as a measure of the true H. In large industries where many of the 1000 largest are represented, e.g. petroleum refining, we have probably all of the top 15 or 20 firms with their market shares. Our calculated H based on the market shares we have in the 1000 largest sample is a good proxy for the true H in this type of industry. In small industries we have but 1 or 2 firms, and maybe not even the largest companies. In contrast, our C_4 measures are based on the reported census C_4 indexes.
8. See, Cable (1972) and Greer (1971). As one approaches monopoly levels of concentration, the level of intensity reverses; see Primeaux, Jr. (1981), Simon (1967), and Sutton (1974).

9. See, Grabowski and Baxter (1973), and Grabowski and Mueller (1978).

10. For a discussion of the methodology of using autocorrelation to determine the correct specification of a model, see Breusch and Godfrey (1981).

11. See, Harold Demsetz (1973, 1974), and John Carter (1978).

CHAPTER 5

The Impact of Size, Diversification, Growth, Capital Intensity and Risk on Projected Profits

The high explanatory power of the profit rate of firms in the early '50s suggests that there are firm-specific factors other than market share and concentration causing persistently high profits. In this chapter we examine several put forward in the literature. These additional factors have neither the same degree of theoretical support nor as much prior empirical evidence in their favor as do the market share and concentration variables. Nevertheless our data set is sufficiently unique that it behooves us to test the leading candidates to explain firm profitability others have put forward.

A. Diversification

Several hypotheses exist in the literature predicting a positive association between diversification and firm profits. As usual these break down into those predicting greater market power for diversified firms, and those hypothesizing greater efficiency. Market power advantages might arise through the exploitation of an advantage in one market in some other market, e.g., if a firm with monopsony power were to force one of its suppliers to purchase one of its products as a condition for purchasing the supplier's product[1]. Efficiency advantages can be claimed for diversified firms, because they are able to avoid some of the imperfections of the capital market. Promising investment opportunities in one market can be funded by drawing capital away from other markets, without jeopardizing the profitability of the investment by having to reveal its characteristics to raise capital[2]. Some initial, empirical work has found a positive association between diversification and profits[3].

We employed two measures of diversification: DIV, a Herfindahl-type index of diversification[4], and IND, a raw count of the number of industries in which the firm operated. If S_{iI} is firm i's sales in industry I, S_i its total sales over the m markets in which it sells (i.e. $S_i = \sum_{I=1}^{m} S_{iI}$), then

$$DIV = \sum_{I=1}^{m} \left(\frac{S_{iI}}{S_i}\right)^2$$

and $$IND = m$$

We constructed DIV and IND indexes for both 1950 and 1972 and then computed a projected DIV and IND index in the same way that we projected market share and concentration. The results from adding each of these to our basic equation with Π_{50}, M and C_4 are presented in Tables 5.1 and 5.2 using the two, alternative $\hat{\alpha}$ estimates as dependent variables. Neither variable is significant in either Table using a 5% level, two-tail test for significance. In Table 5.2, however, both variables pick up t-values in excess of 1.0. Since increasing diversification produces lower values of DIV, the negative coefficient on this variable along with the positive coefficient on IND both lend modest support to the hypothesis that increasing diversification is related to higher profitability[5].

B. Growth

Many studies have included an industry's growth rate in equations to explain industry profit rates on the grounds that in rapidly growing industries demand growth often outstrips supply growth allowing incumbent firms to earn short run above normal profits. Growth's inclusion in an equation, thus rests on the assumption that potential entrants and incumbents on average tend to underestimate the growth rates of fast growing industries, or face bottlenecks that preclude capacity expansion to meet growing demand.

Whether a firm's growth rate can be hypothesized to explain its profits by the same sort of hypothesis is less certain, particularly when we are working with a long run projected profit rate. On the other hand, a firm's growth rate might proxy for various firm-specific characteristics like superior management talent, a

Table 5.1

Projected Profits, Basic Market Structure Variables and Various Additional Firm Characteristics
($\hat{\alpha}_i$ estimated from $\pi_{it} = \alpha_i + \beta_i/t$, after removing autocorrelation where necessary.)

Dependent Variable α
Independent Variables

Eq.	Const.	π_{50}	C_{4p}	M_p	DIV	IND_m	G	S_{72}	S/K	n	$\bar{R}^2$
1.	.035 .18	.551 17.58	-.216 4.05	1.206 8.45	-.026 .67					552	.463
2.	.012 .06	.552 17.60	-.229 4.13	1.202 8.40		.0002 .04				552	.462
3.	.050 .25	.559 17.67	-.225 4.20	1.223 8.57	-.026 .68		$.24\times10^{-7}$ 1.68			552	.464
4.	.022 .11	.548 17.48	-.220 4.41	1.258 8.65				$-.89\times10^{-5}$ 1.82		552	.466
5.	.055 .28	.545 17.40	-.201 3.76	1.265 8.67	-.034 .88			$-.94\times10^{-5}$ 1.91		553	.465
6.	.093 .40	.559 17.64	-.226 4.21	1.224 8.56	-.025 .66		$.24\times10^{-7}$ 1.68		-.028 .34	552	.464
7*	-.485 2.67	.293 13.99	-.069 2.12	.788 7.49						552	.402
8*	-.804 4.16	.312 14.81	-.127 3.67	.831 7.99					.446 4.34	552	.420

Notes: * π_{50}, C_{4p}, and M_p are all multiplied by S/K in eqs. (7) and (8).

Table 5.2

Projected Profits, Basic Market Structure Variables and Various Additional Firm Characteristics
($\hat{\alpha}_i$ estimated from the best fit of equations (5), (6) and (7) of Chapter 4.)

Dependent Variable α
Independent Variables

Eq.	Const.	π_{50}	C_{4p}	M_p	DIV	IND	G	S_{72}	S/K	n	$\bar{R}^2$
1.	.491 1.86	.316 7.14	-.370 4.70	1.899 9.37	-.103 1.77					552	.238
2.	.415 1.59	.324 7.22	-.474 5.90	1.919 9.42		.0009 1.40				552	.236
3.	.503 1.90	.321 7.15	-.376 4.74	1.910 9.39	-.103 1.78		$.12\times10^{-7}$ .62			552	.237
4.	.406 1.56	.309 6.97	-.401 5.49	1.966 9.56				$-.14\times10^{-4}$ 2.03		552	.239
5.	.487 1.85	.310 7.05	-.341 4.29	1.974 9.63	-.109 1.88			$-.14\times10^{-4}$ 2.14		553	.243
6.	.240 .77	.319 7.21	-.361 4.58	1.899 9.38	-.107 1.85				.160 1.50	552	.239

superior product, and so on that are associated with persistently high (or low for inferior talent and products) profits. That is, growth may proxy for some of the firm-specific characteristics that Π_{50} is capturing.

Equation (3) in Tables 5.1 and 5.2 adds the firm's growth rate (1972 sales divided by 1950 sales) to our basic linear equation including diversification. The coefficient of growth is positive in both, significant in neither. The coefficient would be significant using the α estimates of equation (5), if we employed a 10 percent significance level, two-tail test. But, with 552 observations I think we are justified in dismissing any variable that does not pass at least a 5 percent cut off for one or the other of our dependent variable specifications. The firm's growth rate does not appear to be a leading candidate for a firm characteristic that is associated with long run profitability. To the extent that firm growth rates are correlated to industry growth rates, Π_{50} would also not appear to proxy for industry characteristics.

C. Size

Theoretical support for including the absolute size of a company, as opposed to its relative size as measured by market share, is somewhat lacking. One might associate many of the market power advantages often mentioned in reference to conglomerate size with size per se. That is absolute size might be viewed as a sort of interaction term between market share and diversification. In particular, a corporation's ability to exert political pressure and win profitable favors from the national or local legislatures might be most closely related to its absolute size. On the negative side, larger firms might suffer from greater internal control and information loss, bureaucratic inefficiencies of other sorts, what typically goes under the heading of X-inefficiency.

The earliest testing for the effect of size on profitability in the United States found a positive effect (Hall and Weiss, 1967). Empirical work in Europe has more typically uncovered a negative coefficient[6]. Our results conform to the latter pattern. The coefficient on 1972 sales is negative for both definitions of α, significant at the 5 percent level for the best-fit α, and almost so for α estimated from eq. (5) (see, eq. (4), Tables 5.1 and 5.2). Sales are measured in millions of 1972 dollars, so that the coefficient from Table 5.2, for example, implies that an increase in sales by $ 1 billion causes a reduction in long run projected returns on assets of 1.4 percent of the average returns for all firms, not a dramatic efficiency loss, but a loss nonetheless.

Diversification and sales are likely to be positively correlated and a natural question is whether size may be picking up (or detracting from) diversification's effect, or vice versa. Eq. 5 in Tables 5.1 and 5.2 include both the Herfindahl measure of diversification and 1972 sales. Both perform about the way they do when included separately, or slightly better, in terms of t-statistic. Large absolute size appears to have a modest, negative impact on long run profitability over and above the separate influences of market share and diversification.

D. Capital Intensity

The reader will recall that our basic equation predicting a positive relationship between profits and market share and/or concentration is

$$\frac{P_i - C_i'(X_i)}{P_i} = \frac{M_i \ (1+\lambda_i)}{\eta} \qquad (1)$$

Should $c_i'(X_i)$ be constant, the left hand side of this equation can be rewritten as the profit to sales ratio by multiplying numerator and denominator by X_i, and the profit to sales ratio has often been used as the dependent variable in structure-performance studies. Given the long run nature of our model we have chosen the profit to assets ratio as our dependent variable for reasons given above. If (1) is the correct specification of the short run price or quantity selection decision, one might wonder whether our use of total assets rather than sales results in some sort of bias in our estimates. Alternatively, capital intensity might be one of the characteristics of firms that is being captured by the Π_{50} variable, as might occur if imperfections in the capital market raise barriers to entry into capital intensive industries. Thus, the firm's capital intensity might be related to its long run profitability through an industry effect provied by the firm specific variable.

As our index of capital intensity, we used a simple average of the sales/total assets ratios of the firm in 1950 and 1972. Where it was not possible to estimate capital intensity in one of the years, we used the estimate for the other. The impact of capital intensity was tested with three different models. Eq. 6 in Tables 5.1 and 5.2 simply adds capital intensity (S/K) to one of our previously estimated equations. Its coefficients are of opposite sign and insignificant.

If one rewrites equation (1) above with Π/S on the left side, then this equation can be transformed into an equation to explain Π/K by multiplying both the left and right sides by S/K. If (1) were a superior formulation of the model than one in which Π/K appears as the dependent variable, an equation in which each right-hand-side variable is multiplied by S/K should give superior performance to the ones tested. Eq. 7[7)] replaces each of the three basic variables in our linear model by the product of that variable and S/K, i.e. the coefficient in the Π_{50} column is for $\Pi_{50} \cdot S/K$. The same basic pattern of coefficients appears, with all coefficients closer to zero. The $\bar{R}^2$ is considerably below that for the analogous equation in which S/K is not multiplied through.

In equation (8), S/K is added to the 3 variables included in eq.(7). The coefficient on S/K is highly significant in eq. (8), but even with its inclusion, the equations in which the key market structure variables appear as interaction terms with S/K, perform worse than when S/K is omitted. We conclude that our original formulation of the long run profit equation in which profitability is measured relative to total assets is to be preferred, and that capital intensity adds no explanatory power to this equation.

E. Risk

Risk is an important, potential explanation for persistent differences across firms in realized returns on capital. Our empirical work until now has tested for persistence of profits as if there were but a single competitive return on capital common to all firms. If firms differ with regard to risk, however, a risk averse capital market supplies capital to firms with higher risk characteristics at higher prices. The reason we observe some firms earning higher long run returns than others may be that they operate in an inherently riskier environment, and they must provide their owners with higher returns in the long run to compensate for the greater risks these owners bear.

Two types of risk measures are most frequently used in the empirical literature: the one based on the covariance of a firm's returns with those of other firms, the other based on the variance of its returns.

The logic behind the covariance-type measures is that if owners hold diversified portfolios of assets, it is the risk (variance) of the portfolio that matters to them, not the risk (variance) of the individual asset considered in isolation.

Furthermore, an asset's contribution to the riskiness of a portfolio is directly related to the covariance of its returns with that of the portfolio, the slope coefficient, $\hat{\beta}$, from a linear time series regression of the individual company's return on the return of the portfolio[8]. We calculated two $\hat{\beta}$-type measures of risk for each of our firms. The first is based on a regression of the annual return on total assets for each firm on the mean return for the sample in each year, using the 23 years for which our α's are estimated 1950-1972. Eq. 1 in Tables 5.3 and 5.4 report the results from adding this variable to our basic equation. The results are spectacular. The t-value is enormous, the adjusted $\bar{R}^2$ for each equation is 2/3 higher than without it. The sign of this variable, β_π, is opposite to what we expect, however. The firms with persistently higher profits are those whose return on capital does not move with that of other companies.

During at least the latter part of this time period there was a downward drift in the average return on assets for the companies in our sample. β_π in equation 1 may be serving simply as a trend variable, and equation 1 may be stating no more than that the firms projected to earn persistently higher profits based on the profit history from 1950-1972, are those that swam against the downward trend in profits over the latter part of that period.

Our second measure of $\hat{\beta}$ captures more of the cyclic covariability of a firm's returns, and is much less, if at all, dependent on trend factors.

For each company, the monthly returns on its common shares were used to estimate βs with respect to the market portfolio of all stocks, for five 5-year intervals spanning the years 1949-1973[9]. These β estimates will be dominated by the cyclical swings in stock prices that occur over short time spans. Moreover, the trend in market returns over much of this period was upward. $\bar{\beta}$ in equation 2 of Tables 5.3 and 5.4 is the arithmetic mean of the 5 βs estimated for the 5 time intervals spanning 1949-73. Where data were missing so that the βs for some time intervals could not be estimated, $\bar{\beta}$ was calculated from the estimates we could make. The coefficient on $\bar{\beta}$ in both Tables 5.3 and 5.4 is negative and statistically significant, although less spectacular-

Table 5.3

Projected Profits, Basic Market Structure Variables and Four Measures of Risk (α_i estimated from $\pi_{it} = \alpha_i + \beta_i/t$, after removing autocorrelation where necessary.)

Dependent Variable α

Independent Variables

Eq.	Const.	π_{50}	C_{4p}	M_p	β_π	$\bar{\beta}$	σ_π	σ_α	n	$\bar{R}^2$
1.	.152 1.04	1.096 32.21	-.142 3.88	.513 4.84	-.320 22.88				472	.741
2.	.524 2.29	.499 14.79	-.018 .23	.955 6.13		-.141 4.57			472	.474
3.	.506 1.89	.536 15.86	-.255 4.85	1.208 8.23			-.452 2.54		472	.458
4.	-.385 1.10	.551 17.60	-.190 3.34	1.176 8.19				1.613 1.37	552	.464

Table 5.4

Projected Profits, Basic Market Structure Variables, and Four Risk Measures for Best-Fit αs.

Dependent Variable α

Independent Variables

Eq.	Const.	π_{50}	C_{4p}	M_p	β_π	$\bar{\beta}$	σ_π	σ_α	n	$\bar{R}^2$
1.	.655 2.89	.950 17.66	-.373 6.04	1.134 6.59	-.400 17.11				472	.526
2.	.987 3.20	.243 4.92	-.180 1.54	1.621 7.18		-.150 3.28			472	.246
3.	.398 1.08	.287 6.00	-.461 5.87	1.903 8.98			.259 .91		472	.230
4.	.095 .23	.312 7.04	-.390 4.82	1.873 9.18				1.111 .97	552	.235

ly so than β_{π}. What is spectacular, however, is the interaction between $\bar{\beta}$ and the C_{4p} variable. The simple correlation between these two variables is .75 and inclusion of $\bar{\beta}$ in the equation completely wipes out the effect of C_{4p} in Table 5.3, and reduces it below the 5 percent significance cut off in Table 5.4. The high correlation between C_{4p} and $\bar{\beta}$ raises the possibility that concentration's negative role in explaining projected profits is not due to high concentration leading to high rivalry, but rather that it is simply proxying for $\bar{\beta}$. This argument could be pushed if we had an explanation for why $\bar{\beta}$ and C_{4p} should be positively correlated, and why $\bar{\beta}$ should be negatively related to long run projected profits. But no theory of which I am aware exists to explain the former, and the latter also runs counter to theory. Thus, for the moment I am inclined to retain C_{4p} as a possible candidate for inclusion in the equation, and attribute its weak performance when $\bar{\beta}$ is included to multicollinearity and a chance positive association between $\bar{\beta}$ and C_{4p}.

Some empirical work exists in which the current profitability of a firm (profits over total assets or equity) is used to explain its β estimated from monthly stock market returns[10)]. This work has found that firm profitability is negatively related to a firm's systematic risk. Share prices and perhaps dividend payouts of more profitable companies would appear to be less volatilly related to movements in the stock market, than less profitable companies. This negative correlation between risk and return can only be a short run, disequilibrium phenomenon, if product and capital markets are competitive over the long run. Our findings of persistent profit differences reject the hypothesis of the long run competitiveness of at least some markets, however. Perhaps, then the negative correlation between profitability and risk, as measured by our $\hat{\alpha}$ and $\bar{\beta}$ can be explained in the same way as in the single year cross-section studies. Perhaps, it is $\hat{\alpha}$ that is causing $\bar{\beta}$. If investors in the stock market can correctly identify companies with persistently high or low profitability, and if the volatility of the returns of firms with persistently high profits is less closely related to the market's volatility than is true for low profit firms, then the negative association between long run projected profits and $\bar{\beta}$ is explained by a reverse causality to that assumed in equation. Given that our β measure, $\bar{\beta}$, is an average over a 25 year period, and given that our profitability measure is a long run projection based on 23 years of data, if this reverse causality explanation for the negative association between projected profits and systematic risk is correct, then the negative coefficient on β in equation (2) is further confirmation of the existence of recognizable, persistent profit differences, and of the existence of permanent impediments to competition and/or the flow of capital to account for these persistent differences in profits. The market's treatment of the shares of firms earning persistently higher returns on total assets was such that the shareholders of these companies were able to enjoy lower systematic risk on the shares they held on average over 25 years.

It is perhaps worth remarking that the negative relationship we have estimated is between the long run profitability of the real assets of the firm and the systematic risk associated with its common shares. Once the stock market recognizes that a firm is and will be earning persistently higher returns on real assets, capita should flow toward the firm in the stock market driving the price of its shares up, and the return on them down, until the long run positive relationship between risk and returns one expects in a competitive market is established. The negative relationship we have estimated between the riskiness of common shares, and the projected profitability on real assets indicates that the flow of capital toward a firm in the stock market is not matched, fully, by the flow of real capital into the markets in which the company sells.

Whether the proper specification of the relationship between α and $\bar{\beta}$ is as assumed in eq. (2) in Tables 5.3 and 5.4, or one in which α explains $\bar{\beta}$ will not be resolved here. The results in Tables 5.3 and 5.4 more than suffice to reject the hypothesis that projected higher than normal profits can be accounted for in the context of a competitive market environment by the higher risks these companies experience.

σ_{π} is the variance in a company's return on total assets over the

23 year period 1950-72. Its coefficient is negative and significant in Table 5.3 (eq. 3), positive and insignificant in Table 5.4. The persistently higher (lower) returns projected for some firms cannot be accounted for by higher (lower) estimates of risk based on the variability of its profit rate over time.

As with β_π, σ_π is a combination of cyclical variability of profit rates, and long run trend: Companies that experience significant increases or declines in profit rates will exhibit high variances in profits, even though these trends may have been easily anticipated. As with our β measure, one might prefer a measure of risk that captures only the cyclical or unpredictable variability of a company's returns.

If the capital market makes predictions about the long run profitability of a company using the same kinds of data, and the same kinds of equations that we have used to project the long run profitability of a firm, then our confidence intervals around our estimates of long run profitability should correlate with the market's confidence intervals around its estimates of future returns. The standard error of our estimate of α might proxy for the stock market's confidence in its ability to predict the future profitability of the firm.

All of the equations presented in Chapters 4 and 5 are for weighted regressions in which the reciprocal of the standard error of our estimate of α, σ_α , has been used to weight each observation. Thus, the intercepts of these equations capture the impact of σ_α based on an unweighted specification of the equation.[11] An examination of the intercept terms in each of these tables indicates that virtually all of the intercepts for the equations in which α is estimated from a regression of Π_{it}, on 1/t are insignificant. The major exceptions here are when all terms in the equation are weighted by S/K, equations 7 and 8 in Table 5.1. The equations in which α is taken from the best-fit equation of the 3 first, second and third degree polynomials in 1/t indicate a more pronounced tendency for the intercept terms to be positive, but most are still insignificant.

However, the estimates in Tables 5.3 and 5.4 for equations (1), (2) and (3) present a more consistent pattern of positive intercept terms, with 4 of the 6 being significant. Note here, however, that we have used a smaller sample to estimate these equations, due to our inability to estimate β's from stock market returns for some companies.

Equation 4 in Tables 5.3 and 5.4 is estimated from our full 553 observation sample and includes σ_α as a separate linear term. Given the presence of an intercept, this specification tests for a nonlinear relationship between α and σ_α Neither the intercept nor the coefficient on σ_α are significant in either equation. The coefficients of the other variables in the equation are not affected by the inclusion of σ_α as a separate term. Although there is some tendency for the standard errors of our estimates of long run profitability to be positively related to these estimates, as one expects if σ_α is regarded as a measure of risk, the relationship is fairly weak and does not in any way alter our earlier conclusions regarding the impact of market share, concentration and the firm specific factors represented by Π_{50}.

F. Evaluation

The search for firm-specific characteristics that account for the persistence of profits has not uncovered many leading candidates, beyond the market share variable. The coefficient from the time series regression of the firm's annual profit rate on the sample mean profit rate, β_π, proved highly significant but suggested only that firms that exhibit persistently higher profits did not follow the downward trend in profit rates the average firm in the sample followed.

More intriguing was the negative and significant coefficient on the average β over the 23 years of our sample period based on monthly stock market returns. That this variable's coefficient was negative indicated most convincingly that the higher than normal returns projected for some companies could not be rationalized within the context of the long-run competitive environment hypothesis by these firms having greater risk. Instead, firms that earn persistently above normal profits are less risky investments, as one's intuition suggests. Causality more likely runs from persistent profits to lower risk, and the negative coefficient on $\bar{\beta}$ can be interpreted as further confirmation of the persistence of profits phenomenon. The market appears to be able to identify the same long-run projected profits we do, and to attach lower systematic risk to companies with higher projected long-run profits. Companies with high projected profits are doubly blessed.

Beyond the risk-related variables the only firm characteristic to exhibit a sufficiently strong relationship to projected profitability to warrant continued consideration as an important explanatory variable, was sales. Large size, as measured by 1972 sales, was moderately, but statistically significantly, associated with lower projected profitability. Big firms would appear to experience some X-inefficiencies.

Our quest for firm-specific characteristics to account for long run differences in profitability has not produced a very rich harvest. We turn now to consider whether industry characteristics are associated with long run profitability.

Footnotes:

1. The classic discussion of the market power advantages stemming from diversification is by Corwin Edwards (1955).

2. Assuming M-form organizational structures now go hand and hand with diversification one can cite Oliver Williamson's (1970,1975) arguments for the efficiency advantages of the M-form as justification for expecting a positive impact of diversification on profits.

   Somewhat more indirectly, diversification could lead to more basic research, higher pay offs from one's research effort, and thereby in the long run greater profitability. On this see, Richard R. Nelson (1959) and Henry G. Grabowski (1968).

3. See, Stephen A. Rhoades (1973) and John R. Carter (1977). Subsequent work by Rhoades finds the reverse effect, however (Rhoades, 1977).

4. This measure of diversification was most exhaustively investigated by Charles H. Berry (1975), although he used 1.0 minus the index we use.

5. These results do not bear directly on the hypothesis that multi-market contact between diversified firms facilitates cooperation (greater $1+\lambda_i$ from the model of Chapter 4) and thereby higher prices and profits, as put forward and tested recently by John Scott. We have not undertaken the effort to measure multi-market contact. See, John Scott(1981a, b).

6. See, A. Jacquemin and M. Cardon (1973), and A. Jacquemin and W. Saez (1976). Note also M. Marcus's (1969) response to Hall and Weiss.

7. Analogous results were obtained for both choices of α, so we report only those in Table 5.1.

8. See, Sharpe (1964), and any finance textbook, e.g. Fama and Miller (1972).

9. My deep gratitude goes to Carl Schwinn for estimating these βs.

10. See, U. Ben-Zion and S.S. Shalit (1975,1982).

11. Using eq.(1) of this chapter or the analogue equations of chapter 4 as our theoretical rationale for including market share and concentration in the equation leads to an equation for estimation purposes without an intercept. By allowing for an intercept in our GLS equations we have implicitly included σ_α, our deflator, as a separate term in the undeflated equation that does not contain an intercept. The likelihood that this laxity in not forcing the GLS equations through the origin has not produced important biases is high, given the statistical insignificance of the intercept terms generally observed.

CHAPTER 6

Industry Level Determinants of Persistent Profits

The traditional explanation for why profits could persist over time is that some barrier to entry exists blocking other companies from entering the industry and driving profits down (Bain, 1956). Thus, the notion of an entry barrier is closely tied to the definition and characteristics of the industry. Bain discusses several types of entry barriers among which the most important are capital cost barriers, scale economies, product differentiation, control of key patents, control of key inputs like raw materials. Of these, considerable doubt has been cast on economies of scale as an explanation of persistent profits due to the weak performance of the market share - concentration interaction term. The lack of significance of the capital intensity variable may also detract from the capital barriers hypothesis, but it is a crude measure. Test for the existence of industry entry barriers must be made directly.

The main difficulty in testing for the presence of entry barriers is to measure them. What units does one use to quantify product differentiation, or control over a raw material? Moreover, various potential barriers may act in tandem to raise an impediment in one industry that they do not succeed in raising in another, e. g. certain product characteristics and patent protection. However one measures them and regardless of how one entry barrier interacts with another, the basic idea underlying the concept of an entry barrier ties it to the definition and characteristics of an industry. To be in industry X is to be protected by whatever entry barriers surround it. All firms within X should have their profits raised in proportion to the height of the entry barriers surrounding it. Any firm having part of its sales in X will have its profits raised accordingly. The most direct way to test for the existence of industry entry barriers is obviously to include the sales of the firm in each industry as separate explanatory variables, and this is the procedure we follow.

Recall that our profit rates for each firm are measured as deviations around the sample mean for each year. In the long run, no firm or industry can survive that does not earn the competitive return on capital. This return should provide a lower bound to our estimates of projected long run profits. For any given firm, random factors and unknown biases may lead to an estimate of projected long run profits below the competitive return. But for an entire industry it is far less likely that our projected profit estimates will lie below the competitive return.

While projected profits should not in general lie below the competitive return, they can obviously lie above it to the extent firms earn rents reported as profits. One expects the mean projected profit rate for our sample to lie above the competitive return, therefore, by an amount reflecting the average monopoly rent being earned. The long run projected profit rates of firms or industries could be negative, therefore, without being below the competitive rate of return. To the extent the competitive return is a lower bound to our projected profits estimates, one expects a positive skew to the projected profit estimates.

Richard Caves and Michael Porter (1977) have recently introduced the concept of <u>exit</u> barriers. Impediments to leaving an unprofitable industry might result in all firms earning losses for some time, and a projection of an industry profit rate below the competitive return on capital. Nevertheless, exit barriers must be inherently more transitory than entry barriers, bankruptcy being the ultimate form of exit, and one still anticipates industry profit projections below the mean to be more closely bunched and perhaps fewer in number. Given the existence of exit barriers, we must allow, however, for some industry profit projections to lie below the long run competitive return on capital. These projections would presumably be for industries in which future exits, i.e. beyond the 1950 - 72 sample period, occur.

A. Empirical Estimates: Industry Effects

In constructing the market share and concentration variables, we took advantage of the rich detail of the FTC Corporate Patterns data base to define industries as narrowly as at the 5-digit level when our knowledge of the industry suggested that this was the appropriate level of disaggregation. Our choice of industry definitions resulted in a division of the 20 2-digit Census of Manufacturing Industries in 1972 into 775 separate industries, obviously too many to be included in a regression equation with a maximum of 552 observations. We thus chose to aggregate up to the 3-digit level, giving us a total of 143 industries. We then proceeded as follows: we first regressed the projected profits variable on the set of industry vectors consisting of the percentage of each firm's sales falling in each of the respective industries in 1972. Since the SHAZAM regression package we used has a constraint of 99 independent variables in any one regression, this step had to be conducted in two stages. We next dropped all industries whose coefficients were insignificant at the 5 percent level (two-tail test), and combined all 3-digit industries within the same 2-digit industry having coefficients insignificantly different from one another.

Twenty-one industries had coefficients significantly different from zero (5 percent level), when only the industry vectors were included as independent variables. Of these, both the coefficient and standard error for industry 254 were so large as to be implausible. The results from including just the remaining 20 industries, combining the 4 with coefficients insignificantly different from one another, are presented in eq. 1, Table 6.1. Two of the 16 industries fail to take on statistically significant coefficients when only these 16 are introduced. Equation 2 adds the Π_{50} variable. It performs as before, and robs two additional industries of their explanatory power (the two combined industries 201 + 202 and 373 + 374). The eight significant coefficients divide themselves into

Table 6.1: Projected Profits Regressed on Industry Vectors

Dependent Variable α[a]

Independent Variables	1	2	3	
Constant	- .268 1.60	- .129 .96	- .055 .31	
π_{50}		.545 17.24^{xxx}	.311 6.90^{xxx}	
201 + 202 Meat and Dairy	- .266 2.85^{xxx}	- .036 .47	- .049 .46	
204 Flour and Cereals	.404 4.14^{xxx}	.441 5.62^{xxx}		
207 + 208 Cooking Oils, Beer, Distilled Spirits	- .331 3.23^{xxx}	- .237 2.87^{xxx}	- .193 1.49	
251 Furniture	.201 1.05	.195 1.27		
275 Books			.291 1.88^{x}	
283 Pharmaceuticals	.928 4.94^{xxx}	.593 3.89^{xxx}	1.104 4.42^{xxx}	
284 Soaps and Detergents	.322 2.08^{xx}	.255 2.05^{xx}	.572 3.44^{xxx}	
331 Steel Mill Products	- .238 3.36^{xxx}	- .160 2.81^{xxx}	- .340 4.01^{xxx}	
342 Cutlery, Razors, Handtools			1.492 3.51^{xxx}	
351 + 358 Generators, Engines, Laundry and Refrigerator Equipment	.520 4.64^{xxx}	.314 3.46^{xxx}	.383 2.83^{xxx}	
352 Farm Machinery	- .488 2.54^{xx}	- .377 2.44^{xx}		
354 Machine Tools	.748 4.71^{xxx}	.487 3.79^{xxx}	.540 2.84^{xxx}	
373 + 374 Ships and Railroad Equipment	- .532 3.45^{xxx}	- .213 1.70^{x}	- .440 2.63^{xxx}	
381 Engineering and Scientific Instruments			- 1.516 1.51	
384 Surgical and Medical Instruments	- .632 .99	- .497 .97	- 1.244 1.59	
386 Photographic Equipment			.969 3.99^{xxx}	
$\bar{R}^2$ / n	.181 / 552	.472 / 552	.248 / 552	

a) Equations 1 and 2 estimated from $\pi_{it} = \alpha_i + \beta_i / t$, after removing autocorrelation where necessary. Equation 3 uses "best fit" α_s.

xxx Significant 1 percent level, two-tailed test.

xx " 5 " " , " " .

x " 10 " " , " " .

5 positive and 3 negative. They imply fairly substantial deviations from the norm for presence in some industries. For example, the coefficient for the pharmaceutical industry (283) indicates that full participation in this industry raises the projected profit rate of a company to 59.3 percent above the average. The representative steel mill (331) has projected profits 16 percent below the average.

Equation 3 presents the analogous results using the best-fit α. A slightly different mix of industries took on statistically significant coefficients for the alternative choice of dependent variable, although the total number of industries with significant coefficients was about the same. The most important additions were cutlery and razors (342) in which the typical firm was projected to earn profits one and a half times the sample mean, and photographic equipment (386) where the representative firm was projected to earn almost double the average profit rate. Two industries (381 and 384) took on large negative coefficients when the best-fit α was used as dependent variable, but neither coefficient was significant at even the 10 percent level.

The signs on the industry vectors in equations 1-3 are in general accord with one's priors based on casual observation of the manufacturing sector. The major surprise contained in Table 6.1 is the small number of industries with statistically significant coefficients. The basic thrust of the industrial organization literature for more than a generation has been to define profits at the industry level and account for them with industry characteristics. Market power explanations of profits have emphasized collusion <u>among the members of an industry.</u> Efficiency explanations have assumed the existence of an industry-wide technology leading to scale economies. The possibility that above normal profits could be sustained over the long run has been very closely tied to the idea of barriers to entry <u>into an industry,</u> as already mentioned.[1)] Given this literature one expects more than the mere handful of industry vectors that emerge as significantly related to long run profitability. Of course, by aggregating up to the 3-digit level we may have lost some industry distinctions that would have proved significant had it been possible to stay at the level of disaggregation used in defining market share and concentration. On the other hand, many of the characteristics associated with the idea of entry barriers are likely to be characteristics that one can apply at the 3-digit level nearly as well as at the 4-5 digit levels. Since the existence of entry barriers is a necessary condition for long run sustainable profits, if we assume profitability is caused by industry factors, our use of long run projected returns should to some extent justify the 3-digit definition. In any event, a finer slicing of the industry definitions seemed infeasible.

B. Industry Effects: Advertising and Patent Intensity

A favorite proxy for the entry barrier product differentiation has been industry advertising intensity ever since Comanor and Wilson (1967) first introduced this variable into an industry profits equation. By and large it has been one of the more consistent performers in structure-performance models[2). A conceptual problem arises in its use in cross-section equations, however, in that the variable must capture both the potential for product differentiation and the extent to which this potential is pursued on average by members of the industry. For example, beer and toothpaste are both consumer goods that can and are differentiated by means of advertising. Yet the potential for differentiating these two products from the products of other industries may be quite different, so that the amount of advertising a profit maximizing monopolist would undertake in each might be quite different. Julian Simon (1967) and John Cable (1972) have both shown, furthermore, that the amount of industry advertising that can be expected in an oligopolistic market structure exceeds the amount a profit maximizing monopolist would undertake. Thus, differences in advertising across industries are likely to reflect differences in the inherent potential for profitably differentiating the products, market structure differences, and differences in the degree of rivalry or cooperation, that also in part are related to market structure differences. Differences in advertising across industries will reflect both differences in the potential for product differentiation through advertising and differences in the effective realization of this potential.

Exactly which effect is being captured by advertising in the various studies that have appeared in the literature is not clear. Comanor and Wilson (1967), for example, limit their analysis to consumer goods industries, obviously assuming a different relationship between advertising and profits for consumer goods industries than for producer goods. But what difference is being captured when one observes consumer goods industry X devoting a larger fraction of its sales to advertising than industry Y? Does this mean that product X is inherently more differentiable in the eyes of consumers than Y, and both industries are exploiting the potential for profitable differentiation optimally? Or is industry X exploiting to a greater extent the same potential for product differentiation that exists in Y. Under the latter construction the positive coefficient usually found on the advertising variable can be interpreted as is customary in regression work, i. e. if Y were to increase its advertising to the level of X its profits would rise to those of X. Under the former construction, however, Y is already conducting the optimal level of advertising and any change in its advertising intensity will only lower its profits. Under this construction the level of profits and advertising intensity are both jointly determined by the underlying characteristics of the product and the resulting consumer preference function. If this is the proper interpretation of the Comanor and Wilson results, then it is not clear why the advertising variable cannot be included in producer goods equations, or in a cross-section of both consumer and producer goods. Of course, for some industries the potential for product differentiation through media advertising may be very low, as might be the case for most producer goods industries. If advertising were included as a separate variable in a sample with only producer good industries, there might be so little variation in it across industries to rob it of any statistical explanatory power. But in a sample of producer and consumer good industries it would seem that advertising intensity may be able to play the same role explaining differences in profitability across consumer and producer goods industries due to inherent differences in the potential for product differentiation as it does within the consumer goods sector.

Similar considerations apply to the distinctions within the consumer goods area drawn by Boyer (1974), Nelson (1970, 1978), and Porter (1974). This is not to say that these writers are not correct in arguing that there exist important differences in the potential for increasing profits through advertising that go beyond the distinction between consumer and producer goods. Quite to the contrary it is to question whether any of the binary classifications these studies make, or that anyone else could make, are adequate to capture all the differences in potential differentiability through advertising that exist. We have chosen, therefore, not to try to classify products according to their potential for differentiation through advertising, and to include the level of industry media advertising as an explanatory variable for each firm, recognizing that it captures but one dimension of the potential for product differentiation, and that it combines both this potential and the extent of its realization.

An obvious second possible dimension of product differentiation is the physical characteristics of the product, perhaps protected by patents. We shall include the level of industry patent intensity. One possible objection to this variable is that the potential for physical product differentiation, and the potential to patent physical differences may vary from industry to industry and from product to product. Thus, in a cross-section an industry patent intensity variable may capture both potentials, and differences in the propensity to patent may blur the sought after product differentiation potential[3].

We constructed two industry advertising intensity and two patent intensity variables for each firm based on their 1950 and 1972 sales. For advertising we took 1963 IRS industry advertising to sales figures and calculated a predicted advertising to sales ratio for each firm based on their 1950 and 1972 sales distribution. The year 1963 was chosen as being roughly in the middle of the sample period and thus typical of the entire period. For firm i with 1950 sales in industry j of S_{ij}^{50}, and the advertising to sales ratio in j in 1963 given by A_j, we have

$$A_i^{50} = \sum_{j=1}^{m} S_{ij}^{50} \cdot A_j / S_i^{50} , \quad S_i^{50} = \sum_{j=1}^{m} S_{ij}^{50}$$

We then constructed an industry advertising intensity index for each firm as the simple average of the 1950 and 1972 figures ($A_i = \frac{A_i^{50} + A_i^{72}}{2}$). If either 1950 or 1972 sales were unavailable the other year's figure was used. This variable appears as IADV/S in Table 6.2.

The IPAT/S variable was constructed analogously. The numerator was the average number of patents assigned to an industry over the period 1966 - 68, the denominator 1967 shipments from the Census of Manufacturing[4]. Weighted average industry patent to sales ratios were constructed for each firm using both its 1950 and 1972 sales by industry as weights. The variable included in Table 6.2 is a simple average of the two numbers.

The first two equations in Table 6.2 include the advertising and patent intensity variables, Π_{50}, the industry dummies and concentration and concentration squared. All variables are industry level variables except Π_{50} . The advertising intensity variable is positive and significant in both equations. Patent intensity is significant in neither. The Π_{50} variable performs as before. A U-shaped relationship between profitability and concentration is apparent in both equations.

The addition of advertising intensity has a noticeable effect on the size and significance of the coefficients on the flour and cereals industry, and on soaps and detergents. The former drops from .44 to .28, soaps and detergents becomes insignificant for both choices of dependent variables.

The lack of significance of the patent intensity variable is somewhat unexpected given previous results suggesting high returns to R and D expenditures. One possible explanation is that the returns to patents are so variable across industries so as to make patent intensity a poor predictor of profitability, although Branch (1974) has used patents to explain profits. David Ravenscraft's (forthcoming) results using Line of Business data are more in line with those reported here. He too finds advertising expenditures and profitability positively related at the Line of Business level, but R and D expenditures and profits were not positively related.

The strong, positive performance of advertising intensity is consistent with a long list of previous empirical work. Firms operating in industries with high advertising intensity have higher long run projected returns. Under the explanation given above, these higher returns are supposed to arise from the greater potential for successful product differentiation in advertising intensive industries, an interpretation reinforced by the results reported in the following section.

Before turning to these, mention must be made of the possible bias caused by our use of advertising flows instead of a stock measure. Several studies have pointed out that the coefficient on advertising may be upward biased to the extent that (1) high advertising intensity is associated with high values of intangible capital stocks, and (2) advertising stock depreciation rates are low so that advertising is not merely replacing depreciating capital[6]. Unfortunately the extent of the bias, if any, depends crucially on the measures of depreciation rates and these have varied from as low as 5 % per year (Bloch, 1974) [7] to 100 percent (Clarke, 1976). Given this discordance of view I have decided not to try and correct for this problem, but merely note the possible upward bias in the estimate.

C. Industry and Firm Effects Combined: Best Overall Fit Equations

In this section we report the results when both firm- and industry-level variables are included in the same equation. All firm-level variables reported in Chapters 4 and 5 were tried except for the risk variables. The latter were omitted because they took on the "wrong" signs in the equations reported, and thus either did not lend themselves to a reasonable interpretation or suggested reverse causation. Since the focus of this study is not the long run risk - return relationship, but the market power and efficiency related determinants, it suffices for our purposes that inclusion of risk factors does not overturn the major conclusions of the study.

In addition to the variables already discussed we tested for the effects for interaction terms between the concentration and market share variables on the one side, and advertising and patent intensity on the other. Of these, only the product of market share and industry advertising proved to be significant. Once the firm specific market share and industry specific concentration and advertising intensity were all included several of the previously significant industry effects and firm charcteristics were no longer significant. Equations 3 and 4 in Table 6.2 report our best-overall fit

Table 6.2: Projected Profits Regressed on Advertising and Patent Intensity, and All Significant Variables

Independent Variables	1	2	3	4
Constant	.137 .70	.299 1.13	.060 .28	.044 .17
$\bar{\pi}_{50}$	.491 15.77^{xxx}	.282 6.31^{xxx}	.497 16.83^{xxx}	.285 6.81^{xxx}
201 + 202 Meat and Dairy	- .022 .31	- .073 .71		
204 Flour and Cereals	.283 3.53^{xxx}		.259 3.38^{xxx}	
207 + 208 Cooking Oils, Beer, Distilled Spirits	- .175 2.23^{xx}	- .177 1.42	- .204 2.69^{xxx}	.233 1.96^{xx}
251 Furniture	.279 1.93^{x}		.217 1.54	
275 Books		.250 1.67^{x}		.212 1.48
283 Pharmaceuticals	.609 4.23^{xxx}	1.013 4.26^{xxx}		.275 1.65^{x}
284 Soaps and Detergents	- .032 .25	.108 .63		
331 Steel Mill Products	- .060 1.07	- .179 2.11^{xx}	- .076 1.39	- .190 2.34^{xx}
342 Cutlery, Razors, Handtools		1.396 3.44^{xxx}	.833 2.55^{xx}	1.221 3.13^{xxx}
351 + 358 Generators, Engines, Laundry and Refrigerator Equipment	.252 2.82^{xxx}	.348 2.54^{xx}	.266 3.14^{xxx}	.353 2.76^{xxx}
352 Farm Machinery	- .593 3.89^{xxx}		- .425 2.85^{xxx}	
354 Machine Tools	.655 5.21^{xxx}	.715 3.84^{xxx}	.524 4.27^{xxx}	.469 2.68^{xxx}
373 + 374 Ships and Railroad Equipment	- .113 .95	- .249 1.55		- .209 1.34
381 Engineering and Scientific Instruments		- 1.583 1.66^{x}		- 1.814 2.02^{xx}
384 Surgical and Medical Instruments	- .612 1.26	- 1.291 1.74^{x}	.580 1.44	
386 Photographic Equipment		.782 3.26^{xxx}		.525 2.28^{xx}
IADV/S	.055 5.09^{xxx}	.099 6.95^{xxx}	.041 3.81^{xxx}	.064 4.33^{xxx}
IPAT/S	.028 .90	- .012 .25		
M_p			.643 4.11^{xxx}	1.353 6.12^{xxx}
$M_p \cdot$ IADV/S			1.408 2.29^{xx}	2.228 2.87^{xxx}
C_{4p}	- .861 7.34^{xxx}	- .961 5.44^{xxx}	- .634 5.50^{xxx}	- .448 5.09^{xxx}
C_{4p}^2	1.265 7.60^{xxx}	1.200 4.83^{xxx}	.677 3.84^{xxx}	
DIV				- .067 1.20
S_{72}				- $.778 \cdot 10^{-5}$ 1.24
$\bar{R}^2$ / n	.540 / 552	.328 / 552	.559 / 552	.373 / 552

Notes: Equations 1 and 3 estimated from $\pi_{it} = \alpha_i + \beta_i / t$, after removing autocorrelation where necessary. Equations 2 and 4 use "best fit" α_s.

xxx Significant 1 percent level, two-tailed test.
xx " 5 " " , " " .
x " 10 " " , " " .

equations for the two alternative choices of dependent variable after eliminating any variables with t-statistics less than 1.0.

The Π_{50} variable has the highest t-statistic for both choices of dependent variable. Its performance indicates that there exist important attributes of individual firms unrelated to their market shares, the identities of the industries in which they sell, or the structural characteristics of these industries like advertising intensity and concentration. Anywhere from a quarter to one half of the divergence in profit rates observed at a given point in time, like 1950 - 52, persists indefinitely over and above the differences accounted for by market share and the other factors.

The second most important variable on average is market share. Indeed, in equation 4 market share is actually more strongly related to projected profits than Π_{50}, once the $M_p \cdot$ IADV/S variable is taken into account. The performance of Π_{50} and M_p together in the two equations clearly highlight the importance of firm-specific factors in accounting for the persistent profitability phenomenon. When the dependent variable is estimated exclusively by a first order regression of profits on the reciprocal of time, eq. 3, firm-specific characteristics that do not translate into high market shares as well as high profits dominate, for the more eclectic choice of dependent variable, eq. 4, firm-specific advantages seem to be better captured by market share.

The association between market share and profitability is strongly affected by the level of industry advertising. Eq. 3 implies that an increase in market share of .10 for a firm in an industry with no media advertising is associated with 6.43 percent higher profits than the average firm. The same difference in market shares for firms in a relatively advertising intensive industry with, say an A/S = .05, is associated with 76.8 percent higher returns than the average company. The estimates from eq. 4 imply that a 10 percentage point market share difference in an industry with a 5 percent advertising sales ratio is associated with almost 125 percent higher long run projected profits than the sample average.

The importance of the industry advertising intensity variable and the market share - advertising interaction reinforce our conjecture that the advertising intensity variable captures the potential for product differentiation in the industries in which the company operates. Firms in industries with high potential for product differentiation earn on average greater profits than other companies, and firms within these industries that appear successful at product differentiation as measured by market share earn still higher profits.

Concentration has a negative net effect on profitability in equation 3 up through a projected C_4 of .94, and a negative average and marginal effect on projected profits in eq. 4. Inclusion of the market share variable knocks out $C4_p^2$ in eq. 4. In chapter 4 we saw that concentration enters an industry profit equation through the degree of cooperation or interaction effect. The negative coefficients on the concentration variable imply that this interaction is largely rivalrous. In considering this result it must be kept in mind that the effects of firm specific factors leading to large individual market shares are taken account of separately in the equation. The absence of the market share variable in most other structure performance studies may help explain why our results differ from theirs. While successful product differentiation can be expected to lead to a higher market share and greater profits, this success will be somewhat diminished in an industry in which other firms are also successful, so that several firms have high market shares leading to high concentration.

With the market share, concentration and advertising variables in the equations, only 9 industries in eq. 3 and 10 in eq. 4 have coefficients significantly different from zero at the 5 percent level. The most noticeable change between equations 1 and 2 brought about by the addition of the market share variables is the diminution in size and significance of the coefficient for the pharmaceutical industry. For the eclectic choice of dependent variable it falls to 1/4th of its value in eq. 2 and is barely significant at the 10 percent level. For the alternative choice of dependent variable it does not sustain a t of even 1.0. Pharmaceuticals is perhaps the industry of product differentiation par excellence. Moreover the profits from successful product differentiation can often be cemented by patents. But successful product differentiation leads to large market shares and all or nearly all of the overall success of firms in this industry can apparently be accounted for by the market share variables.

The identities of those industries with significant coefficients positive or negative is unsurprising except, perhaps, for the large, negative coefficient on engineering and scientific instruments (381) in equation 4. This industry would appear destined for extinction. None of the other negative industry coefficients are so far below the sample average that they could not be guessed to be near the competitive return assuming it too lies below the mean.

The industries with positive and significant coefficients are familiar faces. Flour and cereals (204), whose effect is probably dominated by cereals; cutlery, razors, and handtools (342), probably dominated by razors[8]; generators, engines, laundry and refrigerator equipment (351 + 358); machine tools (354) and photographic equipment (386). The biggest surprise in the list of industries with significant coefficients positive or negative is in the identities of the industries not represented, and the shortness of the list in general. Given the dominant role industry entry barriers have played in the industrial organization literature on the determinants of profits, and given that the industry vectors are perfectly general, i. e. they should capture any and all industry characteristics that might lead to above or below normal profits, one expects more industry definitions to emerge as important. Scale economies may be playing a role in some cases, e. g. laundry and refrigeration equipment, the barrier to exit notion may be supported in steel mills, railroads and ship buildings, and perhaps beer, and so on, but in total looking at characteristics of different industries does not appear a fruitful way of explaining the differences in long run projected profits of the firms that inhabit them.

This finding has important implications for future research in industrial organization as do some of the other results reported here. We shall review these results in the final chapter.

Footnotes:

1. This generalization is also valid for the recent theoretical literature on strategic deterrence. Although the models are usually formulated in terms of a single firm's strategic behavior, it is almost always assumed that this firm is a monopolist so that the boundaries between firm and industry collapse. Nevertheless, the potential for linking the empirical findings of this study to this theoretical literature is quite large, given the latter's focus on individual firm behavior. "Only" the definition of the "territory" into which "entry" occurs must be amended to allow for the existence of deterrence strategizing by firms within industries against other firms in their industry as well as outside. For an excellent survey of the deterrence literature see Encaona, Geroski and Jacquemin (1982).

2. See Comanor and Wilson's (1979) survey of this literature.

3. The obvious alternative measure of technological differentiation is R and D expenditures. Industry R and D expenditures are available only in the rather aggregate (mostly 2-digit) form the National Science Foundation publishes. In contrast the NSF's industry patent statistics are generally at the 3-digit level.

4. Although the NSF reported patent figures at the 3-digit level for progressive industries it reported only at the 2-digit level for the unintensive industries and not at all for industries 21, 23 - 27, 31 and 39. We put in 0 patent/sales ratios for these industries as opposed to figures of 1.0 per $ million for progressive industries and .04 - .06 for other unprogressives.

5. See, reviews in Scherer (1980), pp. 285-8, and Comanor and Wilson (1979)

6. See, Bloch (1974), Ayanian (1975), and Weiss (1969).

7. Bloch's figure is almost certainly too low. He does a search for the depreciation rate that maximizes R^2 and thereby selects the value .05. While he reports results for higher depreciation rates, he omits reference to lower ones. Grabowski and I (1978) found that this method of choosing a depreciation rate often led to R^2 maxima that lie outside of the 0 - 100 % range, and that a slight change in specification could "tilt" the R^2 plane leading an "optimal" depreciation rate to slide to the opposite extreme. These disturbing results led us to impose plausible depreciation rates and do a sensitivity analysis. I suspect that had Bloch searched further he would have found that a depreciation rate of zero or negative was even "better" than 5 percent. See, also the Comanor - Wilson (1979) discussion of Bloch.

8. Industry 342 did not pick up a significant coefficient for the first choice of dependent variable on the first pass, but did so once all other variables were added.

CHAPTER 7

Conclusions and Implications

This study differs from most research in industrial organization in two respects. First, it explores the determinants of profitability from a long run perspective. It asks not what causes profits to exist, but whether they persist, and if they do what are the causes. In accounting for the persistence of profits we have placed equal emphasis on the possible role of firm- and industry-specific factors. This equal emphasis is the second important difference between our study and the existing literature. Indeed, our finding that firm-related factors tend to dominate industry factors is at even greater variance with the existing literature. In reviewing our results we shall focus on these two characteristics.

A. The Persistence of Profitability

Underlying much of the casual and some of the more formal normative literature regarding the market economy is a sort of dynamic invisible hand theorem. Although pockets of profit may appear here and there from time to time, the long run forces of a dynamic competitive process drive all supra-normal returns to the competitive level, force all sub-normal performers to leave the field[1). The Schumpeterian scenario of innovation, imitation and profit erosion is the presumed description of how the market works over time in many discussions of the long run costs and benefits of market competition.

The results presented here call this view into question. Profits that appear above and below the norm at one point in time are projected to persist at above or below normal levels indefinitely. Somewhere between 30 and 60 percent of the deviations in profit rates across firms observed in 1950-52 are projected to persist indefinitely.

The only explanation for persistent differences in profit rates fully consistent with a competitive environment hypothesis emphasizes undiversifiable differences in risk across companies. Risks inherent in the activities of the companies could account for persistent profit differences in a fully competitive economy, but risk differences leading to from 30 to 60 percent profit differences for large numbers of companies seem implausibly large. The risk variables we tried were either uncorrelated with projected profits or negatively related to them. Firms with persistently high profits are if anything less risky investments, firms with persistently low profits are more risky.

Our findings of permanent profit differences reject a strong form of the competitive environment hypothesis. One or more markets must not be perfectly competitive over the long run to account for persistent profit differences. The most obvious candidate is the capital market. Much has been written in recent years of the efficiency of the capital market in the United States. By this is meant that when new information about the return prospects of a given company reaches the market, the price of its shares adjusts quickly to bring the long run risk-return trade-off for this firm's shares in line with the rest of the market. There is good evidence that financial markets in the United States are efficient in this sense.[2)] The results reported here imply that capital does not flow so quickly. Apparent differences in returns on real assets persist indefinitely.

The relative importance of firm-related factors suggests that imitation barriers rather than entry barriers account for profit differences. Some firms possess patents, trademarks, secret knowhow or some other nonimitable advantage that allows them to earn continually higher profits.

The importance of firm-specific factors may also imply that it is not the capital market that is not equilibrating returns, but the market for managers. Perhaps it is not the product or production technique that cannot be imitated, but the talents of managers for continually coming up with new or improved products, for continually organizing their companies more efficiently. If managerial talent explains profit differences, then it is the market for managers, the human capital market, that is not functioning, for if it were, other companies would bid for talented managers either taking them away thereby destroying the advantage a firm once had, or forcing the firm to raise the managers' compensation until the profit differences across companies disappear. Some market, the capital market, the manager market or some other unspecified market must be out of equilibrium for companies to earn persistently different profit rates.

Consideration of imperfections in the market for managers may help explain the seemingly inexplicable existence of persistent profit projections <u>below the norm.</u> First note however, that because we have normalized profit rates around the sample mean, all negative profit projections need not be inconsistent with the competitive environment hypothesis. Assuming some firms earn permanent rents that are reported as part of profits, profit means lie above the competitive return, and some negative returns may be at or above the competitive return.

An interesting question arises as to how much below the sample average the competitive rate of return lies. Two approaches to this question were discussed in Chapter 2. One is to assume that no firm can earn a return on capital in the long run below the competitive return. The competitive return is the lowest observed long run projected return, all others are supra normal. While this approach has a compelling logic it cannot be applied to individual firms since our profit projections are estimates subject to standard errors. One might apply this logic to groups of companies, however, assuming prediction errors across companies cancel out. Using the groupings based on 1950 - 52 profit rankings we found that the bottom ranked sixth of the sample was projected to earn a return on capital 22.8 percent below the sample average (see Table 2.1). An alternative grouping is by industry. Three industries in Table 6.2 have long run projected returns significantly below zero. Of these, the estimate for engineering and scientific instruments is unrealistically low. This is either a bad estimate or firms in this industry are on average destined for extinction. The other two industry estimates come quite close to the -22.8 percent figure, however, -19 percent for steel mills, -23 percent for cooking oils, beer and distilled spirits. A defensible projection of long run competitive returns is that they lie some 20 percent below the sample average.

The alternative approach to estimating the competitive return is to argue that it is that return toward which firms from both above and below tend to move. Applying this criterion we calculated a deviation from the average of some -5.3 percent in Chapter 2.

Whichever figure one chooses, there are some companies in our sample with projected returns below that figure. Imperfections in the market for managers is a possible explanation for the existence of companies which are predicted to earn returns below the competitive level in perpetuity. The managerial theories predict that managers pursue goals in conflict with stockholder interests. Once managerial practices are recognized and appraised by the finance markets, normal returns will of course be earned on these companies' stocks and bonds. But real returns may sink to below normal levels as managers divert corporate profits in the pursuit of their own goals. For this practice to go on indefinitely there must exist imperfections in the market for managers. The separation of ownership and control is one such imperfection, making it difficult for dissatisfied owners of capital claims to displace incumbent management. Transaction costs in the market for corporate control impede outsiders from taking over management controlled companies and displacing managers who misallocate corporate funds[3].

In the very long run no firm can survive that does not earn and reinvest the competitive return on capital. In this context our projections of subcompetitive returns on capital into the indefinite future based on 23 year time series regressions merely underscore how very long the long run can be.

B. Profitability: Firm and Industry Effects

In the course of the study we tested for an association between several industry and firm-specific variables and our projections of long run profitability. Of the firm specific variables, two stood out as being closely associated with long run profitability: the deviation of the firm's profits from the sample mean in 1950 - 52 (Π_{50}), and its projected market share. When the projected profit estimates were all made from time series regressions of a company's profits on the reciprocal of time, the initial profits variable dominated the regression. When the projected profits variable was taken from the best fit of the 3 time series approximations tried, the Π_{50} variable had a reduced, but nevertheless a still highly significant association with projected profits, while the size and significance of the market share variable was enhanced. Both of these variables proxy firm-specific product or efficiency characteristics that lead some firms to be more or less efficient than others. Π_{50} proxies characteristics that are unrelated to market share, the market share variable captures characteristics that do lead to both higher profits and higher market shares. The differences in the association of these two variables with the two alternative projections of profits are in emphasis: the one emphasizes firm characteristics unrelated to market share more, the other characteristics related to market share.

The differences in the association between the two projections of long run profits and market share dispel the possibility that all of the persistence of profits we observe is due simply to accounting practices differences. If accounting practices were all that led to persistent differences in profitability there would be no reason to expect projected profits to be positively correlated with market share, unless the size of market share determines the choice of accounting convention. Similarly, the closer association of the profit projections from the best fit equations with market shares suggests that the role of economic factors in explaining long run profitability would be still greater, if we were able to make even better long run projections of profitability. On the other hand, some or all of the strong positive effect of the Π_{50} variable may be related to differing accounting conventions across firms.

The two industry characteristics most closely related to projected firm profitability are industry advertising intensity and concentration. The impact of concentration, however, is largely negative in contrast to the performance of this variable in numerous other studies. In our modeling of the firm profitability equations we noted that concentration enters as a determinant of profits through the degree of cooperation factor. The largely negative net effect of concentration on profitability must be interpreted as implying rivalrous interactions among firms increasing as concentration increases, at least up to some point. While rivalry could evidence itself through price competition, or various forms of nonprice competition, the latter seem the more plausible. Interaction terms between concentration and either patent or advertising intensity proved insignificant, however, although multicollinearity may have been a factor here.

We have interpreted advertising intensity as an industry characteristic representing the potential for differentiating a firm's product. The strong positive coefficient for this variable indicates that being in industries with high potential for product differentiation raises the profitability of the firm on average, and successful product differentiation as measured by high market shares is associated with still higher profits. The positive coefficient on the industry advertising-market share interaction variable strongly suggests that at least for some of the firms in the sample, the market share variable is picking up product characteristic advantages rather than efficiency advantages.

Being in a particular 3-digit industry was associated with significantly higher or lower profits for only 9 or 10 of the 143 industries spanning our sample. This is surprising in that these industry variables should capture the combined influence of all of the characteristics of the industry that can lead to above or below normal profits. If collusion exists in industry X and this collusion is protected by tariffs, by other government policies, by R and D costs, by other capital costs or by any combination of these then our industry variables should pick up these effects. Yet for only 9 or 10 industries were they apparent.

The results reported here, along with parallel results emerging using other data and methodologies,[4)] strongly suggest that a rethinking of the standard structure-conduct-performance paradigm is required. A refocusing of attention from the industry to the individual firm is required. Instead of assuming that industry-wide technologies exist implying in some cases that if a firm is bigger then it has lower costs, one should begin to assume that if a firm has lower costs then it will be bigger. Instead of collusion one must think of product differentiation advantages, instead of entry barriers, imitation barriers.

Two cautions must be voiced. First, the market share and profits variables are jointly determined. Higher market shares do not cause higher profits, but rather product and production efficiency advantages cause both higher market shares and higher profits. Second, higher market shares come about either because of product differentiation advantages or efficiency advantages. The superior performance of market share does cast doubt on whether previous positive correlations between concentration and profitability were capturing collusion effects, or market share effects. But the market share effects might very well have been due to product differentiation advantages. One should not quickly jump to the conclusion that market share captures only efficiency effects. Indeed, there is more evidence for product differentiation driving the market share - profit relationship, but more work is needed to unravel exactly what causes the market share - profit linkage.

C. Implications for Future Research

Over a decade ago Henry Grabowski and I (1970) warned that the trend to increasing diversification of companies might make future econometric studies along the lines popular in the 1960s impossible. Firms could no longer be classified into industries, industries being composed of bits and pieces of firms. Shortly after this paper was published the data situation in the industrial organization area began to change dramatically. The FTC report covering the 1950 1,000 largest was published in 1972. The following year the FTC conducted the follow-up survey of the 1,000 largest of 1972. Around the same time was launched the Line of Business Program gathering not only sales, but profits, advertising and a whole set of data categories essential for meaningful industrial organization research. Somewhat similar, but by-and-large inferior data bases began to be assembled and sold to firms. By 1980 econometric research in industrial organization using these new data sources was being conducted, that would have been impossible to contemplate doing a decade earlier.

Ironically and sadly the spectre for research in industrial organization Grabowski and I sketched in 1970 confronts the profession once again at the time of this writing. The market share data for the 1,000 largest of 1972 is bottled up and may never be generally available to researchers. The future of the Line of Business Program is in doubt. The door to more meaningful and reliable research on industrial organization issues that opened in the '70s may close in the '80s.

The results reported here and similar findings reported using the LB data demand further testing and confirmation. Did the profit disparities observed and projected in this study persist through the economically troubled '70s? What impact did the oil crisis have? Were the same variables associated with persistent profits in the '70s as were projected to be, using the data of the '50s and '60s?

Should further research confirm the findings of this study, a new set of questions is raised. What lies behind the market share - profit relationship, efficiency or product characteristic advantages? Does industry advertising capture the potential for product differentiation or the realization of that potential? What forms of rivalry account for the negative relationship between concentration and profitability?

To answer these questions more diasaggregated data than are now available even in the Line of Business Program are required. In particular, firm-specific price and quantity data are needed to disentangle efficiency from product differentiation advantages. And one will need complete panels of both cross-section and time series observations.

Further down on the research agenda additional work on the welfare and policy implications of the kind of results reported here must be undertaken. To the extent persistent profit differences arise from efficiency differences, work must proceed on understanding how companies that are persistently less efficient than the norm can survive and what, if any, positive economic role they play. The welfare literature on product differentiation and nonprice competition paints a very black box.[5)] Light must be shed on the likely welfare effects from increasing market shares and profits stemming from superior product differentiation before firm policy implications can be drawn. Does increased nonprice rivalry in more concentrated markets improve social welfare? Do profits persist because some firms are good innovators or because most are poor imitators? How important to a normative evaluation of the market system is the competitive hypothesis that long run competitive forces bring about a convergence of all rates of return to the competitive level?

Much of the thrust of antitrust policy is on promoting and preserving price competition within markets. Section 1 of the Sherman Act outlawing collusion is the one piece of antitrust legislation virtually all antitrust observers are willing to defend. Pending one's review of the normative implication of the empirical findings reported here, the latter could suggest either repeal of many of the other antitrust laws or greater emphasis upon them. To the extent the persistence of profits is judged an undesirable characteristic of the market's performance, the market share - profit association implies greater emphasis on dominant firm cases (Section 2, Sherman Act), and on the actions that can buttress a dominant firm's position covered by the Clayton and Federal Trade Commission statutes. If profits persist due to product differentiation advantages, a reorientation of enforcement away from competition by price to nonprice competition is called for. Either a new look at existing statutes and enforcement policies, or new statutes themselves may be required. A fertile field for new research has been opened by the FTC's surveys of the 1,000 largest companies of 1950 and 1972.

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Footnotes:

1. See, Clark (1961),Kirzner (1973), and Schumpeter (1934).

2. See, Fama (1970) and the special issue of the Journal of Financial Economics 6 (1978).

3. On these see Manne (1965) and for an empirical estimation of the magnitude of these costs Smiley (1976). Smiley's figures imply an estimate of some 50 percent of the potential market value of the firm. Grossmann and Hart (1980) argue that the only way a takeover raider can recoup his investment is by engaging in the same misallocations as the previous management team. If valid this theory implies persistent profits below the norm even in the presence of successful takeovers and management changes.

4. Shepherd (1972), Ravenscraft (forthcoming), and Kwoka and Ravenscraft (1982).

5. See Dixit and Stiglitz (1977), Koenker and Perry (1979), Lancaster (1975), Schmalensee (1978), and Spence (1976a, b).

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APPENDIX A-1

In this appendix are listed the companies that were a part of our study. The first 3 subsections list the 1,000 largest sample for 1950, divided into 3 groups, the 200 largest, 201-500 largest, and 501-1,000 largest. Column 2 of these 3 subsections indicates the firms' status as of 1972, where SR ≡ survived, AQ ≡ acquired through merger, LQ ≡ liquidated, PI ≡ privately held, i.e., the firm survived, but due to private control of firm not enough information was available to include it in sample, ID ≡ insufficient data to include in sample, NI ≡ no information as to what happened to firm. Column 3 reports same information for firms as available in the 1980 Moody's Industrial Manual. If the firm was in our sample of 602 companies used to obtain original profit estimates, its rank in 1950-52 is presented in column 4. In column 5 either the companies current name is presented if it survived, or, in parentheses, the name of the firm that acquired it and the year of acquisition.

Subsection D lists names and 1950-52 profit ranks of companies in 1972 1,000 largest sample, that were not in 1950 1,000 largest, included in the study. Subsection E lists firms and 1950-52 profit ranks that were included in our study and were in neither the 1950 nor the 1972 1,000 largest groups.

APPENDIX 1

A. Largest 200 Companies	2	3	4	5
Admiral Corp.	SR	AQ	18	
Allegheny Ludlum Steel Corp.	SR	SR	418	ALLEGHENY LUDLUM IND.
Allied Chemical & Dye Corp.	SR	SR	225	ALLIED CHEMICAL
Allis-Chalmers Manufacturing Co.	SR	SR	395	
Aluminum Company of America	SR	SR	393	
American Can Co.	SR	SR	314	
American Cyanamid Co.	SR	SR	255	
American Home Products Corp.	SR	SR	138	
American Locomotive Co.	AQ			(RKO 1969)
American Radiator & Standard Sanitary Corp.	SR	SR	142	AMERICAN STANDARD
American Smelting & Refining Co.	SR	SR	159	
American Sugar Refining Co., The	SR	SR	496	AMSTAR
American Tobacco Co., The	SR	SR	468	AMERICAN BRANDS
American Viscose Corp.	AQ			(FMC 1963)
American Woolen Co.	AQ			(TEXTRON 1955)
Anaconda Copper Mining Co.	SR	AQ	471	
Anheuser Busch, Inc.	SR	SR	ID	
Archer-Daniels-Midland Co.	SR	SR	285	
Armco Steel Corp.	SR	SR	257	
Armour & Co.	SR	SR	572	
Armstrong Cork Co.	SR	SR	388	
Atlantic Refining Co., The (Pennsylvania)	SR	SR	292	
Avco Mfg. Corp.	SR	SR	427	
Babcock & Wilcox Co.	SR	AQ	348	
Baker & Co., Inc.	SR	SR	ID	
Baldwin Locomotive Works, The	AQ			
Beatrice Foods Co. (Delaware)	SR	SR	324	
Bemis Brothers Bag Co.	SR	SR	567	
Bendix Aviation Corp.	SR	SR	392	BENDIX CORP.
Bethlehem Steel Corp.	SR	SR	386	
Boeing Airplane Co.	SR	SR	424	
Borden Co., The	SR	SR	419	
Borg-Warner Corp.	SR	SR	169	
Briggs Manufacturing Co.	AQ			PANACON (CELOTEX 1972)
Budd Co., The	SR	SR	219	

	2	3	4	5
Burlington Mills Corp.	SR	SR	441	BURLINGTON INDUSTRIES
California Packing Corp.	SR	AQ	467	DEL MONTE
Campbell Soup Co.	SR	SR	247	
Cannon Mills Co.	SR	SR	399	
Carnation Co.	SR	SR	277	
Case (J.I.) Co.	AQ			(TENNECO 1970)
Caterpillar Tractor Co.	SR	SR	246	
Celanese Corporation of America	SR	SR	366	
Champion Paper & Fibre Co.	AQ			(US PLYWOOD 1967)
Chrysler Corp.	SR	SR	198	
Cities Service Co.	SR	SR	442	
Coca-Cola Co., The	SR	SR	103	
Colgate-Palmolive-Peet Co.	SR	SR	359	
Colorado Fuel & Iron Corp.	SR	AQ	498	CF & I
Cone Mills Corp.	SR	SR	256	
Consolidated-Vultee Aircraft Corp.	SR	SR	598	GENERAL DYNAMICS
Container Corporation of America	SR	AQ	311	MARCOR
Continental Baking Co.	AQ			(ITT)
Continental Can Co., Inc.	SR	SR	489	
Continental Oil Co.	SR	SR	71	
Corn Products Refining Co.	SR	SR	183	
Corning Glass Works	SR	SR	136	
Crown Zellerbach Corp.	SR	SR	209	
Crucible Steel Company of America	AQ			(COLT INDUSTRIES)
Cudahy Packing Co., The	AQ			(GENERAL HOST 1971)
Curtis Publishing Co.	SR	SR	499	
Curtiss-Wright Corp.	SR	SR	524	
Dana Corp.	SR	SR	122	
Deere & Co.	SR	SR	173	
Douglas Aircraft Co., Inc.	SR	SR	155	
Dow Chemical Co.	SR	SR	412	
Dupont (E.I.) deNemours & Co.	SR	SR	69	DUPONT
Eastman Kodak Co.	SR	SR	197	
Eaton Manufacturing Co.	SR	SR	80	
Electric Auto-Lite Co.	AQ			(ELTRA CORP 1963)

	2	3	4	5
Endicott Johnson Corp.	AQ			(McDONOUGH 1971)
Essex Wire Corp.	SR		ID	ESSEX INTERNATIONAL
Firestone Tire & Rubber Co.	SR	SR	274	
Ford Motor Co.	SR	SR	161	
General Electric Co.	SR	SR	152	
General Foods Corp.	SR	SR	337	
General Mills, Inc.	SR	SR	416	
General Motors Corp.	SR	SR	47	
General Tire & Rubber Co., The	SR	SR	270	
Glidden Co.	AQ			(SCM 1967)
Goodrich (B.F.) Co., The	SR	SR	188	
Goodyear Tire & Rubber Co.	SR	SR	443	
Gulf Oil Corp.	SR	SR	261	
Hearst Consolidated Publications, The	SR		ID	
Hercules Powder Company	SR	SR	151	
Hershey Chocolate Corp.	SR	SR	35	
Hormel (Geo. A.) & Co.	SR	SR	438	
Hudson Motor Car Co.	AQ			(AMERICAN MOTORS 1954)
Hygrade Food Products Corp.	SR	SR	469	
Inland Steel Co.	SR	SR	290	
International Business Machines Corp.	SR	SR	272	
International Harvester Co.	SR	SR	434	
International Paper Co.	SR	SR	109	
International Shoe Co.	SR	SR	371	INTERCO
Johns-Manville Corp.	SR	SR	48	
Johnson & Johnson	SR	SR	298	
Jones & Laughlin Steel Corp.	SR	SR	495	
Kaiser Aluminum & Chemical Corp.	SR	SR	378	
Kaiser-Frazer Corp.	SR	LQ	140	KAISER INDUSTRIES
Kaiser Steel Corp.	SR	SR	425	
Kellogg (Spencer) & Sons, Inc.	LQ			1961
Kennecott Copper Corp.	SR	SR	54	
Kimberly-Clark Corp.	SR	SR	396	
Kingan & Co., Inc.	AQ			(HYGRADE FOOD 1952)
Koppers Company, Inc.	SR	SR	413	

	2	3	4	5
Lever Brothers Co.	SR	SR	534	UNILEVER
Libbey-Owens-Ford Glass Co.	SR	SR	37	
Liggett & Myers Tobacco Co.	SR	SR	481	LIGGETT GROUP
Lockheed Aircraft Corp.	SR	SR	518	LOCKHEED CORP.
Lorillard (P.) Co.	AQ			(LOEW'S)
Mayer (Oscar) & Co., Inc.	SR	SR	303	
Mead Corp., The	SR	SR	374	
Minnesota Mining & Mfg. Co.	SR	SR	84	
Monsanto Chemical Co.	SR	SR	304	
Morrell (John) & Co.	AQ			(AMK)
Morris (Philip) & Co. Ltd., Inc.	SR	SR	461	
Motorola, Inc.	SR	SR	38	
Murray Corporation of America, The	SR	SR	144	WALLACE-MURRAY
Nash-Kelvinator Corp.	SR	SR	268	AMERICAN MOTORS
National Biscuit Co.	SR	SR	220	NABISCO
National Dairy Products Corp.	SR	SR	382	KRAFT
National Distillers Products Corp.	SR	SR	458	
National Lead Co. (New Jersey)	SR	SR	157	NL INDUSTRIES
National Steel Corporation	SR	SR	244	
National Sugar Refining Co., The	SR	SR	522	
North American Aviation, Inc.	SR	SR	52	ROCKWELL INTERNATIONAL
Olin Industries, Inc.	SR	SR	592	OLIN CORP.
Owens-Illinois Glass Co.	SR	SR	271	
Paraffine Companies, Inc., (Pabco Products Inc.)	SR	AQ	242	FIBREBOARD
Pabst Brewing Co.	SR	SR	202	
Pacific Mills	AQ			(BURLINGTON IND. 1953)
Packard Motor Car Co.	AQ			(STUDEBAKER)
Pet Milk Co.	SR	AQ	494	
Phelps Dodge Corp.	SR	SR	92	
Philco Corp.	AQ			(FORD MOTOR 1961)
Phillips Petroleum Co.	SR	SR	264	
Pillsbury Mills, Inc.	SR	SR	529	
Pittsburgh Plate Glass Co.	SR	SR	177	PPG
Pittsburgh Steel Co.	AQ			(WHEELING 1968)
Procter & Gamble Co., The	SR	SR	94	
Pullman, Inc.	SR	SR	521	

	2	3	4	5
Pure Oil Co., The (Ohio)	AQ			(UNION OIL 1965)
Quaker Oats Co., The	SR	SR	288	
Radio Corporation of America	SR	SR	226	RCA
Ralston Purina Co.	SR	SR	260	
Rath Packing Co., The	SR	SR	528	
Remington Rand, Inc.	AQ			(SPERRY 1955)
Republic Steel Corp.	SR	SR	343	
Revere Copper & Brass, Inc.	SR	SR	181	
Reynolds Metals Co.	SR	SR	449	
Reynolds (R.J.) Tobacco Co.	SR	SR	431	
Richfield Oil Corp.	AQ			(ATLANTIC 1966)
St. Regis Paper Co.	SR	SR	334	
Schenley Industries, Inc.	AQ			(RAPID AMERICAN 1972)
Schlitz (Jos.) Brewing Co.	SR	SR	ID	
Scott Paper Co.	SR	SR	120	
Scovill Manufacturing Co.	SR	SR	497	
Seagram (Joseph E.) & Sons, Inc.	SR	SR	179	DISTILLERS CORP.
Sharon Steel Corp.	SR	SR	222	
Shell Oil Corp.	SR	SR	67	
Sherwin-Williams Co.	SR	SR	344	
Simmons Co.	SR	AQ	326	
Sinclair Oil Corp.	AQ			(ATLANTIC-RICHFIELD 1969)
Smith (A.O.) Corp.	SR	SR	387	
Socony-Vaccum Oil Co., Inc.	SR	SR	273	MOBIL OIL
Spencer Kellug & Sons	AQ			(TEXTRON 1960)
Sperry Corp., The	SR	SR	10	SPERRY RAND
Staley (A.E.) Manufacturing Co.	SR	SR	515	
Standard Brands, Inc.	SR	SR	422	
Standard Oil Co. of California	SR	SR	70	
Standard Oil Co. of Indiana	SR	SR	381	
Standard Oil Company (N.J.)	SR	SR	145	EXXON
Standard Oil Co., The (Ohio)	SR	SR	376	
Stevens (J.P.) & Co., Inc.	SR	SR	389	
Studebaker Corp., The	SR		ID	STUDEBAKER-WORTHINGTON
Sun Oil Co. (New Jersey)	SR	SR	146	SUN CO.
Swift & Co. (Illinois)	SR	SR	573	ESMARK

	2	3	4	5
Sylvania Electric Products, Inc.	AQ			(GTE 1959)
Texas Co., The	SR	SR	147	TEXACO
Tide Water Associated Oil Co.	SR	SR	546	GETTY OIL
Time, Inc.	SR	SR	316	
Timken-Detroit Axle Co., The	AQ			(NORTH AMER. ROCK.)
Timken Roller Bearing Co.	SR	SR	129	TIMKIN
Union Bag & Paper Corp.	SR	SR	58	UNION CAMP CORP.
Union Carbide & Carbon Corp.	SR	SR	108	
Union Oil Co. of California	SR	SR	435	
United Aircraft Corp.	SR	SR	429	
United States Gypsum Co. (Illinois)	SR	SR	134	
United States Rubber Co.	SR	SR	426	UNIROYAL
United States Steel Corp.	SR	SR	486	
Wesson Oil & Snowdrift Co., Inc.	AQ			(HUNT FOOD 1959)
West Point Manufacturing Co.	SR	SR	63	WEST POINT PEPPERELL
West Virginia Pulp & Paper Co.	SR	SR	266	WESTVACO
Western Electric Co., Inc.	SR	SR	526	
Westinghouse Electric Corp.	SR	SR	391	
Weyerhaeuser Timber Co.	SR	SR	130	
Wheeling Steel Corp.	SR	SR	400	WHEELING-PITTSBURGH STEEL
Willys-Overland Motors, Inc.	AQ			(KAISER-FRASER 1952)
Wilson & Co., Inc.	AQ			(LTV)
Youngstown Sheet & Tube Co., The	SR	SR	394	
Zenith Radio Corp.	SR	SR	107	

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B. Companies Ranked 201 to 500

	2	3	4	5
Abbott Laboratories	SR	SR	115	
Brandon Corp. (Abney Mills)	SR		PI	
Acme Steel Co.	AQ			(INTERLAKE 1964)
Air Reduction Co., Inc.	SR	AQ	437	AIRCO
Allied Mills, Inc.	SR	AQ	322	
American Agricultural Che. Co.,The (Del)	AQ			(CONTINENTAL OIL 1963)
American Brake Shoe Co.	AQ			(ILLINOIS CENTRAL)
American Car & Foundry Co.	SR	SR	531	ACF
American Chain & Cable Co. Inc.	SR	AQ	199	
American Enka Corp.	SR	SR	186	AKZONA
American Metal Co.,Ltd., The	SR	SR	398	AMAX
American Optical Co.	AQ			(WARNER LAMBERT 1967)
American Steel Foundries (New Jersey)	SR	SR	358	AMSTED
American Thread Co., Inc.	SR	SR	564	
American Zinc, Lead & Smelting Co.	SR	AQ	2	AZCON
Anchor Hocking Glass Corp.	SR	SR	217	
Arden Farms Co.	SR	SR	576	ARDEN-MAYFAIR
Armstrong Rubber Co., The	SR	SR	333	
Noblitt-Sparks Industries, Inc. (Arvin Ind.)	SR	SR	156	
Ashland Oil & Refining Co.	SR	SR	231	
Aurora Gasoline Co.	AQ			(ALLIED PRODUCTS)
Automatic Electric Co.	SR		PI	
Avondale Mills	SR	SR	476	
Bachmann Uxbridge Worsted Corp 3)	AQ			(AMERACE, ESNA 1957)
Ballantine (P.) & Sons	AQ			(FALSTAFF 1972)
Barium Steel Corp	SR	SR	345	PHOENIX STEEL
Bates Manufacturing Co.	SR	LQ	491	
Beaunit Mills, Inc.	AQ			(EL PASO NATURAL GAS)
Beech-Nut Packing Co.	AQ			(SQUIBB 1968)
Bell Aircraft Corp.	AQ			(WHEELABRATOR-FRYE)
Berkshire Fine Spinning Associates,Inc.	SR	SR	535	BERKSHIRE-HATHAWAY
Best Foods, Inc. The	AQ			(CORN PRODUCTS 1958)
Bibb Manufacturing Co.	SR	SR	559	
Bigelow-Sanford Carpet Co.,Inc.	AQ			(SPERRY-HUTCHINSON)
Blaw-Knox Co.	AQ			(WHITE CONSOLIDATED,1968)
Blue Bell, Inc.	SR	SR	293	

	2	3	4	5
Bohn Aluminum & Brass Corp.	AQ			(GULF & WESTERN)
Bridgeport Brass Co.	AQ			(NATIONAL DISTILLERS 1961)
Bristol-Myers Co.	SR	SR	307	
Brown Co.	SR	SR	240	
Brown Shoe Company, Inc.	SR	SR	306	BROWN GROUP
Brown & Williamson Tobacco Corp.	SR	SR	100	BRITISH AMER.TOBACCO
Bucyrus-Erie Co.	SR	SR	289	
Bulova Watch Co., Inc. (New York)	SR	SR	421	
Bunker Hill & Sullivan Mining & Concentrat.Co.	AQ			(GULF RESEARCH & CHEMICAL)
Burroughs Adding Machine Co.	SR	SR	547	BURROUGHS CORP.
Callaway Mills Co.	LQ			
Calumet & Hecla Consolidated Copper Co.	AQ			(UNIVERSAL OIL)
Carborundum Co. (Delaware)	SR	SR	174	
Carey (Philip) Manufacturing Co.	AQ			(GLEN ALDEN)
Carrier Corporation	SR	AQ	453	
Celotex Corp., The	AQ			(WALTER, JIM)
Central Soya Co.,Inc.	SR	SR	126	
Certain-teed Products Corp.	SR	SR	117	
Champion Spark Plug Co.	SR	SR	30	
Chase Bag Co.	SR		NI	
City Products Corp.	AQ			(HFC)
Clark Equipment Company	SR	SR	263	
Clinton Foods, Inc.	AQ			(STANDARD BRANDS 1956)
Cluett, Peabody & Co., Inc.	SR	SR	350	
Collins & Aikman Corp.	SR	SR	508	
Colorado Milling & Elevator Co.	AQ			(GREAT WESTERN UNITED 196[illegible]
Combustion Engineering-Superheater,Inc.	SR	SR	383	
Commercial Solvents Corp.	SR	AQ	351	
Congoleum-Nairn, Inc.	AQ			(BATH INDUSTRIES 1968)
Consolidated Cigar Corp.	AQ			(GULF & WESTERN)
Consolidated Paper Co.	SR	SR	127	CONSOLIDATED PACKAGING
Consolidated Water Power & Paper Co.	SR	SR	248	CONSOLIDATED PAPERS

	2	3	4	5
Crane Company	SR	SR	384	
Crowell-Collier Publishing Co.	AQ			
Crown Cork & Seal Co.,Inc.	SR	SR	582	
Cummins Engine Co., Inc.	SR	SR	245	
Cuneo Press, Inc.	SR	SR	581	
Curtiss Candy Co.	AQ			(STANDARD BRANDS 1964)
Cutler-Hammer,Inc.	SR	AQ	105	
Dan River Mills,Inc.	SR	SR	503	
Detroit Steel Corporation	AQ			(CYCLOPS 1971)
Devoe & Raynolds Co., Inc.	AQ			(CELANESE 1964)
Diamond Alkali Co.	SR	SR	411	DIAMOND SHAMROCK
Diamond Match Co., The	SR	SR	320	DIAMOND INTERNATIONAL
Doehler-Jarvis Corp.	AQ			(NATIONAL LEAD 1952)
Donnelley (R.R.) & Sons Co.	SR	SR	456	
Dresser Industries, Inc.	SR	SR	354	
Dubuque Packing Co.	SR		NI	
Du Mont (Allen B.) Laboratories,Inc.	AQ			(FAIRCHILD CAMERA)
Eagle-Picher & Co.	SR	SR	342	
Eastern States Petroleum Co. Inc.	NI			
Electric Storage Battery Co., The	SR	AQ	533	ESB INC.
Electrolux Corp.	AQ			(CONSOLIDATED FOODS)
Elgin National Watch Co.	SR	SR	575	
Emerson Radio & Phonograph Corp.	AQ			(NATIONAL UNION ELECTRIC)
Erwin Mills, Inc.	AQ			(BURLINGTON INDUSTRIES 196
Fairbanks, Morse & Co.	AQ			(COLT INDUSTRIES)
Fairchild Engine & Airplane Corp.	SR	SR	509	FAIRCHILD HILLER
Fairmont Foods Co.	SR	SR	594	
Field Enterprises, Inc.	SR		NI	
Flintkote Co., The	SR	SR	301	
Florsheim Shoe Co., The	AQ			(INTERNATIONAL SHOE 1953)
Food Machinery & Chemical Corp.	SR	SR	450	FMC

	2	3	4	5
Forstmann Woolen Co.	AQ			(J.P. STEVENS 1957)
Fruehauf Trailer Co.	SR	SR	40.2	FRUEHAUF CORP.
Fulton Bag and Cotton Mills	AQ			(ALLIED PRODUCTS)
Gair (Robert) Co., Inc.	AQ			(CONTINENTAL CAN 1956)
Gardner Board & Carton Co.	AQ			(DIAMOND MATCH 1957)
Gates Rubber Co.	SR		NI	
Gaylord Container Corp.	AQ			(CROWN ZELLERBACH 1955)
General American Transportation Corp.	SR	SR	539	GATX
General Aniline & Film Corp.	SR	SR	553	GAF
General Baking Co.	SR	SR	406	GENERAL HOST
General Cable Corp.	SR	SR	36.1	
General Shoe Corp.	SR	SR	190	GENESCO
Gerber Products Co.	SR	SR	172	
Gibson Refrigerator Co.	AQ			(WHITE CONSOLIDATED 1955)
Gillette Safety Razor Co. (Delaware)	SR	SR	3	GILLETTE CO.
Globe Oil & Refining Co.	AQ			(MID-WEST REFINING)
Globe-Union, Inc.	SR	AQ	24.3	
Godchaux Sugars, Inc.	AQ			(NATIONAL SUGAR 1956)
Golden State Co., Ltd.	AQ			(FOREMOST-McKESSON 1953)
Goodall-Sanford, Inc.	AQ			(BURLINGTON INDUSTRIES 1953
National Battery (Gould-National Batteries)	SR	SR	297	GOULD INC.
Granite City Steel Co.	AQ			(NATIONAL STEEL 1971)
Graniteville Co.	SR	SR	341	
Great Northern Paper Co.	SR	SR	368	
Great Western Sugar Co., The	SR		459	GREAT WESTERN UNITED
Greenwood Mills, Inc.	SR		NI	
Grumman Aircraft Engineering Corp.	SR	SR	385	GRUMMAN CORP.
Hall (W.F.) Printing Co.	SR	AQ	340	
Handy & Harmon	SR	SR	462	
Harbison-Walker Refractories Co.	AQ			(DRESSER INDUSTRIES 1967
Harnischfeger Corp.	SR		ID	
Hazel-Atlas Glass Co.	AQ			(CONTINENTAL CAN 1956)
Heinz (H.J.) Co.	SR	SR	538	
Hills Bros. Coffee Co.	AQ			
Hinde & Dauch Paper Co., The	AQ			(WESTVACO 1953)

	2	3	4	5
Houdaille-Hershey Corp.	SR		ID	HOUDAILLE
Hughes Tool Co.	SR		ID	
Hunt Foods, Inc.	SR	SR	452	NORTON SIMON
Industrial Rayon Corp.	AQ			(MIDLAND-ROSS 1960)
Ingersoll-Rand Co.	SR	SR	27	
Interchemical Corp.	SR	AQ	439	INMONT
Interlake Iron Corp.	SR	SR	403	INTERLAKE INC.
International Milling Co.	SR	SR	460	INTERNATIONAL MULTI-FOODS
International Silver Co.	SR	SR	250	INSILCO
Interstate Bakeries Corp.	SR	AQ	187	INTERSTATE BRANDS
Joanna Western Mills Co.	SR			
Joslyn Mfg. & Supply Co.	SR	SR	319	
Joy Manufacturing Co.	SR	SR	305	
Juilliard (A.D.) & Co., Inc.	AQ			(UNITED MERCH. & MFG.1952)
Karagheusian (A.&M.), Inc.	AQ			(J.P. STEVENS 1963)
Kellogg Co.	SR	SR	16	
Kelsey-Hayes Wheel Co.	SR	AQ	204	KELSEY-HAYES
Kendall Co., The	SR	AQ	163	(COLGATE-PALMOLIVE 1972)
Keystone Steel & Wire Co.	SR	AQ	40	KEYSTONE CONSOLIDATED IND.
Kieckhefer Container Co.	AQ			(WEYERHAEUSER 1957)
Kohler Co.	SR		NI	
Kroehler Mfg. Co.	SR	SR	193	
Laclede Steel Co.	SR	SR	72	
Lees (James) & Sons Co.	AQ			(BURLINGTON INDUSTRIES 196
Lehigh Portland Cement Co.	SR	AQ	216	
Libby, McNeill & Libby	SR	AQ	552	
Liebmann Breweries, Inc.	SR		NI	
Lilly (Eli) & Co.	SR	SR	133	
Link-Belt Co.	AQ			(FMC 1967)
Lion Oil Co.	AQ			(MONSANTO 1954)
Lipton (Thomas J.), Inc.	SR		PI	
Lone Star Cement Corp.	SR	SR	148	LONE STAR INDUSTRIES
Long-Bell Lumber Co.	AQ			(INTERNATIONAL PAPER 1956
Longview Fibre Co.	SR		ID	
Lowenstein (M.) & Sons, Inc.	SR	SR	258	

	2	3	4	5
Luckens Steel Co.	SR	SR	401	
Mack Trucks, Inc.	AQ			(SIGNAL COMP.)
Magnavox Co., The	SR	AQ	88	
Mansfield Tire & Rubber Co., The	SR	SR	278	
Marathon Corp.	AQ			(AMERICAN CAN 1957)
Martin (Glenn L.) Co., The	SR	SR	601	MARTIN-MARIETTA
Masonite Corp.	SR	SR	192	
Massey-Harris Co.	SR	SR	139	MASSEY-FERGUSON
Mathieson Chemical Corp.	AQ			(OLIN
Maytag Co., The	SR	SR	12	
McElwain (J.F.) Co. (major manufacturing subsidiary of Melville Shoe Corporation)	SR	SR	41	MELVILLE SHOE
McGraw Electric Co.	SR	SR	44	McGRAW-EDISON
McGraw-Hill Publishing Co., Inc.	SR	SR	282	
McLouth Steel Corp.	SR	SR	128	
Mengel Co., The	AQ			(MARCOR 1953)
Merck & Co., Inc.	SR	SR	215	
Mid-Continent Petroleum Corp.	AQ			(SUNRAY DX 1954)
Midland Steel Products Co., The	SR	SR	68	MIDLAND ROSS
Miller Brewing Co.	AQ			(PHILIP MORRIS 1969)
Minneapolis-Honeywell Regulator Co.	SR	SR	175	HONEYWELL INC.
Minneapolis-Moline Co.	SR		ID	DOLLY MADISON
Minnesota & Ontario Paper Co.	AQ			(BOISE-CASCADE)
Mohawk Carpet Mills, Inc.[1)]	SR	SR	516	MOHASCO
Moore Business Forms, Inc.	SR		NI	MOORE CORP. LTD.
Motor Products Corp.	AQ			(WHITTAKER CORP.)
Motor Wheel Corp.	AQ			(GOODYEAR 1964)
Mount Vernon-Woodberry Mills, Inc.	AQ			(HOLLY)
Mrs. Tucker's Foods, Inc.	AQ			(ANDERSON-CLAYTON 1951)
Mullins Manufacturing Corp.	AQ			(AMERICAN STANDARD)
National Automotive Fibres, Inc.	SR	SR	218	CHRIS CRAFT
National Cash Register Co., The	SR	SR	318	NCR
National Container Corp.	AQ			(OWENS-ILLINOIS 1955)
National Cylinder Gas Co. (Delaware)	SR	AQ	207	CHEMETRON
National Gypsum Co.	SR	SR	279	

	2	3	4	5
National Malleable & Steel Castings Co.	AQ			(MIDLAND ROSS 1964)
National Supply Company, The	AQ			(ARMCO STEEL 1958)
Nestle Co.	SR	SR	ID	
New Jersey Zinc Company	AQ			(GULF & WESTERN)
Newport News Shipbuilding & Dry Dock Co.	AQ			(TENNECO 1968)
Newport Steel Corp.	AQ			(ACME STEEL 1956)
Northern Paper Mills	AQ			(AMERICAN CAN 1952)
Norton Co.	SR		ID	
Ohio Oil Co., The	AQ			(MARATHON OIL)
Oliver Corp., The	AQ	SR	ID	(WHITE MOTOR 1960)
Oneida, Ltd.	SR	SR	227	
Owens-Corning Fiberglas Corp.	SR	SR	237	
Oxford Paper Co.	AQ			(ETHYL 1967)
Pacolet Manufacturing Co.	AQ			(DEERING MILLIKEN)
Parke, Davis & Co.	AQ			(WARNER-LAMBERT 1970)
Penick & Ford, Ltd., Inc.	AQ			(R.J. REYNOLDS 1965)
Pepperell Mfg. Co.	AQ			(WEST POINT MFG. 1965)
Pepsi-Cola Co.	SR	SR	353	PEPSICO
Pfizer (Chas.) & Co., Inc.	SR	SR	110	
Publicker Industries, Inc.	SR	SR	574	
Purity Bakeries Corp. 2)	AQ			(AMERICAN BAKERIES 1953)
Raybestos-Manhattan, Inc.	SR	SR	189	
Rayonier, Inc.	AQ			(ITT)
Raytheon Manufacturing Company	SR	SR	577	
Reeves Brothers, Inc.	SR	SR	433	
Reeves Steel & Mfg. Co.	AQ			(UNIVERSAL CYCLOPS 1958)
Reichhold Chemicals, Inc.	SR	SR	593	
Reliance Manufacturing Co. (Illinois)	LQ			
Reo Motors, Inc.	AQ			(WHITE MOTOR 1957)
Republic Aviation Corp.	LQ			
Rexall Drug, Inc.	SR	SR	587	DART IND.
Rheem Manufacturing Co.	AQ			(CITY INVESTING)
Riegel Textile Corp. (Delaware)	SR	SR	478	
Robertshaw-Fulton Controls Co.	SR	SR	112	ROBERTSHAW CONTROLS
Rockwell Mfg. Co.	SR	AQ	104	

	2	3	4	5
Roebling's (John A.) Sons Co.	AQ			(CF & I 1951)
Rohm & Haas Co.	SR	SR	213	
Royal Typewriter Co., Inc.	AQ			(LITTON INDUSTRIES)
Ruberoid Company, The	AQ			(GAF 1967)
Russell-Miller Milling Co.	AQ			(PEAVEY)
St. Joseph Lead Co. (New York)	SR	SR	31	ST. JOSEPH MINERAL
Savannah Sugar Refining Corp.	SR	SR	339	SAVANNAH FOODS
Schaefer (F.M.) Brewing Co.	SR		ID	
Seeger Refrigerator Co.	AQ			(WHIRLPOOL 1955)
Servel, Inc.	AQ			(GOULD 1966)
Sheller Manufacturing Corp.	SR	SR	26	SHELLER-GLOBE
Singer Manufacturing Co., The	SR	SR	504	
Skelly Oil Co.	SR	AQ	75	
Smith (Alexander) & Sons Carpet Co.[1)]	AQ			(MOHASCO 1955)
Spartan Mills	SR		NI	
Springs Cotton Mill	SR		ID	SPRINGS MILLS
Square D Co.	SR	SR	45	
Squibb (E.R.) & Sons	AQ			(MATHIESON 1952)
Standard Steel Spring Co.	AQ			(ROCKWELL SPRING & AXLE
Stanley Works	SR	SR	251	
Stauffer Chemical Co.	SR	SR	548	
Sterling Drug, Inc.	SR	SR	176	
Stewart-Warner Corp.	SR	SR	405	
Stokely-Van Camp, Inc.	SR	SR	448	
Sunbeam Corp.	SR	SR	10	
Sunray Oil Corp.	AQ			(SUN OIL 1968)
Sunshine Biscuits, Inc.	AQ			(AMERICAN BRANDS 1966)
Sutherland Paper Co.	AQ			KALAMAZOO VEG.PARCH.(19
Swanson (C.A.) & Sons	AQ			(CAMPBELL SOUP 1954)
Tecumseh Products Co.	SR	SR	20	
Tennessee Corp.	AQ			(CITIES SERVICE 1963)
Textron, Inc.	SR	SR	591	
Thompson Products, Inc.	SR	SR	373	TRW
Times-Mirror Co.	SR	SR	556	
Tobin Packing Co., Inc.	SR	SR	451	

	2	3	4	5
Todd Shipyards Corp.	SR	SR	537	
United Biscuit Co. of America	SR	SR	299	KEEBLER
United Engineering & Foundry Co.	AQ			(WEAN UNITED 1970)
United Merchants & Manufacturers, Inc.	SR	SR	300	
United Shoe Machinery Corp.	SR	AQ	472	USM
U.S. Industrial Chemicals, Inc.	AQ			(NATIONAL DISTILLERS 1962
United States Pipe & Foundry Co.	AQ			(JIM WALTER 1969)
United States Plywood Corp.	SR	SR	182	CHAMPION INTERNATIONAL
Van Raalte Co., Inc.	AQ			(CLUETT PEABODY 1968)
Virginia-Carolina Chemical Corp.	AQ			(MOBIL OIL 1963)
Wagner Electric Corp.	SR	AQ	287	
Walker (Hiram) & Sons, Inc.	SR	SR	119	
Ward Baking Co.	SR	SR	295	WARD FOOD
Westinghouse Air Brake Co.	AQ			(AMERICAN STANDARD 1968)
Nineteen Hundred Corp. (Whirlpool Corp.)	SR	SR	85	
White Motor Co., The	SR	SR	50.2	
Wood (Alan) Steel Co.	SR		NI	
Worthington Pump & Machinery Corp.	SR		ID	STUDEBAKER-WORTHINGTON
Wrigley (Wm.), Jr. Co. (Delaware)	SR	SR	74	
Wyandotte Chemical Corp.	AQ			(BADISCHE-ANIL)
Wyman-Gordon Co.	SR		NI	
Yale & Towne Manufacturing Co., The	AQ			(EATON MFG. 1963)
Young (L.A.) Spring & Wire Corp.	SR		ID	P. HARDEMAN INC.

C. Companies Ranked 501 to 1,000

	2	3	4	5
Addressograph-Multigraph Corp.	SR	SR	82	
Affiliated Gas Equip., Inc.	AQ			(CARRIER 1955)
Alabama Mills, Inc.	AQ			(DAN RIVER 1955)
Allen-Bradley Co.	SR		NI	
Alpha Portland Cement Co.	SR	SR	208	ALPHA PORTLAND IND.
Alton Box Board Co.	SR		NI	
Aluminum Goods Mfg. Co.	SR	SR	160	MIRRO CORP.
Amalgamated Sugar Co.	SR	SR	369	
American Bakeries Company 2)	SR	SR	252	
American Bosch Corp.	SR	SR	541	AMBAC IND.
American Cast Iron Pipe Co.	SR		NI	
American Chicle Co.	AQ			(WARNER-LAMBERT 1962)
American Colortype Co. (New Jersey)	AQ			(RAPID AMERICAN)
American Crystal Sugar Co.	SR	AQ	532	
American Distilling Co., The	SR	SR	527	
American Hard Rubber Co. 3)	SR	SR	562	AMERACE ESNA
American Hardware Corp., The	SR	SR	570	EMHART
American Hide & Leather Co.	SR	SR	9	TANDY
American Laundry Machinery Co.	AQ			(McGRAW-EDISON 1960)
American Liberty Oil Co.	SR	SR	66	AMERICAN PETROFINA
American Machine & Foundry Co.	SR	SR	484	AMF
American Maize Products Co.	SR	SR	480	
American Manufacturing Co.	SR		NI	
American-Marietta Co.	AQ			(MARTIN GLENN)
American Meter Co., Inc.	AQ			(GENERAL PRECISION 1967)
American Potash & Chemical Corp.	AQ			(KERR-McGEE)
American Safety Razor Corp.	AQ			(PHILIP MORRIS 1960)
American Seating Company	SR	SR	281	
American Ship Building Co., The	SR	SR	551	
American Snuff Co.	SR	SR	447	CONWOOD
American Stove Co.	SR		ID	MAGIC CHEF
American Window Glass Co.	SR	SR	460	AMERICAN ST. GOBAIN
American Yarn & Processing Co.	AQ			(RUDDICK)
Ames Worsted Co.	SR		ID	AMES TEXTILE
Anderson-Prichard Oil Corp.	LQ			

	2	3	4	5
Apex Electrical Mfg. Co., The	AQ			(WHITE CONSOLIDATED 1956)
Arrow-Hart & Hegeman Electric Co.	SR	AQ	60	ARROW-HART
Art Metal Construction Co.	AQ			(WALTER HELLER)
Artistic Foundations, Ind.	NI			
Arvey Corp.	SR		NI	
Aspinook Corp.	AQ			(BARKER BROS)
Associated Spring Corp.	SR		ID	
Associated Plywood Mills, Inc.	AQ			(US PLYWOOD 1954)
ATF, Inc.	AQ			(SCHULEMBERGER)
Atlas Plywood Corp.	AQ			(CONSOLIDATED ELECTRIC)
Atlas Powder Co.	AQ			(IMPERIAL CHEMICAL 1971)
Autocar Co.	AQ			(WHITE MOTOR
Ball Brothers Co.	SR		ID	BALL CORP.
Bancroft (Joseph) & Sons Co.	AQ			(INDIAN HEAD 1961)
Barber-Colmon Co.	SR		NI	
Bassett Furniture Industries, Inc.	SR	SR	93	
Bath Iron Works Corp.	SR	AQ	488	BATH INDUSTRIES
Bausch & Lomb Optical Co.	SR	SR	563	
Bay Petroleum Corp.	AQ			(TEXAS GAS TRANS.)
Bayuk Cigars, Inc.	SR	SR	585	
Beacon Manufacturing Co.	AQ			(NATIONAL DIST. & CHEM. 1966
Beech Aircraft Corp.	SR	AQ	542	
Bell Co., The	AQ			(PACIFIC COAST)
Bell & Howell Co.	SR	SR	365	
Beloit Iron Works	SR		NI	BELOIT CORP.
Berkshire Knitting Mills	AQ			(V.F. CORP.)
Bird & Son, Inc.	SR		NI	
Black & Decker Mfg. Co., The	SR	SR	178	
Black, Sivalls & Bryson, Inc.	AQ			(HUSTON OIL)
Blackstone Corp.	SR		NI	
Bliss, E.W., Co.	AQ			(GULF & WESTERN)
Blockson Chemical Co.	AQ			(OLIN 1955)
Blumenthal (Sidney) & Co., Inc.	AQ			(BURLINGTON INDUSTRIES
Boston Woven Hose & Rubber Co.	AQ			(AMER, BILTRITE RUB.1957)
Botany Mills, Inc.	SR	NI	602	BOTANY INDUSTRIES

	2	3	4	5
Bower Roller Bearing Co.	AQ			(FEDERAL MOGUL 1954)
Bowser Inc.	AQ			(KEENE 1968)
Brach (E.J.) & Sons	AQ			(AMER, HOME PRODUCTS 1966)
Brown & Bigelow	AQ			(STANDARD PACKAGING)
Brown-Forman Distillers Corp.	SR	SR	329	
Brown Paper Mill Co., Inc.	AQ			(OLIN MATHIESON 1955)
Brown & Sharpe Mfg. Co.	SR	SR	586	
Bruce, E.L., Co.	SR	SR	153	COOK INDUSTRIES
Brunswick-Balke-Collender Co., The	SR	SR	550	BRUNSWICK CORP.
Buda Co.	AQ			(ALLIS-CHALMERS 1953)
Buffalo Bolt Co.	AQ			(HOUDAILLE IND. 1957
Buffalo Forge Co.	SR	SR	87	
Tex-O-Kan Flour Mills (Burrus Mills)	AQ			(CARGILL 1971)
Butler Manufacturing Co.	SR	SR	131	BUTLER INTERNATIONAL
Byers (A.M.) Co.	AQ			(GENERAL TIRE 1956)
Cabot Carbon Co.	SR		ID	
Camp Manufacturing Co., Inc.	AQ			(UNION BAG 1955)
Campbell, Wyant & Cannon Foundry Co.	AQ			(TEXTRON 1956)
Canada Dry Ginger Ale, Inc.	AQ			(NORTON SIMON 1968)
Carpenter Steel Co.	SR	SR	135	CARPENTER TECHNOLOGY
Ceco Steel Products Corp.	SR	SR	162	CECO CORP.
Centennial Flouring Mills Co.	AQ			(UNITED PACIFIC)
Central Fibre Products Co., Inc.	AQ			(TENNECO)
Century Electric Co.	AQ			(GOULD 1972)
Chain Belt Co.	SR	SR	276	REXNORD
Champlin Refining Co.	AQ			(CELANESE 1964)
Chatham Mfg. Co.	SR		ID	
Cheney Brothers	AQ			(J.P. STEVENS 1955)
Chesapeake Corp. of Virginia	SR	SR	17	
Chicago Daily News, Inc., The	AQ			(FIELD ENTERPRISES)
Chicago Mill & Lumber Co.	LQ			
Chicago Pneumatic Tool Co. (New Jersey)	SR	SR	165	
Ciba Pharmaceutical	SR		ID	CIBA GEIGY
Cincinnati Milling Machine Co.	SR	SR	346	CINCINNATI MILACRON
Clark Thread Co.	NI			

	2	3	4	5
Cleveland Graphite Bronze Co., The	AQ			(GOULD 1969)
Cleveland Twist Drill Co.	AQ			(NATIONAL ACME 1967)
Cleveland Worsted Mills Co.	LQ			
Climax Molybdenum Co.	AQ			(AMERICAN METAL 1957)
Clow (James B.) & Sons	SR		ID	CLOW CORP.
Coleman Company, Ind. (Kansas)	SR	SR	123	
Columbia Broadcasting System, Ind.	SR	SR	485	
Columbia River Paper Co.	AQ			(BOISE CASCADE)
Columbian Carbon Co.	AQ			(CITY SERVICES 1962)
Conde Nast Publications, Inc.	AQ			(PATRIOT NAST)
Consolidated Chemical Industries, Inc.	AQ			(STAUFFER CHEMICAL 1951)
Continental-Diamond Fibre Co.	AQ			(BUDD 1955)
Continental Foundry & Machine Co.	LQ			
Continental Steel Corp.	SR	AQ	352	
Cook Paint & Varnish Co.	SR	PI	249	
Cooper-Bessemer Corp., The	SR	SR	235	
Coors (Adolph) Co.	SR	SR	NI	
Coos Bay Lumber Co.	AQ			(GEORGIA PACIFIC 1956)
Cornell Wood Products Co.	AQ			(ST. REGIS PAPER 1959)
Cosden Petroleum Corp.	AQ			(AMERICAN PETROFINA 1963)
Creameries of America, Inc.	AQ			(BEATRICE FOODS 1952)
Crocker Burbank & Co., Assn.	AQ			(WEYERHAEUSER 1962)
Crompton & Knowles Loom Works	SR	SR	180	
Crossett Lumber Co.	AQ			(GEORGIA PACIFIC 1962)
Crown Central Petroleum Corp.	SR	SR	469	
Cuban-American Sugar Co., The	LQ			
Darling & Co.	SR		NI	
Davison Chemical Corp.	AQ			(W.R. GRACE)
Dayton Malleable Iron Co.	SR	SR	430	
Dayton Rubber Co., The	SR	SR	347	DAYCO
De Laval Separator Co.	LQ			
Decca Records, Inc.	AQ			(M.C.A. 1966)
Deep Rock Oil Corp.	AQ			(NATIONAL INDUSTRIES)
Dennison Manufacturing Co.	SR	SR	114	
Detroit Harvester Co.	AQ			(WALTER KIDDE)

	2	3	4	5
Detroit Steel Products Co.	AQ			(SPACE INDUSTRIES 1971)
Dewey & Almy Chemical Co.	AQ			(W.R. GRACE)
Diamond T Motor Car Co.	LQ			
Dierks Lumber & Coal Co.	AQ			(WEYERHAEUSER 1969)
Disston (Henry) & Sons	AQ			(H.K. PORTER 1962)
Dixie Cup Co.	AQ			(AMERICAN CAN 1957)
Dixie Mercerizing Co.	SR		NI	
Doniger (David D.) & Co. Inc.	NI			
Doubleday & Co., Inc.	SR		NI	
Doughnut Corp. of America	NI			
Draper Corp.	AQ			(NORTH AM. ROCKWELL)
Dunlop Tire & Rubber Corp.	SR		PI	
Duplan Corp.	SR	SR	555	
Duquesne Brewing Co. of Pittsburgh	AQ			(SCHMIDTS BREWING 1972)
Durez Plastics & Chemicals, Inc.	AQ			(OCCIDENTAL PETROL.)
Dwight Manufacturing Co.	AQ			(CONE MILLS 1951)
Eastern Corp.	AQ			(STANDARD PACKAGING)
Easy Washing Machine Corp.	AQ			(MURRAY 1955)
Eddy Paper Corp.	AQ			(WEYERHAEUSER 1957)
Edison (Thomas A.), Inc.	AQ			(McGRAW-EDISON 1957)
Ekco Products Co. (Illinois)	AQ			(AMER. HOME PRODUCTS 1965
El Dorado Oil Works	AQ			(FOREMOST DAIRIES 1955)
Elliott Co.	AQ			(CARRIER 1957)
Emerson Electric Manufacturing Co.	SR	SR	321	
Emhart Manufacturing Co.	AQ			(AMER. HARD RUBBER 1964)
Emsco Derrick & Equipment Co.	AQ			(YOUNGSTOWN S & T. 1955)
B.V.D. Corp., The (Erlanger Mills Corp.)	LQ			
Evans Products Company	SR	SR	505	
Eversharp, Inc.	AQ			(WARNER-LAMBERT 1970)
Ex-Cell-O Corp.	SR	SR	205	
Fafnir Bearing Co.	AQ			(TEXTRON 1968)
Falstaff Brewing Corp.	SR	SR	118	
Falk Corp.	AQ			(SUNSTRAND)
Farrel-Birmingham Co., Inc.	AQ			(USM 1968)
Federal-Mogul Corp.	SR	SR	61	

	2	3	4	5
Federal Paper Board Co.	SR	SR	332	
Ferguson (Harry), Inc.	AQ			(MASSEY-HARRIS CO. 1953)
Ferro Corp.	SR	SR	356	
Firth Carpet Co.	AQ			(MOHASCO 1962)
Fisher Flouring Mills Co.	SR		NI	
Florence Stove Co.	SR	SR	440	ROPER GEO.
Flotill Products, Inc.	AQ			(OGDEN)
Flour Mills of America, Inc.	SR		NI	
Follansbee Steel Corp.	AQ			(UNION CHEM. & MAT.)
Foremast Dairies, Inc.	SR	SR	336	FOREMOST-McKESSON
Fort Wayne Corrugated Paper Co.	AQ			(CONTINENTAL CAN 1959)
Free Sewing Machine Co.	NI			
French Sardine Co. of Calif.	NI			
Froedtert Grain & Malting Co., Inc.	SR	AQ	230	SOLA BASIC
Fruit Growers Supply Co.	SR		NI	
Fry (Lloyd A.) Roofing Co.	SR		NI	
Fuller Brush Co.	AQ			(CONSOLIDATED FOODS)
Fuller (W.P.) & Co.	AQ			(NORTON SIMON)
Gardner-Denver Co.	SR	AQ	125	
Garlock Packing Co.	SR		ID	GARLOCK INC.
General Cigar Co.*	SR	SR	590	
General Fireproofing Co.	SR	SR	56	
General Portland Cement Co.	SR	SR	21	
General Precision Equipment Corp.	AQ			(SINGER 1968)
General Refractories Co.	SR	SR	196	
General Steel Castings Corp.	SR	SR	482	GENERAL STEEL INDUSTRIES
General Time Corp.	AQ			(TALLY INDUSTRIES)
Georgia-Pacific Plywood & Lumbar Co.	SR	SR	194	
Gladding McBean & Co.	AQ			(INTERPACE 1962)
Glenmore Distilleries Co.	SR	SR	409	
Goebel Brewing Co.	AQ			(STROH's BREW.)
Gordon Baking Co.	AQ			(AMERICAN BRANDS 1956)
Gorham Mfg. Co.	AQ			(TEXTRON 1967)
Great Lakes Carbon Corp.	AQ			(KENNECOTT COPPER)
Greenbaum (J.) Tanning Co.	NI			

	2	3	4	5
Green Giant Co.	SR	AQ	362	
Greif Brothers Cooperage Corp.	SR	AQ	408	
Griesedieck Western Brewery Co.#	AQ			(CARLING)
Grinnell Corp.	SR	AQ	210	
Gruen Watch Co.	SR	NI	317	GRUEN INDUSTRIES
Gulf States Paper Corp.	SR		ID	
Hall Brothers, Inc.	NI			
Hamilton Watch Co.	SR	SR	506	HMW
Hamm (Theo.) Brewing Co.	AQ			(HEUBLIN 1965)
Hammermill Paper Co.	SR	SR	455	
Hammond Lumber Co.	AQ			(GEORGIA PACIFIC 1956)
Hanes (P.H.) Knitting Co.	SR		ID	
Harbor Plywood Corp.	AQ			(HUNT FOODS 1960)
Harley Davidson Motor Co.	AQ			(AMF 1969)
Harris-Seybold-Potter Co.	SR	SR	101	HARRIS INTERTYPE
Harshaw Chemical Co., The	AQ			(KEWANEE OIL 1966)
Hart, Schaffner & Marx	SR	SR	566	
Hathaway Manufacturing Co.	AQ			(BERKSHIRE-HATHAWAY 1955)
Heil Co.	SR		ID	
Heintz Mfg. Co.	AQ			(KELSEY-HAYES 1957)
Hercules Motors Corp.	AQ			(WHITE CONSOLIDATED 1960)
Hewitt-Robins, Inc.	AQ			(LITTON INDUSTRIES)
Heyden Chemical Corp.	AQ			(TENN. GAS TRANS.)
Heywood-Wakefield Co.	SR	NI	457	
Hines (Edward) Lumber Co.	SR	SR	51	
Hobart Manufacturing Co., The	SR	SR	214	
Hoe (R.) & Co., Inc.	SR	NI	150	
Hoffman-LaRoche, Inc.	SR	SR	PI	
Holeproof Hosiery Co.	AQ			(KAYSER-ROTH 1954)
Hollingsworth & Whitney Co.	AQ			(SCOTT PAPER 195[illegible])
Holly Sugar Corp.	SR	SR	568	
Hooker Electrochemical Co.	AQ			(OCCIDENTAL PETROL.)
Hoover Co., The (Ohio)	SR	SR	291	
Howes Leather Co., Inc.	SR		ID	
Hubbard & Co.	AQ			(DYSON CORP.)

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	2	3	4	5
Huber (J.M.) Corp.	AQ			(A-T-O INC)
Hudson Pulp & Paper Corp.	SR	AQ	465	
Huron Portland Cement Co.	AQ			(NATIONAL GYPSUM 1959)
Ideal Cement Co.	SR		62	IDEAL BASIC INDUSTRIES
Imperial Paper & Color Corp.	AQ			(HERCULES 1960)
Imperial Sugar Co.	SR		NI	
Ingalls Iron Works Co., The	SR		NI	
Inland Container Corp.	SR		ID	
Inspiration Consolidated Copper Co.	SR	AQ	185	
International Latex Corp.	AQ			(GLEN ALDEN)
International Minerals & Chemical Corp.	SR	SR	284	
International Salt Co.	AQ			(AKZONA 1970)
I-T-E Circuit Breaker Co.	SR	AQ	377	I-T-E IMPERIAL
Jack & Heintz Precision Industries, Inc.	AQ			(LEAR-SIEGLER)
Jacobs (F.L.) Co.	SR	SR	600	
Jeffrey Mfg. Co.	SR		ID	
Jergens (Andrew) Co.	AQ			(AMERICAN BRANDS 1970)
Johnson (S.C.) & Son	AQ			
Kalamazoo Vegetable Parchment Co.	AQ			(GEORGIA PACIFIC 1967)
Kayser (Julius) & Co.	SR	AQ	540	KAYSER ROTH
Keasbey & Mattison Co.	AQ			(CERTAIN-TEED 1961)
Kendall Refining Company	AQ			(WITCO CHEMICAL 1966)
King-Seeley Corp.	AQ			(HFC)
Koehring Co.	SR	SR	302	
Ladish Co.	SR		NI	
Lambert Co., The	SR	SR	536	WARNER-LAMBERT
Lamson & Sessions Co.	SR	SR	200	
Landers, Frary and Clark	AQ			(J.B. WILLIAMS)
Lavino (E.J.) & Co.	AQ			(INT. MIN. & CHEM. 1965)
Le Tourneau (R.G.), Inc.	SR		NI	
Lee (H.D.) Co., Inc.	AQ			(V.F. CORP. 1969)
Lee Rubber & Tire Corp.	SR		ID	LEE NATIONAL
Lennox Furnace Co., The	SR		NI	
Leviton Manufacturing Co., Inc.	SR		NI	
Lewin-Mathes Co.	AQ			(CERRO-deFASCO 1956)

	2	3	4	5
Life Savers Corp.	AQ			(SQUIBB 1955)
Lily-Tulip Cup Corp.	AQ			(OWENS-ILLINOIS 1968)
Linen Thread Co., Inc.	AQ			(INDIAN HEAD 1959)
Lincoln Electric Co.	SR		NI	
Liquid Carbonic Corp., The	AQ			(GENERAL DYNAMICS)
Lock Joint Pipe Co.	AQ			(INTERPACE)
Lone Star Steel Co.	AQ			(NORTHWEST INDUSTRIES)
Lorraine Mfg. Co.	AQ			(GREAT AM. INDUSTRIES)
Lowe (Joe) Corp.	AQ			(CONS. FOODS 1964)
Lucky Lager Brewing Co.	SR		ID	LUCKY BREWING
Ludlow Manufacturing & Sales Co.	SR	SR	578	LUDLOW CORP.
M & M Wood Working Co.	SR		PI	
Magee Carpet Co.	SR			
Mallinckrodt Chemical Works	SR		ID	
Mallory (P.R.) & Co., Inc.	SR	AQ	221	
Manhattan Shirt Co., The	SR	SR	525	
Manitowoc Shipbuilding Co.	SR		NI	
Manning, Maxwell & Moore, Inc.	LQ			
Marion Power Shovel Co.	LQ			UNIVERSAL MARION
Marlin-Rockwell Corp.	AQ			(TRW 1963)
Marquette Cement Mfg. Co.	SR	AQ	191	
Mars, Inc.	SR		ID	
Masland (C.H.) & Sons	SR		ID	
Matthiessen & Hegeler Zinc Co.	SR		ID	
McCall Corp.	AQ			(NORTON SIMON 1968)
McCord Corp.	SR	AQ	39	
McCormick & Co.	SR	SR	212	
Mead Johnson & Co.	AQ			(BRISTOL MYERS 1967
Medusa Portland Cement Co.	SR	SR	310	MEDUSA CORP.
Meredith Publishing Co.	SR	SR	64	
Mergenthaler Linotype Co.	SR	AQ	510	ELTRA
Mesta Machine Co.	SR	SR	97	
Metal & Thermit Corp.	AQ			(AMERICAN CAN 1962)
Miehle Printing Press & Mfg. Co.	AQ			(NORTH AM. ROCKWELL)
Milprint, Inc.	AQ			(PHILIP MORRIS 1956)

	2	3	4	5
Mississippi Cottonseed Products Co.	SR		NI	
Moloney Electric Co.	AQ			(COLT INDUSTRIES)
Monarch Mills	AQ			(DEERING MILLIKAN)
Moore (Benjamin) & Co.	SR		NI	
Mooresville Mills	AQ			(BURLINGTON IND. 1954)
Morton Salt Co.	AQ			(NORWICH 1969)
Mueller Brass Co.	SR	AQ	171	UV INDUSTRIES
Munsingwear, Inc.	SR	SR	414	
Murray Company of Texas, Inc.	AQ			(NORTH AM. AVIATION)
National Acme Co., The	SR	SR	232	ACME CLEVELAND
National Can Corp.	SR	SR	557	
National Coop. Refinery Association	SR	ID		(ASHLAND OIL)
National Electric Products Corp.	AQ			(McGRAW-EDISON 1958)
National Pressure Cooker Co.	SR	SR	331	NATIONAL PRESTO
National Screw & Manufacturing Co.	AQ			(MONOGRAM INDUSTRIES)
National-Standard Company	SR	SR	143	
Naumkeag Steam Cotton Co.	SR	AQ	596	INDIAN HEAD
Nekoosa-Edwards Paper Company	AQ			(GREAT NORTHERN PAPER 197C
Neptune Meter Company	SR	AQ	81	NEPTUNE INTERNATIONAL
Nesco, Inc.	AQ			(N.Y. SHIPBUILDING 1954)
New York Air Brake Company, The	AQ			(GENERAL SIGNAL)
New York Shipbuilding Corporation	AQ			(MERRITT, CHAPMAN 1970)
Newport Industries, Inc.	AQ			(TENN. GAS TRANS.)
Nicholson File Co.	AQ			(COOPER INDUSTRIES 1971)
Niles-Bement-Pond Co.	AQ			(COLT INDUSTRIES)
Noma Electric Corp.	AQ			(SIRNAL CORP.)
Nopco Chemical Company, Inc.	AQ			(DIAMOND-SHAMROCK 1967)
Nordberg Mfg. Co.	AQ			(REXNORD 1970)
Northwest Engineering Co.	SR	SR	223	
Northwest Paper Co., The	AQ			(POTLATCH FORESTS 1964)
Northwestern Steel & Wire Co.	SR	SR	106	
Ohio Boxboard Co.	AQ			(CENTRAL FIBRE PROD.)
Ohio Brass Co., The	SR	AQ	14	
Ohio Crankshaft Co.	SR	AQ	487	PARK-OHIO
Ohio Match Company	AQ			(NORTON SIMON)

	2	3	4	5
Ohio Rubber Co., The	AQ			(EAGLE PITCHER 1952)
Okonite Co.	AQ			(KENNECOTT COPPER 1957)
Oswego Falls Corporation	AQ			(PHILLIPS PETROLEUM 1964)
Otis Elevator Co. (New Jersey)	SR	AQ	102	
Outboard, Marine & Manufacturing Co.	SR	SR	111	
Pacific American Fisheries, Inc.	AQ			(UNITED PACIFIC 1966)
Pacific Car & Foundry Co.	SR	SR	428	PACCAR
Pacific Lumber Co.	SR	SR	137	
Parker Pen Co., The	SR	SR	113	
Pasco Packing Co.	SR		ID	
Peerless Woolen Mills	AQ			(1952)
Pennsylvania-Dixie Cement Corp.	SR	SR	76	PENN-DIXIE INDUSTRIES
Pennsylvania Salt Manufacturing Co.	SR	SR	436	PENNWALT
Perfection Stove Co.	AQ			(WHITE CONSOLIDATED 1954)
Permanente Cement Co.	AQ			(KAISER CEMENT)
Peter Paul, Inc.	SR	AQ	239	
Petroleum Heat & Power Co.	LQ			
Pettibone Mulliken Corp.	SR	SR	454	PETTIBONE CORP.
Phillips-Jones Corp.	SR	SR	463	PHILLIPS-VanHEUSEN
Pittsburgh Coke & Chemical Co.	AQ			
Pittsburgh Forgings Co.	SR	AQ	149	
Pittsburgh Screw & Bolt Corp.	SR	SR	77	AMPCO-PITTSBURGH
Planters Nut & Chocolate Co.	AQ			(STANDARD BRANDS 1960)
Plymouth Cordage Co.	AQ			(EMHART 1960)
Pope & Talbot, Inc.	SR		ID	
Potlatch Forests, Inc.	SR	SR	275	POTLATCH CORP.
Powdrell & Alexander, Inc.	SR		PI	
Premier Petroleum Co.	NL			(SUN OIL)
Proctor & Schwartz, Inc.	AQ			(SCM 1966)
Publication Corp.	AQ			(CROWELL, COLLIER)
Puget Sound Pulp & Timber Co.	AQ			(GEORGIA PACIFIC 1963)
Quaker State Oil Refining Corp.	SR	SR	380	
Rahr Malting Co.	SR		NI	
Readers Digest Associates, Inc.	SR		NI	
Reed Roller Bit Co.	SR		238	REED TOOL

	2	3	4	5
Reliance Electric & Engineering Co., The	SR	AQ	229	
Rhinelander Paper Co.	AQ			(ST. REGIS PAPER 1956)
Rice-Stix, Inc.	LQ			
Richardson Co.	SR	SR	364	
Richman Brothers Co.	AQ			(WOOLWORTH)
Riegel Paper Corp.	AQ			(FEDERAL PAPERBOARD 1972)
Robbins Mills, Inc.	AQ			(TEXTRON 1954)
Robertson (H.H.) Co.	SR	SR	83	
Rome Cable Corp.	AQ			(ALCOA 1959)
Ronson Art Metal Works, Inc.	SR	SR	253	RONSON CORP.
Royster (F.S.) Guano Co.	SR		ID	
Ruppert (Jacob)	AQ			(KRATTER CORP. 1962)
Russell, Burdsall & Ward Bolt & Nut Co.	SR		NI	
Saco-Lowell Shops (Maine)	AQ			(MAREMONT)
Sangamo Electric Co.	SR	AQ	262	
Savage Arms Corp.	AQ			(EMHART 1957)
Sayles Finishing Plants, Inc.	SR		NI	
Schweitzer (Peter J.), Inc.	AQ			(KIMBERLY-CLARK 1957)
Scullin Steel Company	LQ			
Seabrook Farms Co. (N.J.)	SR	AQ	554	
Seiberling Rubber Co.	SR	SR	410	SEILON
Shamrock Oil & Gas Corp., The	AQ			(DIAMOND ALKALI 1967)
Sharp & Dohme, Inc. (Maryland)	AQ			(MERK 1953)
Sheaffer (W.A.) Pen Co.	AQ			(TEXTRON 1966)
Shellmar Products Corp.	AQ			(DIAMOND GARNER)
Shenango Furnace Co.	SR		NI	
Shuford Mills, Inc.	SR		NI	
Shwayder Bros., Inc.	NI			
Simonds Saw & Steel Co.	AQ			(WALLACE-MURRAY 1966)
Simpson Logging Co.	SR		NI	
S.K.F. Industries, Inc.	SR		PI	
Smith (L.C.) & Corona Typewriters, Inc.	SR	SR	390	SCM
Smith-Douglass Co., Inc.	AQ			(BORDEN 1964)
Smith, Kline & French Laboratories	SR	SR	15	SMITHKLINE
Sonoco Products Co.	SR	SR	158	

	2	3	4	5
Sorg Paper Company	SR	SR	512	
Soundview Paper Company	AQ			(SCOTT PAPER 1950)
South Penn Oil Co.	SR	SR	78	PENNZOIL
Southern Advance Bag & Paper Co., Inc.	AQ			(CONTINENTAL CAN 1954)
Southland Paper Mills, Inc.	SR	AQ	50	
Southwestern Portland Cement Co.	AQ			(SOUTHDOWN)
Spalding (A.G.) & Brothers, Inc.	AQ			(QUESTOR 1969)
Standard-Coosa-Thatcher Co.	SR	SR	313	
Standard Lime & Stone Co.	NI			
Standard Railway Equipment Mfg. Co.	SR	AQ	33	STANRAY
Standard Screw Co.	SR	SR	269	STANADYNE
Stanley Home Products, Inc.	SR	SR	32	
St. Joe Paper Co.	SR		NI	
St. Paul & Tacoma Lumber Co.	AQ			(ST. REGIS PAPER '56)
Stetson (John B.) Co.	SR	AQ	500	
Stromberg-Carlson Co.	AQ			(GENERAL DYNAMICS)
Sun Chemical Corp.	SR	SR	372	
Superior Steel Corp.	AQ			(COPPERWELD STEEL 1956)
Surface Combustion Corp.	AQ			(MIDLAND-ROSS 1956)
Swisher (Jno. H.) & Son, Inc.	AQ			(AMERICAN MAIZE 1966)
Talon, Inc.	AQ			(TEXTRON 1968)
Taylor Forge & Pipe Works	AQ			(GULF & WESTERN)
Tennessee Products & Chemical Corp.	AQ			(MERRITT, CHAPMAN)
Textile Machine Works	NI			
Textiles-Incorporated	SR	SR	73	
Thatcher Glass Manufacturing Co.	AQ			(REXALL DRUG 1966)
Thermoid Co.	AQ			(H.K. PORTER)
Thew Shovel Co.	AQ			(KOEHRING 1964)
Thomaston Mills	SR	SR	19	
Thor Corp.	AQ			(SCM 1967)
Toledo Scale Co.	AQ			(RELIANCE ELECTRIC 1967)
Torrington Co., The	AQ			(Ingersoll-Rand 1969)
Trailmobile Co.	AQ			(PULLMAN 1951)
Trane Company	SR	SR	116	
Triangle Conduit & Cable Co.	SR		ID	TRIANGLE INDUSTRIES

	2	3	4	5
Trico Products Corp.	SR	SR	164	
True Temper Corp.	AQ			(ALLEGHENY LUDLUM 1967)
Twin Coach Co.	AQ			(WHEELABATON)
Underwood Corp.	AQ			(OLIVETTI)
United Carbon Co.	AQ			(ASHLAND OII 1963)
United Carr Fastener Corp.	AQ			(TRW 1968)
United Drill & Tool Corp.	AQ			(TRW 1968)
United Elastic Corp.	AQ			(J.P. STEVENS 1968)
United States Envelope Co.	AQ			(WESTVACO 1960)
United States Hoffman Machinery Corp.	NI			
United States Playing Card Co.	AQ			(DIAMOND INTERNATIONAL 19(
U.S. Printing & Lithograph Co., The	AQ			(DIAMOND INTERNATIONAL 19
United States Radiator Corp.	AQ			(NATIONAL U.S. RADIATOR19
United States Tobacco Co.	SR	SR	327	
Universal-Cyclops Steel Corp.	SR	SR	121	CYCLOPS CORP.
Upjohn Co., The	SR	SR	599	
Utah-Idaho Sugar Co.	SR	SR	580	U & I INC.
Utica & Mohawk Cotton Mills, Inc.	AQ			(J.P. STEVENS 1952)
Van Norman Co.	AQ			(GULF & WESTERN)
Vanadium Corp. of America	AQ			(FOOTE MINERAL)
Verney Corp.	AQ			(GLEN ALDEN)
Vick Chemical Co.	SR	SR	154	RICHARDSON-MERRILL
Victor Chemical Works	AQ			(STAUFFER-CHEMICAL 1959)
Visking Corp.	AQ			(UNION CARBIDE 1955)
Waldorf Paper Products Co.	AQ			(HOERNER-WALD 1966)
Walworth Co.	AQ			(INTERNATIONAL UTILITIES 19
Wanskuck Co.	SR		ID	
Warner & Swasey Co., The	SR	AQ	232	
Warren (S.D.) Co.	AQ			(SCOTT PAPER 1967)
Washburn Wire Co.	SR	NI	328	
Waukesha Motor Co.	AQ			(BANGOR PUNTA)
Weatherhead Co., The	SR	AQ	473	
Welch Grape Juice Co.	SR		ID	
Werthan Bag Corp.	SR		NI	
Western Printing & Lithographing Co.	SR	AQ	206	WESTERN PUBLISHING

	2	3	4	5
White Sewing Machine Corp.	SR	SR	507	WHITE CONSOLIDATED
Whitin Machine Works	AQ			(WHITE CONSOL. 1965)
Whitman (William) Co., Inc.	LQ			(GULF OIL 1960)
Wilshire Oil Co.	AQ			
Wiscassett Mills Co.	SR		NI	
Wood (Gar) Industries, Inc.	AQ			(SARGENT IND. 1970)
Wood (John) Mfg. Co., Inc.	AQ			(MOLSON IND.)
Woodside Mills	AQ			(DAN RIVER 1956)
Woodward Iron Co.	AQ			(MEAD 1968)
Wurlitzer (Rudolph) Co.	SR	SR	558	
York Corp.	AQ			(BORG-WARNER 1956)

* Through an error in the company's report General Cigar Co. was considered to have manufacturing shipments too small to be included among the 1,000 largest manufacturing companies. Subsequently the tabulations on the cigar industry were amended to include it.

Through an error in the company's report Griesedieck Western Brewery Co. was considered to be among the companies ranked 201 to 500. The tabulations on the beer industry are based on the company's amended report.

1) Smith acquired Mohawk Carpet in 1955, but Mohawk is regarded as surviving to avoid dropping observation.

2) American Bakeries acquired by Purity in 1953, but American regarded as surviving to avoid losing observation.

3) Bachmann Uxbridge acquired American Hard Rubber in 1957. Name changed to Amerace, Amerace sold Bachman Uxbridge in 1960.

D. Companies in 1000 largest of 1972 but not in 1000 largest 1950, and in sample of 603.

Name	Profit Rank 1950-1952
Air Products & Chemicals	475
Allied Products	203
Amcord	99
American Biltrite	474
Ametek	233
Anderson, Clayton	404
Armada Corporation	8
Altantic Steel	571
Avon Products	59
Bangor Punta	423
Beckman Instruments	325
Beech Aircraft	542
Belden Corp	170
Belding Hemingway	470
Bliss & Laughlin Industries	501
Boeing	424
Boise Cascade	335
Briggs & Stratton	22
Carling Brewing Co.	309
Cerro Corp.	338
Cessna Aircraft	519
Chesebrough-Pond's Inc.	90
Collins Radio Co.	483
Colt Industries	598
CBS	485
Consolidated Foods	530
Continental Copper & Steel Ind.	543
Copeland Corp.	91
Copper Range	420
Curtis-Wright Corp.	524
Diebold	445
Dr. Pepper	330
Ethyl	407
Faberge	211
Fairchild Camera & Instrument	561
Fairchild Industries	509
Fansteel	363
Fedders	89
Foster Wheeler Corp.	565
Central Foundry	259
Culbro	590
General Dynamics	597
General Instrument Corp.	544
General Signal	375
Grace, W.R. & Co.	549
Grolier, Inc.	514
Grumman Corp.	385
Gulf & Western Industries	141
Halliburton Co.	49
Hammond Corp.	12
Heileman, G. Brewing Co.	29
Helena Rubinstein	255
Helme Products	360
Hercules Incorporated	151
Heublin, Corp.	520
Interpace	379
Kaiser Cement & Gypsum	24
Kerr-McGee Corp.	417
Kidde, Walter & Co.	493
LTV	588
Lehigh Valley Industries	584
Lockheed Aircraft Corp.	518
Marathon Oil	28

Name	Profit Rank 1950-1952
Maremont Corp.	241
Martin Marietta	601
Masco Corp.	34
McDonnell Douglas Corp.	155
Miles Laboratories	96
Mohawk Rubber Co.	201
Monroe Auto Equipment Co.	446
Morton-Norwich Products	132
Nalco Chemical Co.	55
National Union Electric Corp.	367
Northrop Corp.	323
Noxell Corp.	7
Ogden Corp.	595
Oxford Industries	479
Parker-Hannifin Corp.	513
Pitney-Bowes, Inc.	357
Polaroid	65
Porter, H.K. Co.	355
Purex Corp.	308
Purolator, Inc.	79
Ranco, Inc.	25
Rapid-American Corp.	517
Rockwell International Corp.	52
Rohr Industries	167
Royal Crown Cola	36
Rubbermaid, Inc.	5
Schering-Plough Corp.	296
Searle, G.D. & Co.	4
Signal Companies	589
Signode Corp.	236
Skil Corp.	46
Sprague Electric Co.	23
Standard Pressed Steel	86

Name	Profit Rank 1950-1952
Stone Container Corp.	43
Sucrest Corporation	545
Sundstrand Corp.	254
Tenneco	224
Thiokol Corp.	511
Thomas & Betts Corp.	53
Trans Union Corp.	477
UMC Industries	397
United Technologies Corp.	429
United Brands Co.	57
V.F. Corp.	312
Victor Comptometer Corp.	124
Walter, Jim Corp.	444
Whittaker Corp.	1
Wickes Corp.	166
Witco Chemical Corp.	349
Xerox Corp.	464

E. Companies in 603 firm sample but in neither the 1,000 largest sample of 1950 nor the 1,000 largest sample for 1972.

Name	Profit Rank 1950-1952	
Adams-Mills	415	
Bond Clothing	523	
British Petroleum	267	
Baldwin	492	
Freepont Minerals	42	
Foote	195	
Giant Portland Cement	95	
Giddings Lewis	490	
Hazeltine	294	
Helene Curtis	466	
Howmet	168	
Leesona	579	
Mississippi Portland Cement	280	
Moly Corp.	315	
Monarch Machine	286	
Pittston	583	
Tootsie Roll	98	
Standard Kollsman	6	
Starrett	432	

APPENDIX A-2

What follows is a list of the names of the industry categories used in this study to determine market shares, and the weights used to define industry variables like advertising intensity and concentration. First come the 1950 industry names. New SIC is the number Carl Schwinn assigned to the industry or industries listed to the right with their appropriate SIC (OLD SIC) numbers. Following these comes the 1972 industry list with the Weiss C4 where available. Where not available we constructed a C4 from the Census (national level) figures.

NEW SIC	CENSUS VALUE* OF SHIPMENTS	OLD SIC	DESCRIPTION
19110	999999 **	19110	GUNS AND MOUNTS - 20 MM AND ABOVE--THE CODE 999999 INDICATES THAT THE CPR SAMPLE TOTAL WAS USED IN PLACE OF THE CENSUS VALUE OF SHIPMENTS
19210	999999	19210	AMMUNITION - 20 MM AND ABOVE
19290	999999	19290	BOMBS - DEPTH CHARGES - MINES - TORPEDOES
19310	999999	19311	COMBAT TANKS AND PARTS
		19312	RECOVERY TANKS AND PARTS
19410	999999	19411	BOMB SHACKLES AND GUNSIGHT REFLECTORS
19510	999999	19512	SMALL ARMS UNDER 20 MM (EXCEPT MACHINE GUNS)
19610	999999	19610	AMMUNITION UNDER 20 MM
20110	61893	20111	FRESH MEATS (MADE IN ESTABLISHMENTS PRIMARILY ENGAGED IN OWN SLAUGHTERING)
		20114	HIDES, BONES AND INEDIBLE MEATS (MADE IN ESTABLISHMENTS PRIMARILY ENGAGED IN OWN SLAUGHTERING
		20133	PREPARED MEAT PRODUCTS FOR HUMAN CONSUMPTION-INCLUDING LARD (MADE PRIMARILY FROM PURCHASED MEATS)
		20151	POULTRY AND SMALL GAME (KILLED & DRESSED IN THIS ESTABLISHMENT)
20210	849342	20210	BUTTER (CHURNED IN THIS PLANT)
		20930	MARGARINE
20220	394449	20221	NATURAL CHEESE
20230	623931	20231	DRIED MILK, DRIED BUTTERMILK, ETC.
		20232	CANNED MILK
		20233	BULK EVAPORATED AND CONDENSED MILK (WHOLE MILK, SKIM MILK, BUTTERMILK, AND WHEY)
20240	641840	20234	ICE CREAM MIX AND ICE MILK MIX
		20240	ICE CREAM AND ICES
20250	231759	20252	PROCESS CHEESE (MADE FROM PURCHASED NATURAL CHEESE)
20251	50004	20251	SPECIAL DAIRY PRODUCTS (MALTED MILK POWDER, ETC.)
20260	2377858	20262	BOTTLED FRESH MILK AND CREAM
		20263	BULK FRESH MILK AND CREAM
20310	223246	20311	CANNED FISH AND OTHER SEA FOOD
20331	417139	20331	CANNED FRUITS
20332	782861	20332	CANNED VEGETABLES AND SPECIALTIES
20334	180192	20334	CANNED FRUIT JUICES

* The value of shipments is in 1,000's.

** 999999 indicates that Census values were not available and the CPR sample total was used as the population total.

NEW SIC	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
20335	59528	20335	CANNED VEGETABLE JUICES
20336	118839	20336	CANNED BABY FOODS
20337	265659	20337	CANNED SOUPS AND POULTRY PRODUCTS
20338	155773	20338	JAMS, JELLIES, AND PRESERVES
20339	16457	20339	OTHER CANNED OR PRESERVED PRODUCTS
20340	109703	20341	DRIED FRUITS
		20342	DEHYDRATED VEGETABLES AND SOUP MIX
20351	109418	20351	CATSUP AND OTHER TOMATO SAUCES
20352	114441	20352	PICKLES AND OTHER PICKLED PRODUCTS
20353	28284	20353	MUSTARD AND OTHER MEAT SAUCES, EXCEPT TOMATO
20354	175060	20354	SALAD DRESSINGS-INCLUDING MAYONNAISE
20371	62180	20371	FROZEN PACKAGED FISH
20372	141616	20372	FROZEN FRUITS AND JUICES
20373	111453	20373	FROZEN VEGETABLES
20410	1712224	20411	WHEAT FLOUR-PLAIN
		20412	WHEAT BRAN, SHORTS, AND MIDDLINGS.
		20413	CORN MEAL
		20414	OTHER GRAIN, MILL PRODUCTS, INCLUDE RYE FLOUR, HOMINY GRITS, ETC.
		20415	BLENDED AND PREPARED FLOUR MADE IN FLOUR MILLS
20420	2263172	20421	PREPARED ANIMAL FEEDS, EXCLUDE DOG AND CAT FOOD
		20422	DOG AND CAT FOOD (PREPARED)
		20423	ALFALFA MEAL AND MINERAL MIXTURES
20430	254383	20430	CEREAL BREAKFAST FOODS
20440	241557	20441	MILLED RICE AND BYPRODUCTS
20510	2685091	20510	BREAD, ROLLS, CAKES, PIES AND PASTRIES
20520	604641	20520	BISCUITS, CRACKERS AND PRETZELS
20610	1112462	20611	RAW CANE SUGAR

NEW SIC	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
		20612	OTHER CANE SUGAR MILL PRODUCTS AND BYPRODUCTS
		20621	REFINED CANE SUGAR (EXCLUDE EXCISE TAXES)
		20622	OTHER CANE SUGAR REFINERY PRODUCTS AND BYPRODUCTS
		20631	REFINED BEET SUGAR (EXCLUDED EXCISE TAXES)
		20632	OTHER BEET SUGAR FACTORY PRODUCTS AND BYPRODUCTS
20710	880445	20711	CONFECTIONERY, EXCEPT SOLID CHOCOLATE BARS
		20715	SALTED, ROASTED, AND BLANCHED NUTS
		20718	PEANUTS AND PEANUT HULLS
20720	364770	20721	CHOCOLATE COATINGS
		20722	REPORT TOTAL OF FOLLOWING: CHOCOLATE, COCOA, SOLID CHOCOLATE BARS
20730	132172	20730	CHEWING GUM AND CHEWING-GUM BASE
20810	830590	20810	BOTTLED SOFT DRINKS AND CARBONATED WATERS
20820	1469481	20821	BEER, ALE, AND OTHER MALT LIQUORS, EXCLUDE EXCISE TAXES
		20822	BREWERS GRAINS AND OTHER BREWERY PRODUCTS
20830	206759	20831	MALT
		20832	MALT BYPRODUCTS
20840	170900	20841	REPORT THE TOTAL OF THE FOLLOWING: WINES, BRANDY
20850	971751	20851	DISTILLED LIQUORS, EXCEPT BRANDY (REPORT RAW VALUE OR COST OF PRODUCTION)
		20852	DISTILLERS GRAINS
		20853	BOTTLED LIQUORS (SHIPPED FROM RECTIFYING PLANTS OR TAX-PAID BOTTLING HOUSES)-EXCLUDE EXCISE TAXES
20900	223145	20901	EGGS (LIQUID, FROZEN AND DRIED)
20910	81280	20911	BAKING POWDER
		20912	YEAST
20920	598177	20921	SHORTENING AND SALAD OILS
20940	405107	20941	WET CORN-MILLING PRODUCTS
20950	341931	20951	FLAVORING, EXTRACTS, EMULSIONS AND OTHER LIQUID FLAVORS: EXCLUDE BEVERAGE BASES (20952) AND SYNTHETIC FLAVORING MATERIAL
		20952	BEVERAGE BASES
		20953	FLAVORING SIRUPS AND CONCENTRATES
20960	16737	20960	VINEGAR AND CIDER
20970	150973	20970	MANUFACTURED ICE

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NEW SIC	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
20980	118586	20980	MACARONI AND NOODLE PRODUCTS (NOT CANNED)
20991	98721	20991	DESSERTS, READY-TO-MIX, EXCEPT ICE-CREAM MIX (CODE 20234)
20992	116314	20992	POTATO CHIPS
20993	83872	20993	SWEETENING SIRUP AND MOLASSES
20994	490543	20994	FOOD PREPARATIONS NOT ELSEWHERE CLASSIFIED
20996	1263295	20996	ROASTED COFFEE
21110	1326351	21110	CIGARETTES, EXCLUDE EXCISE TAXES
21210	314409	21210	CIGARS, EXCLUDE EXCISE TAXES
21310	174142	21310	TOBACCO: CHEWING AND SMOKING AND SNUFF, EXCLUDE EXCISE TAXES
21410	1024505	21410	TOBACCO, STEMMED AND/OR REDRIED
		21510	TOBACCO, PACKED ONLY
22110	105821	22110	NOILS AND WASTE -- WOOL TOPS
22120	1293519	22120	YARNS SPUN ON WOOLEN AND WORSTED SYSTEMS, EXCLUDE CARPET YARN (22712)
		22220	THROWN YARNS
		22240	YARNS SPUN ON COTTON SYSTEM
22130	5922747	22130	WOOLEN AND WORSTED FABRICS--OVER 12 INCHES IN WIDTH
		22330	COTTON FABRICS, INCLUDE ALL COTTON, RAYON, NYLON TIRE CORD AND TIRE FABRIC OVER 12 INCHES IN WIDTH
		22340	RAYON AND RELATED FABRICS
22230	206786	22231	THREAD FOR USE IN THE HOME
		22232	THREAD FOR INDUSTRIAL USE
22410	276453	22411	ELASTIC COTTON FABRICS
		22413	COTTON NARROW FABRICS (51% OR MORE COTTON)
		22414	RAYON NARROW FABRICS (51% OR MORE RAYON)
		22415	NARROW FABRICS OTHER THAN COTTON OR RAYON
		22416	COVERED RUBBER THREAD
22510	652587	22511	FINISHED FULL-FASHIONED HOSIERY--KNIT IN THIS PLANT
		22513	FULL-FASHIONED HOSIERY SHIPPED IN THE GREIGE
22520	383705	22523	MENS FINISHED SEAMLESS HOSIERY, INCLUDE BUNDLE GOODS AND ATHLETIC AND CREW SOCKS
		22524	SEAMLESS HOSIERY SHIPPED IN THE GREIGE
		22529	FINISHED SEAMLESS HOSIERY, INCLUDING ANKLETS, NOT ELSEWHERE CLASSIFIED

NEW SIC	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
22530	444181	22531	KNIT OUTERWEAR MADE IN KNITTING MILLS
22540	656756	22541	KNIT UNDERWEAR AND NIGHTWEAR MADE IN KNITTING MILLS
22550	100015	22551	KNIT GLOVES AND MITTENS MADE IN KNITTING MILLS
		23811	DRESS AND SEMI-DRESS GLOVES AND MITTENS, FABRIC AND COMBINATION FABRIC AND, LEATHER, FROM FABRIC MADE ELSEWHERE
22560	328702	22561	KNIT FABRICS
22590	12123	22590	OTHER KNITTING MILL PRODUCTS NOT ELSEWHERE SPECIFIED
22710	667287	22711	WOOL CARPETS AND RUGS
		22730	CARPETS, RUGS AND MATS FROM FIBER, EXCEPT WOOL
22740	241818	22741	LINOLEUM
		22742	ASPHALTED FELT-BASE FLOOR AND WALL COVERING
		22743	PLASTIC FLOOR COVERING
22810	352488	22810	FUR-FELT HATS AND HAT BODIES
		23510	MILLINERY (TRIMMED HATS)
22830	21882	22830	STRAW HATS
22910	96319	22911	FELT GOODS EXCEPT WOVEN FELTS (CODE 22130) AND HATS
22920	58757	22920	LACE GOODS (LEVERS LACES, BOBBINET, NATTINGHAM LACE, BARMEN LACE, ETC.)
22930	128548	22930	PADDINGS AND UPHOLSTERY FILLING
22940	128548	22940	PROCESSED WASTE AND RECOVERED FIBERS
22950	246212	22951	PYROXYLIN-COATED FABRICS
		22952	RESIN-COATED FABRICS
		22953	UNSUPPORTED FILMS
		22954	OTHER IMPREGNATED AND COATED FABRICS (OILCLOTH, ETC.)
22970	55938	22971	LINEN GOODS
		22972	JUTE GOODS EXCEPT JUTE FELT (22911) AND JUTE CORDAGE AND TWINE (22982)
22980	189788	22981	HARD FIBER CORDAGE AND TWINE
		22982	SOFT FIBER CORDAGE AND TWINE EXCEPT COTTON
		22983	COTTON CORDAGE AND TWINE
22990	60037	22990	OTHER TEXTILE GOODS NOT ELSEWHERE SPECIFIED
		22994	OTHER TEXTILE, N.E.C.
23110	1021469	23111	SUITS, COATS AND OVERCOATS; MENS AND BOYS

NEW SIC	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
23210	573858	23211	SHIRTS EXCEPT WORK SHIRTS (23280) AND NIGHTWEAR MADE OF WOVEN FABRIC -- MENS AND BOYS
23220	202541	23221	KNIT UNDERWEAR AND NIGHTWEAR MADE FROM FABRIC KNIT ELSEWHERE AND WOVEN UNDERWEAR--MENS AND BOYS
23230	107876	23230	NECKWEAR - MENS AND BOYS
23250	3524880	23250	CLOTH HATS AND CAPS - MENS AND BOYS
23270	294458	23270	SEPARATE TROUSERS - MENS AND BOYS
23280	110893	23280	WORK SHIRTS
23290	847346	23291	MENS AND BOYS WORK, SPORT, AND OTHER APPAREL NOT LISTED ABOVE (INCLUDE KNIT SHIRTS, SWEATERS, BATHINGSUITS, AND TRUNKS MADE FROM FABRIC KNIT ELSEWHERE; WORK PANTS; OVERALLS; ONE-PIECE WORK SUITS; JACKETS, AND OTHER HEAVY OUTERWEAR; OILED FABRIC GARMENTS; WASHABLE SERVICE APPAREL; BOYS' WASH SUITS; ETC.)
23310	257737	23310	BLOUSES AND WAISTS - WOMENS AND MISSES
23340	359741	23341	DRESSES SOLD AT A DOZEN-PRICE APRONS, UNIFORMS AND OTHER WASHABLE SERVICE APPAREL - WOMENS AND MISSES
23350	815510	23351	SUITS, JACKETS AND COATS EXCEPT FUR COATS--WOMENS AND MISSES
23360	150028	23364	SKIRTS - WOMENS AND MISSES
23390	121094	23391	WOMENS AND MISSES OUTERWEAR NOT LISTED ABOVE (INCLUDE KNIT JACKETS, SWEATERS, SHIRTS, PULLOVERS, AND BATHING SUITS MADE FROM FABRIC KNIT ELSEWHERE; OVERALLS AND COVERALLS; PLAYSUITS AND SHORT; SLACKS AND SLACK SUITS; WOVEN BATHING SUITS; ETC.)
23410	377148	23411	WOMENS, CHILDRENS AND INFANTS WOVEN UNDEWEAR AND NIGHTWEAR AND KNIT UNDERWEAR AND NIGHTWEAR MADE FROM FABRIC KNIT ELSEWHERE, INCLUDING NEGLIGEES AND BEDJACKETS
23420	331165	23422	CORSETS, GIRDLES, ROLL-ONS AND GARTER BELTS
23690	254210	23691	CHILDREN AND INFANTS OUTERWEAR NOT LISTED ABOVE (INCLUDING KNIT SHIRTS, SWEATERS, JERSEYS, AND BATHING SUITS MADE FROM FABRIC KNIT ELSEWHERE; BUNTINGS; CREEPERS, ROMPERS, AND BABY BOYS' WASH SUITS; OVERALLS AND COVERALLS; SUNSUITS AND SHORTS; WOVEN BATHING SUITS; ETC.
23820	68761	23821	WORK GLOVES AND MITTENS, FABRIC AND COMBINATION FABRIC-AND-LEATHER, FROM FABRIC MADE ELSEWHERE

NEW SIC	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
23830	15886	23830	SUSPENDERS, GARTERS, HOSE SUPPORTERS AND RELATED PRODUCTS
23840	100722	23841	ROBES AND DRESSING GOWNS
		23842	BREAKFAST COATS, BRUNCH COATS, HOUSE COATS AND LOUNGING PAJAMAS
23850	11940	23850	REPORT THE TOTAL OF THE FOLLOWING CATAGORIES: RAINWEAR AND OTHER FINISHED WATERPROOF OUTER GARMENTS MADE FROM PURCHASED RUBBERIZED FABRICS; WATERPROOF AND WATER-REPELLENT RAINCOATS, AND OTHER WATERPROOF OUTER GARMENTS. (INCLUDE 23111 AND 23291).
23860	42309	23860	LEATHER AND SHEEP-LINED CLOTHING
23880	42850	23880	HANDKERCHIEFS
23910	135163	23910	CURTAINS AND DRAPERIES - EXCEPT LACE (22920)
23920	740158	23921	BEDSPREADS AND BED SETS
		23922	SHEETS AND PILLOWCASES
		23923	TOWELS AND WASHCLOTHS
		23929	OTHER HOUSE FURNISHINGS (SHOWER BATH CURTAINS, TABLECLOTHS, NAPKINS, COMFORTERS, ETC.)
23930	313072	23930	TEXTILE BAGS EXCEPT LAUNDRY AND WARDROBE BAGS (23929)
23940	102916	23940	CANVAS PRODUCTS
23950	29240	23950	PLEATING, STITCHING AND TUCKING FOR THE TRADE
23960	181793	23960	TRIMMINGS, STAMPED ART GOODS AND ART NEEDLEWORK
23990	191348	23990	FABRICATED TEXTILE PRODUCTS N.E.C.
24110	618076	24110	LOGS, BOLTS, PULPWOOD, ETC.
24210	3177535	24210	ROUGH LUMBER AND SAWED TIES
		24211	HARDWOOD FURNITURE DIMENSION
		24212	HARDWOOD DIMENSION OTHER THAN FURNITURE
		24213	SOFTWOOD CUT-STOCK (PREDIMENSIONED TO SPECIFIC INDUSTRIAL USES IN FURTHER FABRICATION, I.E., DOOR, WINDOW, FURNITURE, ETC., STOCK)
		24214	DRESSED LUMBER EXCLUDING FLOORING
		24215	SOFTWOOD FLOORING
		24216	HARDWOOD FLOORING
		24219	LATH; PICKETS
		24290	SPECIAL PRODUCTS SAWMILLS N.E.C. (FUELWOOD, WOOD CHIPS, PRESTO-LOGS)
24220	91089	24221	HARDWOOD VENEER
		24222	SOFTWOOD VENEER
24230	32804	24230	SHINGLES AND SHAKES

NEW SIC	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
24240	44194	24240	COOPERAGE STOCK (STAVES, HEADING AND HOOPS FOR TIGHT OR SLACK COOPERAGE)
24250	9117	24250	EXCELSIOR PRODUCTS
24310	811861	24311	SASH OTHER THAN STORM SASH
		24312	WINDOW AND DOOR FRAMES
		24313	DOORS--GENERAL CONSTRUCTION INTERIIOR AND EXTERIOR
		24314	CABINET WORK (TO BE BUILT-IN - KITCHEN CABINETS, BROOM CLOSETS, MEDICINE CABINETS, VEGETABLE BINS), MANTELS, CHINA CASES, ETC.
		24315	STAIR WORK, INCLUDING BALUSTERS, BRACKETS, CROOKS, NEWELS, RAILS, TREADS, RISERS, STAIRS, ETC.
		24316	EXTERIOR MILLWORK: PORCH COLUMNS, RAILS AND NEWELS, TRELLISES, OUTSIDE BLINDS
		24317	MILLWORK PRODUCTS NOT ELSEWHERE CLASSIFIED
24320	443336	24321	HARDWOOD PLYWOOD
		24322	SOFTWOOD PLYWOOD - INTERIOR GRADE
		24323	SOFTWOOD PLYWOOD - EXTERIOR GRADE
		24324	PLYWOOD-INCLUDE FANCY AND FIGURED SOFTWOOD PLYWOOD AND CONTAINER SOFTWOOD PLYWOOD NOT ELSEWHERE CLASSIFIED
		24325	NONWOOD FACE PLYWOOD
24330	154045	24332	PREFABRICATED DWELLINGS
24410	31947	24410	FRUIT AND VEGETABLE BASKETS
24430	8733	24430	CIGAR BOXES -- WOODEN AND PART WOODEN
24440	362987	24442	WIREBOUND BOXES FOR INDUSTRIAL AND OTHER USES
		24443	NON-WIREWOUND BOXES FOR FRUITS AND VEGETABLES
		24444	NON-WIREBOUND BOXES FOR INDUSTRIAL AND OTHER USES
		24445	COMBINATION WOOD AND FIBER BOXES
		24448	BOX SHOOK: FRUIT, VEGETABLE, INDUSTRIAL (MADE FROM PURCHASED LUMBER)
24450	98833	24451	SLACK COOPERAGE (BARRELS, KEGS ETC.)
		24453	TIGHT COOPERAGE (BARRELS, KEGS ETC.)
24910	293113	24911	WOOD OWNED AND TREATED FOR SALE
24920	11177	24920	LASTS AND RELATED PRODUCTS - LASTS FOR BOOTS AND SHOES - LAST SOLE PATTERNS - SHOE TREES AND STRETCHERS
24991	35791	24991	HANDLES, WOOD (HAND-TOOL HANDLES AND OTHER HANDLES)
24992	56432	24992	FURNITURE PARTS, TEXTILE MACHINERY TURNINGS AND VEHICLE STOCK
24993	17272	24993	LADDERS, WOOD

NEW SIC	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
24999	198209	24999	UNKNOWN
25110	2072999	25110	WOOD HOUSEHOLD FURNITURE EXCEPT UPHOLSTERED, INCLUDE LIVING ROOM, DINING, BEDROOM (EXCLUDE MATTRESSES AND BEDSPRING
		25120	HOUSEHOLD FURNITURE, UPHOLSTERED - INCLUDE LIVING ROOM SUITES, SOFAS, DAVENPORTS, SETTEES, LOVE SEATS, CHAIRS, ROCKERS, OTTOMANS, ETC.
		25140	METAL HOUSEHOLD FURNITURE, EXCEPT UPHOLSTERED - INCLUDE LIVING ROOM, DINING ROOM, BEDROOM, KITCHEN INFANTS, CHILDRENS, PORCH AND LAWN FURNITURE, ETC.
25150	300867	25150	MATTRESSES AND BEDSPRINGS--INCLUDE HOLLYWOOD BEDS-BED SPRINGS (BOX, COIL AND FLAT)
25210	209166	25212	DESKS - WOODEN OFFICE FURNITURE
		25213	CABINETS AND CASES - WOODEN OFFICE FURNITURE
		25219	OFFICE FURNITURE - INCLUDE TABLES AND STANDS ETC., NOT ELSEWHERE CLASSIFIED - WOODEN OFFICE FURNITURE
		25221	CHAIRS, STOOLS, COUCHES ETC. - METAL OFFICE FURNITURE
		25222	DESKS - METAL OFFICE FURNITURE
		25223	CABINETS AND CASES - METAL OFFICE FURNITURE
		25229	METAL OFFICE FURNITURE N.E.C.
25310	9090	25310	PUBLIC-BUILDING FURNITURE - SCHOOLS, CHURCHES, THEATERS, AUDITORIUMS (DESKS, PEWS, GANGED CHAIRS, SEATS FOR PUBLIC CONVEYANCES
25320	58681	25320	REPORT THE TOTAL OF THE FOLLOWING CATEGORIES: PROFESSIONAL FURNITURE - INCLUDE BEDS, CABINETS, DESKS, CASES, ETC., FOR USE IN HOSPITALS, LABORATORIES, DOCTORS' AND DENTISTS' OFFICES; BEAUTY AND BARBER SHOP FURNITURE AND EQUIPMENT. DOCTORS-DENTISTS OFFICICES; BEAUTY AND BARBER SHOP FURNITURE AND EQUIPMENT
25410	200703	25411	PARTITIONS, SHELVING AND LOCKERS
		25412	CASES, CABINETS, COUNTERS AND OTHER FIXTURES
25610	151755	25611	WOOD SCREEN DOORS AND WINDOW SCREENS
		25612	METAL SCREEN DOORS AND WINDOW SCREENS
		25613	WOOD STORM SASH AND WOOD COMBINATION SCREEN AND STORM SASH AND DOORS
		25614	METAL STORM SASH AND METAL COMBINATION SCREEN AND STORM SASH AND DOORS
25620	59138	25620	WINDOW SHADES AND ACCESSORIES
25910	33087	25910	RESTAURANT FURNITURE - INCLUDE CHAIRS AND STOOLS, TABLES, BOOTHS, ETC.
25990	12215	25990	FURNITURE AND FIXTURES, N.E.C.
26110	1027476	26111	BLEACHED SULPHITE WOOD PULP
		26112	UNBLEACHED SULPHITE WOOD PULP
		26113	BLEACHED SULPHATE WOOD PULP, INCLUDE SEMIBLEACHED
		26114	UNBLEACHED SULPHATE WOOD PULP

NEW SIC	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
		26115	SODA WOOD PULP
		26116	GROUND-WOOD PULP
		26117	MISCELLANEOUS WOOD PULP - INCLUDE SEMICHEMICAL, CHEMFIBER, DEFIBRATED, EXPLODED ASPLUND FIBER AND SCREENINGS
		26118	PULP OTHER THAN WOOD - INCLUDE ONLY PULP MADE FOR SALE, - MADE OF COTTON, COTTON LINTERS, RA STRAW, AND SIMILAR FIBERS
		26119	MISCELLANEOUS PULP PRODUCTS-INCLUDE TALL OIL (CRUDE AND REFINED) ROAD-BINDING MATERIAL ETC.
26120	2924927	26120	NEWSPRINT AND GROUND-WOOD PAPER
		26121	BOOK AND FINE PAPER
		26122	COARSE PAPER
		26123	SPECIAL INDUSTRIAL AND ABSORBENT PAPER
		26124	SANITARY AND TISSUE PAPER
		26125	CONTAINER BOARD
		26126	BENDING BOARD
		26127	NONBENDING BOARD
		26129	OTHER PAPER AND PAPERBOARD MILL PRODUCTS - INCLUDE TUDE STOCK, MATCH SPLINT STOCK LINER FOR GYPSUM AND PLASTERBOARD, STOCK FOR LAMINATED WALLBOARD, ETC.
26130	275397	26131	BUILDING BOARD - INCLUDE SHEATHING BOARD, INSULATING AND NON-INSULATING WALLBOARD, ETC.
		26132	BUILDING PAPER AND BUILDING BOARD MILL PRODUCTS - INCLUDING FLEXIBLE FIBER INSULATION, ETC. N.E.C.
26411	85672	26411	COATED PAPER FOR PRINTING (OFF PAPER MACHINE)
26412	179660	26412	WAXED AND WAX LAMINATED PAPER
26413	57414	26413	GLAZED AND FANCY PAPERS - INCLUDE CASEIN AND SIMILARLY COATED PAPERS, SPECIAL METALLIC AND PYROXYL IN COATED EMBOSSED LEATHERETTE, PLAIN AND COATED
26414	87134	26414	GUMMED PAPER - INCLUDE ROLLS, FLATS AND CLOTH BACK PAPER
26415	43307	26415	OTHER COATED PAPER N.E.C.
26510	145303	26510	ENVELOPES, ALL TYPES - EXCEPT BOXED STATIONERY (26991)
26610	487422	26611	GROCERY AND VARIETY BAGS
		26612	SPECIALTY PAPER BAGS (GLASSINE, CELLOPHANE, GREASE, PROOFED, WAXED AND FOIL-BACKED)
		26613	PAPER BAGS - INCLUDE WARDROBE, MOTHPROOF, SHOPPING AND TWISTED PAPER N.E.C.
		26614	SHIPPING SACKS, SINGLE, DOUBLE AND MULTIWALL
26710	1640418	26711	SHIPPING CONTAINERS, SOLID FIBER AND CORRUGATED
		26712	FOLDING BOXES AND CARTONS
		26713	SET-UP BOXES
		26714	PAPERBOARD BOXES - INCLUDE VULCANIZED, TOTE BOXES, ETC. N.E.C.
26740	97946	26740	FIBER CANS, TUBES, DRUMS, ETC.

NEW SIC	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
26910	166117	26911	FILING ACCESSORIES (FILE FOLDERS, GUIDE CARDS-ETC.)
		26912	CARDS, DIE-CUT AND DESIGNED (NOT PRINTED)
		26913	MISCELLANEOUS DIE-CUT PRODUCTS N.E.C.
26930	41815	26930	WALLPAPER - INCLUDE DESIGNING, PRINTING AND EMBOSSING
26940	31622	26940	PULP GOODS - PRESSED AND MOLDED, EXCEPT STATUARY (32981)
26991	72480	26991	STATIONERY-TABLETS AND RELATED PRODUCTS
26992	187093	26992	WRAPPING PRODUCTS - EXCEPT COATED, OILED AND WAXED, INCLUDE CORRUGATED PAPER IN ROLLS, WATER-PROOF CREPED AND LINED
26993	231232	26993	SANITARY FOOD CONTAINERS - INCLUDE MILK BOTTLES, CUPS, ICE-CREAM PAILS, ETC.
26994	293584	26994	SANITARY HEALTH PRODUCTS - INCLUDE TOILET PAPER, DIAPERS, FACIAL TISSUES, TABLE NAPKINS, TOILET SEAT COVERS, ETC.
26996	311951	26996	CONVERTED PAPER AND BOARD PRODUCTS - INCLUDE GAMES, TOYS, NOVELTIES, PLAYING CARDS, LAMINATED WALL BOARD, ETC., N.E.C.
27110	2375109	27111	RECEIPTS FROM SUBSCRIPTIONS AND SALES
		27112	RECEIPTS FROM ADVERTISING (NET AFTER DEDUCTING AD AGENCY COMMISSION AND CASH DISCOUNT)
27210	1118546	27211	RECEIPTS FROM SUBSCRIPTIONS AND SALES
		27212	RECEIPTS FROM ADVERTISING (NET AFTER DEDUCTING AD AGENCY COMMISION AND CASH DISCOUNT)
27310	619369	27311	BOOKS AND PAMPHLETS (REPORT TOTAL SALES OF ALL ORIGINAL AND REPRINT BOOKS AND PAMPHLETS PUBLISHED BY YOU)
27320	131792	27321	BOOK AND PAMPHLET PRINTING AND COMPLETE BOOK MANUFACTURING (REPORT TOTAL RECEIPTS FROM PRINTING AND LITHOGRAPHING BOOKS AND PAMPHLETS, INCLUDING COMPLETE BOOK MANUFACTURING)
27410	169617	27410	MISCELLANEOUS PUBLISHING (INCLUDE RECEIPTS FROM PUBLISHING SUCH PRODUCTS AS MAPS, ATLASES, SHEET MUSIC, DIRECTORIES, AND OTHER MISCELLANEOUS PUBLICATIONS NOT LISTED ABOVE)
27510	2299235	27511	LETTERPRESS AND GRAVURE PRINTING-INCLUDE RECEIPTS FOR GENERAL COMMERCIAL AND SPECIALIZED PRINTING EXCEPT BOOK PRINTING (27321) AND PRINTING GREETING CARDS (27711)
		27611	LITHOGRAPHING EXCEPT RECEIPTS FROM LITOGRAPHING BOOKS AND PAMPHLETS (27321) AND GREETING CARDS (27711)
27710	126303	27711	GREETING CARDS - INCLUDE SALES OF GREETING CARDS AS WELL AS RECEIPTS FROM PRINTING OR LITHOGRAPHING GREETING CARDS
27810	113109	27811	BOOKBINDING - INCLUDE RECEIPTS FOR EDITION, TRADE, JOB, LIBRARY BOOKBINDING
27820	82539	27821	BLANKBOOKS AND PAPER RULING - INCLUDE SALES BOOKS, ACCOUNT BOOKS, COMPOSITION BOOKS, ALBUMS, CHECK BOOKS, INVENTORY AND SIMILAR BOOKS, AND RECEIPTS FROM PAPER RULING

NEW SIC	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
27830	59933	27830	LOOSE-LEAF BINDERS AND DEVICES - INCLUDE FORMS, FILLERS AND BINDERS
27910	102934	27910	TYPESETTING-MACHINE AND HAND - INCLUDE ADVERTISING TYPOGRAPHY
27920	59733	27921	ENGRAVING (STEEL, COPPERPLATE, ETC.) AND PLATE PRINTING
27930	146464	27930	PHOTOENGRAVING
27940	70994	27941	ELECTROTYPING AND STEREOTYPING
28120	260000	28120	CHLORINE AND ALKALIES
28190	1092229	28190	REPORT THE TOTAL OF SULPHURIC ACID, INDUSTRIAL INORGANIC CHEMICALS N.E.C.
28210	78247	28210	CYCLIC (COAL TAR) CRUDES
28230	894200	28231	CELLULOSE PLASTICS MATERIALS
		28232	SYNTHETIC RESINS-EXCLUDE RESINS FOR PROTECTIVE COATINGS (28234)
		28233	VULCANIZED FIBER
		28234	PLASTICS AND RESIN MATERIALS OTHER THAN SPEICIFIED ABOVE - INCLUDE PROTEIN BASE PLASTICS, RESINS FOR PROTECTIVE COATINGS AND CELLOPHANE
28240	301454	28240	SYNTHETIC (CHEMICAL) RUBBERS)
28250	1098524	28251	RAYON YARN, ACETATE PROCESS
		28252	RAYON YARN, VISCOSE AND CUPRAMMONIUM PROCESSES
		28254	SYNTHETIC FIBERS OTHER THAN RAYON
		28255	CELLULOSE PRODUCTS OTHER THAN RAYON (SAUSAGE CASINGS, CAPS, BANDS, SPONGES) - TRANSPARENT WRAPPING MATERIALS ARE INCLUDED IN PLASTICS MATERIAL ABOVE
28260	134752	28260	EXPLOSIVES - INCLUDE SAFETY FUSES AND BLASTING AND DETONATING CAPS
28291	174592	28291	SYNTHETIC ORGANIC CHEMICALS N.E.C.
28292	77908	28292	ETHYL ALCOHOL (INDUSTRIAL) - EXCLUDE SYNTHETIC ALCOHOL (28291)
28293	49388	28293	ORGANIC CHEM. (NON-SYNTHETIC)-EXCLUDE 28610 28620 28920 28870
28294	52936	28294	INTERMEDIATES, DYES, COLOR LAKES AND TONERS
28310	69171	28310	BIOLOGICAL PRODUCTS
28320	10225	28320	BOTANICAL PRODUCTS (DERIVED FROM GRADING, GRINDING AND MILLING BOTANICAL DRUGS AND HERBS) EXCLUDE PREPARATIONS (28341, 28342, 28343, AND 28344)
28331	327313	28331	DRUGS OF ANIMAL ORIGIN - UNCOMPOUNDED (BULK)

NEW SIC	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
		28332	INORGANIC AND ORGANIC MEDICINALS (BULK) INCLUDE ANTIBIOTICS, ALKALOIDS, BULK VITAMINS
28341	1196987	28341	ETHICAL PREPARATIONS FOR HUMAN USE (PRODUCTS ADVERTISED OR OTHERWISE PROMOTED TO OR PRESCRIBED BY THE MEDICAL PROFESSION)
28342	24394	28342	ETHICAL PREPARATIONS FOR VETERINARY USE (PRODUCTS ADVERTISED OR OTHERWISE PROMOTED TO OR PRESCRIBED BY THE MEDICAL PROFESSION)
28344	28513	28344	PROPRIETARY PREPARATIONS FOR VETERINARY USE (PRODUCTS ADVERTISED OR OTHERWISE PROMOTED TO THE GENERAL PUBLIC)
28413	69714	28413	GLYCERIN
28415	619717	28415	SOAPS, EXCEPT SPECIALTY SOAPS - INCLUDE CLEANSERS CONTAINING ABRASIVES AND WASHING POWDERS
28416	35939	28416	SPECIALTY SOAPS - INCLUDE MECHANICS HAND SOAPS, MEDICATED SOAPS, SHAVING SOAPS
28421	19556	28421	SYNTHETIC ORGANIC DETERGENTS - INCLUDE COMBINATIONS OF SYSTHETIC ORGANIC DETERGENTS WITH SOAP OR WITH ALKALINE DETERGENTS
28422	273657	28422	ALKALINE DETERGENTS
28423	64046	28423	SPECIALTY DETERGENTS - INCLUDE WINDOW GLASS CLEANERS, WALL PAPER, WINDOW SHADE, PAINT CLEANERS ETC.
28424	159608	28424	POLISHING PREPARATIONS AND RELATED PRODUCTS - INCLUDE BLACKINGS, STAINS, DRESSINGS, POLISHING CLOTHS, ETC.
28430	55381	28430	SULFONATE OILS AND FATS AND ASSISTANTS
28510	1289930	28511 28512 28513	OIL AND WATER PAINTS AND STAINS VARNISHES, LACQUERS, ENAMELS, JAPANS, DOPES AND THINNERS - EXCLUDE TURPENTINE (28620 28630) PAINT PRODUCT N.E.C. (INCLUDE VINYL COATINGS-PIGMENT DISPERSONS-BLEACHED SHELLAC ETC.)
28520	346892	28520	INORGANIC COLOR PIGMENTS
28530	36046	28530	WHITING, PUTTY, WOOD FILLERS, AND ALLIED PAINT PRODUCTS
28610	13882	28610	HARDWOOD DISTILLATION PRODUCTS
28620	61237	28620	SOFTWOOD DISTILLATION PRODUCTS
28630	29277	28630	GUM NAVAL STORE
28650	15201	28650	REPORT TOTAL OF - NATURAL DYEING MATERIALS; NATURAL TANNING MATERIALS
28710	658776	28711 28712	MIXED FERTILIZERS-COMPLETE AND INCOMPLETE FERTILIZER MATERIALS OF ORGANIC ORIGIN

NEW SIC	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
		28713	SUPERPHOSPHATE
28810	465669	28810	COTTON OIL MILL PRODUCTS
28820	1116515	28820	LINSEED OIL MILL PRODUCTS
		28830	SOYBEAN OIL MILL PRODUCTS
		28840	VEGETABLE OIL MILL PRODUCTS, OTHER THAN SPECIFIED ABOVE - INCLUDE PEANUT, COCONUT, CASTOR, HYDROGENATED VEGETABLE
		28850	MARINE ANIMAL OIL MILL PRODUCTS - EXCLUDE VITAMIN OILS (28332)
28860	365944	28861	GREASE AND TALLOW
		28862	FEED AND FERTILIZER BYPRODUCTS - INCLUDE TANKAGE, MEAT SCRAPS AND BONEMEAL
28870	51628	28870	FATTY ACIDS
28890	28447	28891	RAW AND ACIDULATED SOAP STOCK AND FOOTS (ALL TYPES)
		28892	STEARIN AND OTHER ANIMAL OIL MILL PRODUCTS OTHER THAN FATTY ACIDS
28910	145868	28910	PRINTING INK
28920	26550	28920	ESSENTIAL OILS
28931	50600	28931	PERFUMES-TOILET WATERS AND COLOGNES--INCLUDE COMPOUND PERFUME BASES AND CONCRETES
28932	128707	28932	HAIR PREPARATIONS - INCLUDE SHAMPOOS, TONICS, PERMANENT WAVE SOLUTIONS AND KITS
28933	87330	28933	DENTIFRICES
28934	263741	28934	COSMETICS AND TOILET PREPARATIONS - EXCLUDE PERFUMES, TOILET WATERS, COLOGNES, HAIR PREPARATIONS AND DENTIFRICES
28941	55953	28941	GLUE (VEGETABLE AND ANIMAL ONLY)
28942	32300	28942	GELATIN - EXCLUDE READY-TO-MIX DESSERTS (20991)
28950	89385	28951	CARBON BLACK - CHANNEL (CONTACT) BLACK AND FURNACE BLACK INCLUDING THERMAL
		28952	BLACKS-LAMP AND BONE ONLY
28960	142410	28960	COMPRESSED AND LIQUEFIED GASES (ACETYLENE-CARBON DIOXIDE-ELEMENTAL ETC.)
28970	185468	28970	AGRICULTURAL INSECTICIDE AND FUNGICIDE PREPARATIONS.
28980	57313	28980	SALT (SODIUM CHLORIDE--EDIBLE)
28991	41780	28991	HOUSEHOLD INSECTICIDES AND REPELLENTS - INCLUDE LIVESTOCK SPRAYS, ANIMAL DIPS, RODENT POISONS AND MOTH CONTROL AGENTS
28992	20104	28992	WEED KILLERS

NEW SIC	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
28993	385166	28993	REPORT TOTAL OF THE FOLLOWING CATEGORIES: ADHESIVES OR CEMENT (IF RUBBER OR ASBESTOS, SPECIFY); STAMP PAD INKS AND WRITING INKS; SIZES; CHEMICAL SPECIALTIES, AUTOMOTIVE CHEMICALS, NON-PERSONAL DEODORANTS, DISINFECTANTS, CHEMICAL FOUNDRY SUPPLIES, METAL TREATING COMPOUNDS, ROSIN AND OTHER SIZES, FRIT, ETC.; CHEMICAL SPECIALTIES, N.E.C. - INCLUDE AUTOMOTIVE CHEMICAL FOUNDRY SUPPLIES, CATALYTIC AGENTS - EXCLUDE THOSE PRODUCTS REPORTED AS OTHER FURNISHED PETROLEUM PRODUCTS.
29110	4732042	29110	GASOLINE - INCLUDE AVIATION, AUTOMOTIVE, AND ALL OTHER FINISHED GASOLINES
29111	433324	29111	KEROSENE
29112	1410129	29112	DISTILLATE FUEL OIL
29113	758381	29113	RESIDUAL FUEL OIL
29115	65722	29115	LUBRICATING-OIL BASE STOCKS - INCLUDE LIGHT, MEDIUM, HEAVY NEUTRAL AND RESIDUAL STOCKS
29116	121947	29116	LUBRICATING GREASES MADE IN PETROLEUM REFINERIES
29117	148068	29117	ASPHALT
29118	98134	29118	UNFINISHED OILS - INCLUDE CRACKING STOCK, UNFINISHED PETROLEUM OILS, EXCLUDE LUBRICATING-OIL BASE STOCKS NATURAL GAS AND CYCLE CONDENSATES
29119	200478	29119	PETROLATUM, PETROLEUM COKE, ROAD OIL, STILL GAS SOLD, AND OTHER FINISHED PETROLEUM PRODUCTS
29320	1278958	29321 29322 29323	COKE, SCREENING AND BREEZE-MADE IN BYPRODUCT OVENS COKE-OVEN GAS OTHER COKE-OVEN PRODUCTS
29510	84345	29510	PAVING MIXTURES AND BLOCKS
29520	423995	29521 29522	ASPHALT AND TAR ROOFING-SIDINGS AND FELTS ASPHALT AND TAR ROOF COATINGS-CEMENTS AND PITCHES
29910	34470	29911	FUEL BRIQUETS
29920	787594	29924 29925 29926 29927	LUBRICATING OILS LUBRICATING OIL BASE STOCKS LUBRICATING GREASES BLENDED AND COMPOUNDED PETROLEUM PRODUCTS OTHER THAN LUBRICATING OILS AND GREASES
29990	15710	29990	PRODUCTS OF PETROLEUM AND COAL N.E.C.
30110	1602269	30110	TIRES AND INNER TUBES

NEW SIC	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
30210	137418	30210	RUBBER FOOTWEAR - INCLUDE BOOTS, ARCTICS, GAITERS, RUBBERS, ETC.
30310	53269	30310	RECLAIMED RUBBER
30991	67052	30991	CAMELBACK AND TIRE REPAIR MATERIALS
30992	123084	30992	RUBBER AND PLASTIC HEELS AND SOLES - INCLUDE SOLING SLABS AND TOPLIFT SHEETS
30993	894113	30993	MECHANICAL RUBBER OR PLASTIC GOODS
30994	48021	30994	DRUGGIST AND MEDICAL SUNDRIES - INCLUDE WATER BOTTLES, ICE BAGES AND CAPS, ETC.
30995	264869	30995	RUBBER PRODUCTS N.E.C.
31110	879549	31111	CATTLE HIDE AND KIP SIDE LEATHERS
		31112	CALF AND WHLE KIP LEATHERS
		31113	SHEEP AND LAMB LEATHERS
		31114	LEATHERS OTHER THAN CATTLE, CALF AND SHEEP
31210	57738	31211	INDUSTRIAL LEATHER BELTING
		31212	LEATHER PACKINGS, OIL AND GREASE RETAINERS, AND WASHERS
		31213	TEXTILE LEATHERS, AND OTHER INDUSTRIAL LEATHER PRODUCTS
31310	248640	31311	BOOT AND SHOE CUT STOCK
		31312	PLATFORMS, HEELS, HEEL BLOCKS, AND OTHER BOOT AND SHOE FINDINGS - EXCEPT CUT STOCK
31410	1680435	31411	MEN'S YOUTH'S, AND BOYS' SHOES, EXCEPT ATHLETIC SHOES, PLAYSHOES AND MEN'S WORK SHOES
		31412	MEN'S WORK SHOES
		31413	WOMEN'S MISSES', AND CHILDREN'S SHOES - EXCEPT ATHLETIC SHOES
		31414	INFANTS' AND BABIES' SHOES
		31415	ATHLETIC SHOES
		31416	PLAYSHOES
31420	82612	31420	SLIPPERS FOR HOUSEWEAR
31610	129447	31610	SUITCASES, BRIEFCASES, BAGS TRUNKS, AND OTHER LUGGAGE - INCLUDE NON-LEATHER
31710	169321	31710	WOMEN'S HANDBAGS AND PURSES - INCLUDE NON-LEATHER
31720	46040	31720	LEATHER BILLFOLDS, WALLETS, KEY CASES, AND OTHER SMALLER LEATHER GOODS
31990	44195	31990	MISCELLANEOUS LEATHER GOODS OTHERS THAN SADDLERY, HARNESS, AND WHIPS
32110	235119	32112	SHEET (WINDOW) GLASS
		32113	PLATE GLASS
		32114	FLAT GLASS OTHER THAN LAMINATED, SHEET AND PLATE

NEW SIC	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
32210	472418	32210	GLASS CONTAINERS
32290	324696	32290	PRESSED AND BLOWN GLASS AND GLASSWARE - EXCEPT GLASS CONTAINERS
32311	189242	32311	LAMINATED GLASS
32312	60872	32312	MIRRORS
32313	122501	32313	GLASS PRODUCTS OTHER THAN LAMINATED GLASS AND MIRRORS
32410	604011	32413	HYDRAULIC CEMENT - INCLUDE COST OF SHIPPING CONTAINERS
32510	201804	32510	CLAY BRICK AND HOLLOW TILE
32530	61579	32530	CLAY FLOOR AND WALL TILE - EXCEPT QUARRY TILE
32540	53402	32540	CLAY SEWER PIPE
32550	126686	32550	CLAY REFACTORIES
32590	38185	32590	STRUCTURAL CLAY PRODUCTS OTHER THAN BRICK, HOLLOW TILE, FLOOR AND WALL TILE, SEWER PIPE AND CLAY REFRACTORIES - INCLUDE DRAIN TILE, QUARRY TILE, ETC. (SPECIFY KIND)
32610	532931	32610	VITREOUS AND SEMIVITREOUS PLUMBING FIXTURES
		34311	METAL PLUMBING FIXTURES
		34312	PLUMBING FIXTURE FITTINGS AND TRIM (BRASS GOODS)
32620	113569	32620	VITREOUS-CHINA TABLE AND KITCHEN ARTICLES
		32630	FINE EARTHENWARE (WHITEWARE) TABLE AND KITCHEN ARTICLES
32640	74640	32640	PORCELAIN AND STEATITE ELECTRICAL SUPPLIES
32691	30711	32691	ART, DECORATIVE, AND NOVELTY POTTERY WARE
32692	20482	32692	POTTERY PRODUCTS N.E.C.
32710	563470	32711	CONCRETE BLOCK AND BRICK
		32712	CONCRETE PIPE
		32713	PRECAST CONCRETE PRODUCTS OTHER THAN CONCRETE BLOCK, BRICK AND PIPE
32720	206390	32720	GYPSUM PRODUCTS
32740	84613	32741	LIME - INCLUDE COST OF SHIPPING CONTAINERS
32750	115664	32750	MINERAL WOOL (FROM ROCK, SLAG, AND GLASS)

NEW SIC	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
32810	109875	32813	CUT-LIMESTONE AND LIMESTONE PRODUCTS MADE IN PLANTS NOT OPERATED IN CONJUNCTION WITH MINES OR QUARRIES
32910	324713	32911	NONMETALLIC ABRASIVES
		32912	METAL ABRASIVES
		32913	BUFFING AND POLISHING WHEELS AND LAPS
32922	22088	32922	ASBESTOS TEXTILES
32923	76239	32923	ASBESTOS FRICTION MATERIALS
32924	66803	32924	ASPHALT FLOOR TILE
32925	66433	32925	ASBESTOS-CEMENT SHINGLES AND CLAPBOARD
32926	23179	32926	ASBESTOS-CEMENT FLAT AND CORRUGATED SHEETS AND WALLBOARD
32927	21943	32927	ASBESTOS-CEMENT PRODUCTS N.E.C. - INCLUDE PIPE, CONDUIT AND DUCTS
32930	161789	32931	ASBESTOS INSULATIONS
		32932	GASKETS, ALL TYPES OF MATERIAL
		32933	PACKING - EXCLUDE LEATHER (31212) RUBBER (30993) AND METAL
32950	122106	32951	LIGHTWEIGHT AGGREGATE - EXCLUDE VERMICULITE
		32952	MINERALS AND EARTHS, GROUND OR OTHERWISE TREATED, MADE IN PLANTS NOT OTHERWISE OPERATED IN CONJUNCTION WITH MINE
32960	2554	32960	SAND-LIME BRICK, BLOCK, AND TILE
32970	111971	32970	NONCLAY REFACTORIES
32990	52065	32992	SHEET MICA PRODUCTS, EXCEPT RADIO PARTS
33110	2477678	33112	PIG IRON
		33113	BLAST-FURNACE PRODUCTS OTHER THAN PIG IRON AND FERRO-ALLOYS AND OTHER ADDITIVES
33120	94744	33120	STEEL INGOTS
33121	529786	33121	SEMIFINISHED STEEL SHAPES AND FORMS - INCLUDE BLOOMS, BILLETS, TUBE ROUNDS SKELP, WIRE RODS ETC.
33122	525000	33122	STEEL PLATES
33123	1505644	33123	HOT-ROLLED SHEET AND STRIP
33124	716555	33124	TIN, TERNEPLATE, AND BLACKPLATE
33125	329447	33125	STRUCTURAL SHAPES AND PILING

NEW SIC	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
33126	993157	33126	HOT-ROLLED BARS AND BAR SHAPES -INCLUDE CONCRETE REINFORCING BARS TOOL STEEL BARS ETC.
33128	2125770	33128	VALUE OF ALL STEEL MILL PRODUCTS TRANSFERRED TO OTHER PLANTS OF YOUR COMPANY INCLUDE VALUE INGOTS, BARS PLATES ETC.
33129	324533	33129	STEEL MILL SHAPES AND FORMS, N.E.C.
33130	345956	33131	ELECTRIC FURNACE FERROALLOYS AND OTHER ADDITIVES
33210	1422520	33210	GRAY IRON CASTINGS
33220	213420	33220	MALLEABLE IRON CASTINGS
33230	474610	33230	STEEL CASTINGS (CARBON, ALLOY AND STAINLESS)
33310	690963	33311	REFINED UNALLOYED COPPER PRODUCED FROM ORE
		33312	COPPER SMELTER PRODUCTS -INCLUDE BLISTER AND ANODE COPPER, MATTE, SPEISS, FLUE DUST, RESIDUES ETC.
33320	213773	33321	LEAD SMELTER PRODUCTS -INCLUDE BASE BULLION, MATTE, SPEISS ETC.
33330	259667	33331	ZINC RESIDUES AND OTHER MISCELLANEOUS ZINC SMELTER PRODUCTS
33411	128350	33411	COPPER BASE ALLOY INGOTS PRODUCED FOR SALE OR INTERPLANT TRANSFER
33412	160098	33412	LEAD AND TIN-BASE ALLOY INGOTS PRODUCED FOR SALES OR INTERPLANT TRANSFER
33413	40026	33413	ZINC-BASE ALLOY INGOTS PRODUCED FOR SALE OR INTERPLANT TRANSFER
33414	247143	33414	REFINED UNALLOYED ALUMINUM AND ALUMINUM BASE ALLOYS PRODUCED FROM SCRAP, AND ALUMINUM-BASED ALLOY INGOTS
33415	123238	33415	PRECIOUS METAL BASE ALLOY INGOTS PRODUCED FOR SALE OR INTERPLANT TRANSFER
33418	999999	33418	NONFERROUS METALS (OTHER THAN COPPER, LEAD, ZINC, ALUMINUM AND PRECIOUS METALS) PRODUCE FROM SCRAP
33440	999999	33448	UNKNOWN, ONE FIRM: PHELPS DODGE, VALUE OF SHIP. 27694
33517	1044288	33517	ROLLED, DRAWN, AND EXTRUDED COPPER AND COPPER BASE ALLOY MILL PRODUCTS OTHER THAN COPPER BASE ALLOY INGOTS
33526	329634	33526	ALUMINUM PLATE, SHEET, AND STRIP
33527	193780	33527	ROLLED, DRAWN AND EXTRUDED ALUMINUM MILL PRODUCTS OTHER THAN ALUMINUM BASE ALLOY INGOTS ETC.

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NEW SIC	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
33597	10716	33597	ROLLED, DRAWN AND EXTRUDED MAGNESIUM MILL PRODUCTS
33598	105750	33598	ROLLED, DRAWN AND EXTRUDED NONFERROUS METAL MILL PRODUCTS OTHER THAN LEAD, TIN, ZINC AND PRECIOUS METAL BASE ALLOY INGOTS; AND ROLLED, DRAWN, AND EXTRUDED MAGNESIUM MILL PRODUCTS
33610	726810	33610	NONFERROUS CASTINGS (INCLUDING DIE CASTINGS)
33910	666925	33911	DROP, UPSET AND PRESS STEEL FORGINGS (ONLY CLOSED DIE)
		33912	PRESS AND HAMMER STEEL FORGINGS (ONLY OPEN DIE)
		33913	WROUGHT IRON FORGINGS
33920	683579	33921	NAILS, SPIKES, AND BRADS PRODUCED FROM WIRE DRAWN IN THIS ESTABLISHMENT
		33925	ALUMINUM WIRE DRAWN FROM PURCHASED RODS OR BARS
		33926	COPPER WIRE DRAWN FROM PURCHASED RODS OR BARS
		33927	STEEL WIRE DRAWN FROM PURCHASED RODS OR BARS - SHIPPED TO OTHER COMPANIES
		33928	INTERPLANT TRANSFERS OF STEEL WIRE DRAWN FROM PURCHASED RODS OR BARS
		33929	WIRE OTHER THAN ALUMINUM, COPPER, AND STEEL, DRAWN FROM PURCHASED RODS OR BARS
33930	1303083	33937	STEEL PIPE AND TUBES MADE FROM PURCHASED MATERIALS
		33938	INTERPLANT TRANSFERS OF STEEL PIPE MADE FROM PURCHASED MATERIAL
33993	1286098	33993	COLD-ROLLED SHEET AND STRIP MADE FROM PURCHASED HOT-ROLLED MATERIAL
		33997	COLD-ROLLED AND COLD-FINISHED STEEL BARS AND BAR SHAPES MADE FROM PURCHASED HOT-ROLLED MATERIALS
33994	52928	33994	NONFERROUS FORGINGS
33995	38260	33995	METAL POWDERS
33996	265272	33996	COLD-FINISHED BARS AND BARS SHAPES MADE FROM PURCHASED HOT-ROLLED MATERIALS
34110	1061419	34111	METAL CANS
		34113	FLUID MILK SHIPPING CONTAINERS
		34114	TINWARE OTHER THAN METAL CANS AND FLUID MILL SHIPPING CONTAINERS
34211	111328	34211	CUTLERY, SCISSORS, SHEARS, TRIMMERS, AND SNIPS
34212	69895	34212	SAFETY RAZORS AND BLADES
34220	63321	34220	EDGE TOOLS
34230	254479	34231	MECHANICS' HAND SERVICE TOOLS
		34232	HAND TOOLS OTHER THAN CUTLERY, SCISSORS, SHEARS, TRIMMERS, AND SNIPS, EDGE TOOLS, ETC.
34240	27110	34240	FILES, RASPS AND FILE ACCESSORIES
34250	66241	34250	HAND SAWS, SAW BLADES AND SAW ACCESSORIES

NEW SIC	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
34291	384912	34291	TRANSPORTATION EQUIPMENT HARDWARE
34292	52271	34292	FURNITURE AND CABINET HARDWARE
34293	19199	34293	VACUUM BOTTLES AND JUGS
34295	243324	34295	BUILDERS' HARDWARE
34296	154427	34296	HARDWARE N.E.C.
34320	64433	34320	OIL BURNERS
34390	205484	34390	WARM AIR FURNACES AND PARTS
34391	81112	34391	CAST IRON HEATING BOILERS
		34392	CAST IRON RADIATORS AND CONVECTORS
34393	21729	34393	STEEL AND NONFERROUS CONVECTORS
34394	125687	34394	WATER HEATERS, EXCEPT ELECTRIC
34395	88248	34395	DOMESTIC HEATING STOVES (SPACE HEATERS)
34396	276934	34396	DOMESTIC COOKING STOVES, RANGES AND APPLIANCES - EXCEPT ELECTRIC
34397	33486	34397	COMMERCIAL COOKING AND FOOD WARMING EQUIPMENT, EXCEPT ELECTRIC
34398	55794	34398	STEEL HEATING BOILERS (15 PSI AND UNDER OR EQUIVALENT)
34399	53790	34399	COOKING AND HEATING EQUIP. N.E.C. - EXCEPT ELECTRIC (35671,36191,36212,36214,36215)
34410	1104104	34413	ORNAMENTAL METAL WORK - INCLUDE STAIRS, RAILINGS, FIRE ESCAPES, STEEL GRATINGS, ETC.
		34414	PREFABRICATED AND PORTABLE METAL BUILDINGS AND PARTS
		34415	MISCELLANEOUS METAL BUILDING MATERIALS - INCLUDE EXPANDED METAL LATH, CORNER BEADS, FABRICATED CONCRETE REINFORCING BARS, ETC.
		34416	FABRICATED STRUCTURAL IRON AND STEEL - EXCLUDE RECEIPTS FROM ERECTION OR INSTALLATION
34420	390088	34421	METAL DOORS AND METAL FRAMES
		34422	METAL WINDOW SASH AND FRAMES
		34423	METAL MOLDING AND TRIM, AND STORE FRONTS
34431	243620	34431	METAL TANKS, COMPLETE AT FACTORY
34432	173926	34432	FABRICATED STEEL PLATE (CUT, PUNCHED, OR SHAPED FOR ASSEMBLY ON JOB)
34433	140451	34433	POWER BOILERS, PARTS AND ATTACHMENTS (OVER 15 PSI STEAM WORKING PRESSURE)
34434	85419	34434	GAS CYLINDERS, SMOKE STACKS AND OTHER STACKS (IRON AND STEEL) AND OTHER PLATE STEEL

NEW SIC	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
			FABRICATING
34440	561380	34440	SHEET-METAL PRODUCTS
34610	77868	34611	VITREOUS-ENAMELED COOKING AND KITCHEN UTENSILS - INCLUDE HOUSEHOLD, HOSPITAL AND COMMERCIAL
		34612	VITREOUS-ENAMELED PRODUCTS OTHER THAN VITREOUS-ENAMELED HOSPITAL AND COMMERCIAL COOKING AND KITCHEN UTENSILS
34630	1752129	34631	JOB STAMPINGS - EXCEPT AUTOMOTIVE
		34633	PAILS (EXCEPT SHIPPING CONTAINERS), ASH CANS AND GARBAGE CANS
		34634	METAL HOME CANNING CLOSURES
		34635	METAL COMMERCIAL CLOSURES - EXCEPT CROWNS
		34636	CROWNS
		34637	PERFORATED METAL END PRODUCTS AND OTHER STAMPED AND PRESSED METAL END PRODUCTS
		34638	JOB STAMPINGS - AUTOMOTIVE
		34639	STAMPED AND SPUN COOKING AND KITCHEN UTENSILS (HOUSEHOLD, HOSPITAL AND COMMERCIAL) EXCLUDE VITREOUS ENAMELED
34650	32963	34650	ENAMELING, JAPANNING, AND LACQUERING
34660	28472	34660	GALVANIZING AND OTHER HOT-DIP COATING
34670	23657	34670	ENGRAVING ON METAL
34680	235021	34680	ELECTROPLATING, PLATING, AND POLISHING
34710	589319	34711	INCANDESCENT LIGHTING FIXTURES - EXCEPT SPECIALTIES LISTED SEPARATELY BELOW
		34712	INCANDESCENT PORTABLE LAMPS
		34713	INCANDESCENT VEHICULAR LIGHTING EQUIPMENT
		34714	INCANDESCENT HAND PORTABLE LIGHTING EQUIPMENT
		34715	FLUORESCENT LIGHTING EQUIPMENT (FIXTURES AND PORTABLE LAMPS) AND PARTS
		34716	NONELECTRIC LIGHTING EQUIPMENT
		34718	INCANDESCENT STREET AND HIGHWAY LIGHTING EQUIPMENT
		34719	SPECIALIZED INCANDESCENT LIGHTING EQUIPMENT SUCH AS SEARCHLIGHTS, FLOODLIGHTS, MARINE CHANNEL, AVIATION GROUND TYPE, RAILWAY ROUTE ETC. (OTHER THAN PORTABLE LAMPS, VEHICULAR LIGHTING EQUIPMENT, AND STREET AND HIGHWAY LIGHTING LIGHTING EQUIPMENT, INCANDESCENT)
34892	190236	34892	WIRE ROPE, AND CABLE - EXCEPT INSULATED MADE FROM PURCHASED WIRE
34893	111246	34893	FENCING AND FENCE GATES - INCLUDE CHAIN LINK, FIELD, ETC. MADE FROM PURCHASED WIRE
34894	135072	34894	WIRE CLOTH AND WOVEN WIRE PRODUCTS MADE FROM PURCHASED WIRE
34895	321254	34895	WIRE SPRINGS MADE FROM PURCHASED WIRE
34896	252628	34896	WIRE PRODUCTS N.E.C., SUCH AS BARBED WIRE, WELDED WIRE FABRIC, GARMENT HANGERS, PAPER CLIPS MADE FROM PURCHASED

NEW SIC	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
34911	218011	34911	METAL AMMUNITION BOXES AND CHESTS
34912	43818	34912	STEEL SHIPPING PACKAGES, KEGS, AND PAILS (1 TO 12 GALLONS)-EXCLUDE BEER BARRELS
34913	7501	34913	STEEL AND ALUMINUM BEER BARRELS
34914	135661	34914	STEEL SHIPPING BARRELS AND DRUMS (OVER 12 GALLON CAP.) EXCLUDE BEER BARRELS
34930	105608	34930	STEEL SPRINGS, EXCEPT WIRE
34940	643688	34941	BOLTS, NUTS, SCREWS, WASHERS, RIVETS, AND OTHER INDUSTRIAL FASTENERS - STANDARD TYPE ONLY
		34942	SPECIALS - PRODUCTS OTHER THAN STANDARD TYPE FASTENERS - MADE ON THE SAME TYPE OF MACHINES (HEADERS, THREADERS ETC.)
34950	324124	34950	SCREW-MACHINE PRODUCTS
34960	37968	34960	COLLAPSIBLE TUBES
34970	99454	34970	FOIL AND LEAF
34990	117848	34990	FABRICATED METAL PRODUCTS N.E.C.
35110	266195	35111	STEAM AND HYDRAULIC TURBINES; STEAM ENGINES; PARTS FOR STEAM ENGINES, TURBINES AND HYDRAULIC TURBINES
		35112	STEAM AND HYDRAULIC TURBINE GENERATOR-SET UNITS
35191	147449	35191	GASOLINE ENGINES - EXCLUDE OUTBOARD, AIRCRAFT, AUTOMOBILE, TRUCK AND BUS
35192	167386	35192	DIESEL ENGINES - EXCEPT TRUCK AND BUS
35193	33943	35193	GAS ENGINES
35194	164557	35194	PARTS AND ATTACHMENTS FOR INTERNAL COMBUSTION ENGINES - EXCEPT AIRCRAFT, AUTOMOBILE, TRUCK, AND BUS
35195	41037	35195	OUTBOARD MOTORS
35199	48777	35199	INTERNAL COMBUSTION ENGINES N.E.C.
35211	367507	35211	WHEEL-TYPE TRACTORS - INCLUDE PARTS AND ATTACHMENTS FOR REPLACEMENT AND REPAIR
35212	190756	35212	TRACK-LAYING TYPE TRACTORS - INCLUDE PARTS AND ATTACHMENTS FOR REPLACEMENT AND REPAIR
35213	28404	35213	GARDEN TRACTORS - INCLUDE PARTS AND ATTACHMENTS FOR REPLACEMENT AND REPAIR
35214	59798	35214	TRACTOR PARTS AND ATTACHMENTS, SHIPPED TO OTHER PLANTS PRODUCING TRACTORS

NEW SIC	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
35221	663581	35221	FARM MACHINES AND EQUIPMENT (EXCEPT TRACTORS)
35222	173439	35222	PARTS AND ATTACHMENTS FOR FARM MACHINES AND EQUIPMENT, SHIPPED TO OTHER PLANTS PRODUCING FARM EQUIPMENT.
35227	99924	35227	LAWN MOWERS
35311	113548	35311	CRANES, HOISTS, WINCHES, AND DERRICKS - EXCEPT (35631,35312,35320)
35312	222580	35312	POWER CRANES, DRAGLINES, AND SHOVELS; PARTS AND FRONT END ATTACHMENTS FOR POWER CRANES, DRAG LINES AND SHOVELS
35313	53840	35313	MIXERS, PAVERS, AND RELATED EQUIPMENT
35314	102545	35314	SPECIALIZED MINING MACHINERY AND EQUIPMENT
35315	71120	35315	CRUSHING, PULVERIZING, AND SCREENING MACHINERY
35317	216422	35317	EXCAVATING AND ROAD-CONSTRUCTION AND MAINTENANCE MACHINERY-EXCEPT POWER CRANES, DRAGLINES AND SHOVELS
35319	131536	35319	CONSTRUCTION, MINING, AND SIMILAR MACHINERY N.E.C
35320	333048	35320	OIL-FIELD MACHINERY AND TOOLS
35411	315743	35411	MACHINE TOOLS, EXCLUDE HOMESHOP TYPE
35418	18539	35418	MACHINE TOOLS DESIGNED PRIMARILY FOR HOME WORKSHOPS, GAARAGES AND SERVICE SHOPS, EXCEPT POWER-DRIVEN HAND TOOLS
35419	12594	35419	REBUILT MACHINE TOOLS
35421	142731	35421	ROLLING MILL MACHINERY
35422	91050	35422	METALWORKING PRESSES - EXCEPT FORGING
35423	112668	35423	POWER-DRIVEN HAND TOOLS - INCLUDE PARTS, ATTACHMENTS AND ACCESSORIES
35425	24319	35425	ACETYLENE WELDING AND CUTTING APPARATUS
35426	144097	35426	METALWORKING MACHINERY N.E.C
35431	454632	35431	JIGS, FIXTURES, FORMING, STAMPING, AND PIERCING PUNCHES AND DIES, DIE SETS AND SUBPRESSES
35432	262629	35432	SMALL CUTTING TOOLS FOR MACHINE TOOLS AND METAL-WORKING MACHINERY

NEW SIC	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
35433	43333	35433	PRECISION MEASURING TOOLS
35434	75229	35434	METALWORKING ACCESSORIES N.E.C.
35511	70614	35511	DAIRY AND MILK PRODUCTS PLANT MACHINERY AND EQUIPMENT
35512	48765	35512	BAKERY MACHINERY AND EQUIPMENT
35513	42683	35513	BOTTLING MACHINERY - EXCEPT DAIRY
35514	124041	35514	FOOD-PRODUCTS MACHINERY N.E.C.
35520	428880	35520	TEXTILE MACHINERY
35530	137347	35531	WOODWORKING MACHINERY-OTHER THAN THAT DESIGNED PRIMARILY FOR HOME WORKSHOPS, GARAGES, AND SERVICE SHOPS
		35538	WOODWORKING MACHINERY DESIGNED PRIMARILY FOR HOME WORKSHOPS, GARAGES AND SERVICE SHOPS-EXCEPT POWER-DRIVEN HAND TOOLS (35423)
35540	114994	35540	PAPER-INDUSTRIES MACHINERY
35550	200682	35550	PRINTING-TRADES MACHINERY AND EQUIPMENT
35591	64131	35591	CHEMICAL MANUFACTURING INDUSTRIES MACHINERY AND EQUIPMENT
35592	117844	35592	FOUNDRY MACHINERY AND EQUIPMENT-INCLUDE FOUNDRY PATTERNS AND MOLDS
35593	52740	35593	PLASTICS-WORKING MACHINERY AND EQUIPMENT
35594	45649	35594	RUBBER-WORKING MACHINERY AND EQUIPMENT
35595	25698	35595	PETROLEUM REFINERY MACHINERY AND EQUIPMENT
35599	254010	35599	SPECIAL INDUSTRY MACHINERY AND EQUIPMENT N.E.C.
35611	257252	35611	INDUSTRIAL PUMPS-INCLUDE ROTARY, CENTRIFUGAL, RECIPROCATING, TURBINE ETC.
35612	60204	35612	DOMESTIC WATER SYSTEMS
35613	113129	35613	AIR COMPRESSORS
35614	140199	35614	PUMPS, GAS COMPRESSORS, AND PUMPING EQUIPMENT N.E.C.- INCLUDE PARTS AND ATTACHMENTS FOR PUMPS AND COMPRESSORS
35620	102195	35620	ELEVATORS AND MOVING STAIRWAYS
35630	240696	35631	OVERHEAD TRAVELING CRANES AND MONORAIL SYSTEMS
		35635	CONVEYORS AND CONVEYING EQUIPMENT- INCLUDE UNDERGROUND MINE CONVEYORS

NEW SIC	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
35640	120785	35640	INDUSTRIAL FANS AND BLOWERS
35650	166259	35650	INDUSTRIAL TRUCKS, TRACTORS, TRAILERS, AND STACKERS
35660	463833	35661	PLAIN BEARINGS AND BUSHINGS
		35662	SPEED REDUCERS, GEARS, AND INDUSTRIAL HIGH SPEED DRIVES
		35663	MECHANICAL POWER-TRANSMISSION EQUIPMENT N.E.C.
35671	19779	35671	ELECTRIC INDUSTRIAL FURNACES AND OVENS
35672	33717	35672	FUEL-FIRES INDUSTRIAL FURNACES AND OVENS
35673	18410	35673	PARTS AND ATTACHMENTS FOR INDUSTRIAL FURNACES AND OVENS
35680	19153	35680	MECHANICAL STOKERS
35690	327745	35691	HEAT EXCHANGERS
		35692	UNKNOWN
35710	349670	35710	COMPUTING MACHINES
35720	130410	35720	TYPEWRITERS
35760	53274	35760	SCALES AND BALANCES
35791	23586	35791	AUTOMATIC MERCHANDISING MACHINES-EXCLUDE REFRIGERATED
35792	49355	35792	AMUSEMENT AND OTHER COIN-OPERATED MACHINES
35793	133111	35793	OFFICE AND STORE MACHINES, N.E.C. - INCLUDE TIME-RECORDING CLOCKS
35810	532084	35811	HOUSEHOLD MECHANICAL WASHING MACHINES
		35812	HOUSEHOLD LAUNDRY EQUIPMENT, N.E.C. SUCH AS WRINGERS DRIERS AND IRONERS
35820	77441	35820	COMMERCIAL LAUNDRY, DRY-CLEANING AND PRESSING MACHINES
35830	170636	35830	SEWING MACHINES
35840	167260	35841	HOUSEHOLD VACUUM CLEANERS - INCLUDE ATTACHMENTS AND CLEANING TOOLS
35851	925131	35851	HOUSEHOLD MECHANICAL REFRIGERAATORS - INCLUDE ELECTRIC AND GAS
35852	132469	35852	HOME AND FARM FREEZERS
35853	231034	35853	UNITARY COMMERICAL REFRIGERATION EQUIPMENT

NEW SIC	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
35854	80886	35854	COMPRESSORS AND COMPRESSOR UNITS
35855	106189	35855	CONDENSING UNITS
35856	425589	35856	REFRIGERATION MACHINERY AND AIR CONDITIONING EQUIPMENT N.E.C.
35860	121793	35860	MEASURING AND DISPENSING PUMPS
35890	151852	35890	SERVICE-INDUSTRY AND HOUSEHOLD MACHINES, N.E.C.
35910	711778	35911	VALVES AND FITTINGS FOR PIPING SYSTEMS - EXCLUDE PLUMBING AND HEATING VALVES
		35912	PLUMBING AND HEATING VALVES AND SPECIALTIES - EXCLUDE PLUMBING FIXTURE FITTINGS AND TRIM (34312)
		35913	VALVES AND FITTINGS - EXCLUDE PLUMBING FIXTURE FITTINGS AND TRIM (34312), N.E.C.
35920	154623	35920	FABRICATED PIPE MADE FROM PURCHASED PIPE
35930	450495	35930	BALL AND ROLLER BEARINGS AND COMPONENTS
35990	627114	35990	MACHINE SHOP PRODUCTS
		35994	UNKNOWN
36110	491959	36111	CURRENT-CARRYING WIRING DEVICES
		36112	NONCURRENT-CARRYING WIRING DEVICES AND SUPPLIES
		36113	POLE LINE AND TRANSMISSION HARDWARE
36120	100554	36120	CARBON AND GRAPHITE PRODUCTS
36130	149800	36131	INTEGRATING INSTRUMENTS, ELECTRICAL
		36132	TEST EQUIPMENT FOR TESTING ELECTRICAL, RADIO AND COMMUNICATION CIRCUITS AND MOTORS
		36133	ELECTRICAL MEASURING INSTRUMENT N.E.C.
36140	888136	36141	FRACTIONAL HORSEPOWER MOTORS
		36142	INTEGRAL HORSEPOWER MOTORS AND GENERATORS-OTHER THAN FOR LAND TRANSPORTATION EQUIPMENT
		36143	PRIME MOVER GENERATOR SETS-OTHER THAN STEAM OR HYDRAULIC TURBINE
		36144	MOTOR-GENERATOR SETS AND OTHER ROTATING EQUIPMENT
		36145	MOTORS, GENERATORS, AND CONTROL APPARATUS (INCLUDING PARTS) FOR TRANSPORTATION EQUIPMENT
		36146	PARTS AND SUPPLIES FOR MOTORS, GENERATORS, AND MOTOR-GENERATOR SETS-EXCLUDE THOSE FOR LAND TRANSPORTATION EQUIPMENT
36151	83891	36151	SPECIALTY TRANFORMERS
36152	278041	36152	POWER AND DISTRIBUTION TRANSFORMERS
36153	43548	36153	TRANSFORMER PARTS AND SUPPLIES, POWER REGULATORS, BOOSTERS, AND REACTORS
36161	331736	36161	SWITCHGEAR AND SWITCHBOARD APPARATUS

NEW SIC	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
36162	200489	36162	INDUSTRIAL ELECTRICAL CONTROL EQUIPMENT-EXCEPT RAILWAY AND MOTOR VEHICLE CONTROLLERS(36145)
36163	168795	36163	DOMESTIC AUTOMATIC CONTROLS
36170	109825	36171	ARC WELDING MACHINES, COMPONENTS, AND ACCESSORIES-EXCEPT ELECTRODES
		36172	ARC WELDING ELECTRODES
		36173	RESISTANCE WELDERS, PARTS, COMPONENTS, ACCESSORIES AND ELECTRODES
36191	11337	36191	HIGH FREQUENCY INDUCTION AND DI-ELECTRIC HEATING APPARATUS
36192	33101	36192	CAPACITORS FOR INDUSTRIAL USE-POWER CAPACITORS, FLUORESCENT LAMP BALAST CAPACITORS, ETC. EXCLUDE (36614)
36193	57868	36193	ELECTRICAL EQUIPMENT FOR INDUSTRIAL USE, N.E.C.
36211	60402	36211	ELECTRIC FANS, EXCEPT INDUSTRIAL TYPE-INCLUDE DESK, WALL BRACKET, HIGH PEDESTAL ETC.
36212	63522	36212	HOUSEHOLD WATER HEATERS, ELECTRIC (PERMANENT INSTALLATION TYPES ONLY)
36213	306004	36213	TOTAL OF DRY SHAVERS; SMALL HOUSEHOLD ELECTRIC APPLIANCES, INCLUDE IRONS, TOASTERS, FOOD MIXERS, ETC. - EXCLUDE
36214	218478	36214	HOUSEHOLD RANGES, ELECTRIC
36215	16639	36215	COMMERCIAL COOKING AND FOOD WARMING EQUIPMENT, ELECTRIC
36217	85000	36217	PARTS AND ACCESSORIES FOR ELECTRIC APPLIANCES
36310	879915	36317	INSULATED WIRE AND CABLE MADE FROM PURCHASED WIRE (PURCHASED WIRE INCLUDES WIRE TRANSFERRED FROM OTHER ESTABLISHMENTS OF SAME COMPANY AS WELL AS WERE PURCHASED FROM OTHER COMPANIES)
36410	486964	36410	ELECTRICAL EQUIPMENT FOR INTERNAL COMBUSTION ENGINES INCLUDING BATTERY-CHARGING GENERATORS, CRANKING MOTORS,ETC.
36510	243157	36511	ELECTRIC LAMPS (BULBS)
36612	1687073	36612	HOUSEHOLD RADIO RECEIVERS, TELEVISION SETS, RADIO-PHONOGRAPHS, PHONOGRAPHS, AND RECORD PLAYERS
36613	268611	36613	COMMERCIAL RADIO COMMUNICATIONS, RADIO NAVIGATION AIDS, AND RADIO AND TELEVISION BROADCAST EQUIPMENT
36614	23309	36164	FUSES AND FUSE EQUIPMENT, UNDER 2300 VOLTS
		36614	ELECTRONIC TYPE COMPONENTS FOR WIRE, RADIO, TELEVISION, AND PHONOGRAPH EQUIPMENT, INDUST. CONTROLS AND SPECIAL ELECTRONIC APPLICATIONS SUCH AS RADAR, INDUSTRIAL HEATING, ETC.
36615	46597	36615	RECORDERS, AMPLIFIERS, AUDIO EQUIPMENT AND RECORDING MAGNETIC TAPES AND WIRE

NEW SIC	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
36622	85172	36622	TOTAL OF TRANSMITTING TYPE TUBES - EXCLUDE X-RAY AND INDUSTRIAL TYPE TUBES; X-RAY EQUIPMENT AND X-RAY AND INDUSTRIAL TYPE TUBES
36623	197732	36623	RADIO RECEIVING-TYPE TUBES-EXCLUDE CATHODE RAY
36624	102870	36624	CATHODE RAY TUBES (TELEVISION RECEIVER TYPE)
36630	93852	36631	PHONOGRAPH RECORDS
		36632	RECORDING BLANKS (DISC AND CYLINDER)
36640	449546	36640	TELEPHONE AND TELEGRAPH EQUIPMENT
36690	86296	36690	COMMUNICATION EQUIPMENT N.E.C.
36910	318546	36911	STORAGE BATTERIES, S.L.I. TYPE
		36912	STORAGE BATTERIES, OTHER THAN S.L.I. TYPE
		36913	PARTS AND SUPPLIES FOR STORAGE BATTERIES
36920	95491	36920	PRIMARY BATTERIES (DRY AND WET)
36932	48244	36932	ELECTRO-THERAPEUTIC APPARATUS
36990	114905	36991	ELECTRIC LAMP COMPONENTS, INCANDESCENT PRODUCTS AND COILS
		36992	ELECTRICAL HEARING AIDS
37150	229685	37150	TRUCK TRAILERS AND PARTS-INCLUDE FULL AND SEMITRAILERS
37160	176853	37160	AUTOMOBILE TRAILERS AND PARTS
37171	9415476	37171	PASSENGER CARS, KNOCKED DOWN OR ASSEMBLED
37172	1843489	37172	TRUCK TRACTORS, TRUCK CHASSIS, AND TRUCKS PRODUCED FROM CHASSIS MADE IN THIS ESTABLISHMENT KNOCKED DOWN OR ASSEMBLED
37173	72632	37173	MOTOR COACHES (EXCEPT 37423) PRODUCED FROM CHASSIS MADE IN THIS ESTABLISHMENT
37174	999999	37174	TOTAL OF 37120 AND 37122
37175	999999	37175	TOTAL OF 37140 AND 37141
37176	18541	37176	FIRE-DEPARTMENT VEHICLES PRODUCED FROM CHASSIS MADE IN THIS ESTABLISHMENT
37177	999999	37177	AMPHIBIAN COMBAT VEHICLE OR CARRIER ASSEMBLY
37178	999999	37178	MOTOR CARRIAGE (FOR ARTILLERY PIECES) ASSEMBLY
37211	1813927	37211	COMPLETE AIRCRAFT, MILITARY TYPE

NEW SIC	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
37214	88043	37214	MODIFICATIONS CONVERSIONS AND OVERHAUL OF PREVIOUSLY DELIVERED AIRCRAFT
37220	447211	37221	AIRCRAFT ENGINES - EXCEPT PARTS
		37222	AIRCRAFT ENGINE PARTS
		37223	RECEIPTS FOR RESEARCH AND DEVELOPMENT WORK ON AIRCRAFT ENGINES
37230	50468	37231	RECEIPTS FOR RESEARCH AND DEVELOPMENT WORK ON AIRCRAFT PROPELLERS
		37232	AIRCRAFT PROPELLERS AND PARTS
37290	1351635	37291	AIRCRAFT PARTS AND AUXILIARY EQUIPMENT N.E.C.
		37292	AIRCRAFT PARTS AND AUXILIARY EQUIPMENT N.E.C.
37310	566349	37315	SELF-PROPELLED SHIPS (VESSELS OVER 65 FT. IN LENGHT)
		37316	SHIP REPAIR (ON VESSELS OVER 65 FT. IN LENGTH)
		37317	NON-PROPELLED SHIPS (VESSELS OVER 65 FT. IN LENGTH) NON-MILITARY
		37318	SELF-PROPELLED SHIPS (VESSELS OVER 65 FT. IN LENGTH) NON-MILITARY
		37319	SHIP REPAIR (ON VESSELS OVER 65 FT. IN LENGTH) NON-MILITARY
37320	130371	37323	BOATS (VESSELS 65 FT. IN LENGTH AND LESS)
		37324	BOAT REPAIR (ON VESSELS 65 FT. IN LENGTH AND LESS)
		37325	BOATS (VESSELS 65 FT. IN LENGTH AND LESS) NON-MILITARY
		37326	BOAT REPAIR (ON VESSELS 65 FT IN LENGTH AND LESS) NON-MILITARY
37410	731000	37411	LOCOMOTIVES (NEW)-RAILROAD ROAD SERVICE TYPE INCLUDE COMBINATION LINE AND SWITCHING
		37412	LOCOMOTIVES (NEW) SWITCHING TYPE
		37413	LOCOMOTIVES (NEW) INDUSTRIAL AND MINING TYPE
		37414	PARTS FOR LOCOMOTIVES- INCLUDE TENDERS, FOR SALE SEPARATELY
		37415	REBUILT LOCOMOTIVES
37420	483447	37421	PASSENGER TRAIN CARS (NEW)
		37422	FREIGHT TRAIN CARS (NEW)
		37423	STREET, RAPID TRANSIT, AND INTER-URBAN CARS; TROLLEY BUSSES; SELF-PROPELLED CARS
		37424	PARTS AND ACCESSORIES FOR RAILROAD AND STREET CARS
		37425	REBUILD PASSENGER AND FREIGHT TRAIN CARS
37511	20509	37511	MOTORCYCLES, MOTORBIKES, MOTOR-SCOOTERS AND PARTS
37512	85704	37512	BICYCLES AND PARTS
37990	33821	37990	TRANSPORTATION EQUIPMENT N.E.C.
38111	180570	38111	AIRCRAFT FLIGHT INSTRUMENTS AND AUTOMATIC PILOTS
38113	76716	38113	LABORATORY AND SCIENTIFIC INSTRUMENTS EXCLUDE SURGICAL, MEDICAL, AND DENTAL
38211	37333	38211	AIRCRAFT AND NAUTICAL INSTRUMENTS-EXCLUDE FLIGHT INSTRUMENTS (38111)
38212	92147	38212	INTEGRATING METERS, NONELECTRICAL TYPE

NEW SIC	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
38213	216567	38213	INDUSTRIAL PROCESS INSTRUMENTS INCLUDE INDICATING, RECORDING AND CONTROLLING INSTRUMENTS
38214	80145	38214	MOTOR-VEHICLE INSTRUMENTS
38310	51254	38311	OPTICAL INSTRUMENTS AND LENSES
		38312	GUN FIRE-CONTROL EQUIPMENT
38410	44042	38410	SURGICAL AND MEDICAL INSTRUMENTS
38423	62375	38423	SANITARY NAPKINS AND TAMPONS
38424	216688	38424	SURGICAL AND ORTHOPEDIC APPLIANCES AND SUPPLIES
38430	70239	38430	DENTAL INSTRUMENTS, EQUIPMENT AND SUPPLIES
38510	110843	38510	OPHTHALMIC GOODS INCLUDING EYEGLASS FRAMES AND FITTINGS AND SUN OR GLARE GLASSES
38612	102769	38612	STILL PICTURE EQUIPMENT EXCEPT FILM
38613	195586	38613	FILM
38614	82308	38614	PHOTOGRAPHIC (SENSITIZED) PAPER
38615	12951	38615	PREPARED PHOTOGRAPHIC CHEMICALS INCLUDE DEVELOPERS, FIXERS AND TONERS
38616	44797	38616	35 MM MOTION PICTURE CAMERAS AND PROJECTORS
38617	44079	38617	MOTION PICTURE EQUIPMENT N.E.C. EXCEPT FILM
38710	307488	38711	CLOCKS INCLUDE ELECTRIC CLOCKS, CLOCK MOVEMENTS, AND TIMING MECHANISMS, NOT FOR TIMEPIECE USE, BUT EXCLUDE TIME
		38712	WATCHES WITH DOMESTIC MOVEMENTS JEWELED LEVER ESCAPEMENT TYPE
		38713	WATCHES WITH DOMESTIC MOVEMENTS PIN LEVEL ESCAPEMENT TYPE
		38714	WATCHES WITH IMPORTED MOVEMENTS
		38715	CLOCK AND WATCH PARTS EXCEPT WATCH CASES SOLD TO OTHER COMPANIES
		38716	INTERPLANT TRANSFERS OF WATCH AND CLOCK MOVEMENTS AND PARTS
39110	234484	39110	JEWELRY, MADE OF PRECIOUS METAL
39120	77838	39120	JEWELERS' FINDINGS AND MATERIALS
39140	239289	39142	SILVERWARE AND PLATED WARE
39310	63953	39310	PIANOS
39320	25613	39320	ORGANS

NEW SIC	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
39390	33670	39390	MUSICAL INSTRUMENTS AND PARTS - EXCLUDE PIANOS AND ORGANS
39410	277835	39410	GAMES AND TOYS, EXCEPT DOLLS AND CHILDREN'S VEHICLES
39420	92656	39420	DOLLS AND STUFFED TOY ANIMALS
39430	73937	39430	CHILDREN'S VEHICLES (BABY CARRIAGES, WALKERS, STROLLERS, ETC.)
39490	240916	39490	SPORTING AND ATHLETIC GOODS
39510	116520	39510	PENS, MECHANICAL PENCILS, AND PEN POINTS
39520	49212	39520	LEAD PENCIALS AND CRAYONS
39530	27274	39530	HAND STAMPS, STENCILS, AND BRANDS
39540	17713	39540	ARTISTS' MATERIALS
39550	57500	39550	CARBON PAPER AND INKED RIBBONS
39630	61777	39630	BUTTONS AND PARTS
39640	189550	39640	NEEDLES, PINS, HOOKS AND EYES, AND SIMILAR NOTIONS
39711	468334	39711	MOLDED PLASTIC PRODUCTS
39712	85438	39712	LAMINATED PLASTIC SHEETS-RODS-TUBES
39713	251644	39713	FABRICATED PLASTIC PRODUCTS, OTHER THAN MOLDED PRODUCTS INCLUDING SEMIMANUFACTURED FORMS
39811	31665	39811	BROOMS
39812	55522	39812	PAINT BRUSHES
39813	98260	39813	BRUSHES N.E.C. SUCH AS TOILET, INDUSTRIAL, MAINTENANCE
39820	37193	39820	CORK PRODUCTS
39830	58597	39830	MATCHES
39840	19715	39840	CANDLES
39850	12562	39850	FIREWORKS AND PYROTECHNICS-INCLUDE FIREWORKS, FLARES, RAILROAD TORPEDOES, AND FUSES
39860	35086	39860	JEWELRY CASES AND INSTRUMENT CASES

NEW SIC	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
39930	229764	39930	SIGNS AND ADVERTISING DISPLAYS
39960	14179	39960	TOBACCO PIPES AND CIGARETTE HOLDERS
39970	26855	39970	SODA-FOUNTAIN AND BEER-DISPENSING EQUIPMENT
39990	199168	39992	HAND FIRE EXTINGUISHERS AND PARTS
		39999	UNKNOWN

NEW SIC	4-FIRM CR WEISS	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
				SPECIALTIES, N.S.K. (INCLUDES 20324 AND 20320)
20323	0.500	3058	20323	CANNED DRY BEANS
20330	0.171	39229	20330	CANNED FRUITS AND VEGETABLES, N.S.K.
			20331	CANNED FRUITS (EXCEPT BABY FOODS)
			20332	CANNED VEGETABLES (EXCEPT HOMINY AND MUSHROOMS)
			20333	CANNED HOMINY AND MUSHROOMS
			20334	CANNED FRUITS JUICES, NECTARS, AND CONCENTRATES
			20335	CANNED VEGETABLE JUICES
			20336	CATSUP AND OTHER TOMATO SAUCES
			20338	JAMS, JELLIES, AND PRESERVES
20340	0.295	6256	20340	DEHYDRATED FRUITS, VEGETABLES AND SOUP MIXES, N.S.K.
			20341	DRIED FRUITS AND VEGETABLES, EXCEPT SOUP MIXES
			20342	SOUP MIXES, DRIED
20350	0.000	753	20350	PICKLES, SAUCES, AND SALAD DRESSINGS, N.S.K.
20352	0.380	3625	20352	PICKLES AND OTHER PICKLED PRODUCTS
20353	0.500	1513	20353	MEAT SAUCES (EXCEPT TOMATO)
20354	0.520	5760	20354	MAYONNAISE, SALAD DRESSINGS, AND SANDWICH SPREADS
20370	0.263	16487	20371	FROZEN FRUITS, JUICES, AND ADES
			20372	FROZEN VEGETABLES
20380	0.357	17426	20380	OTHER FROZEN SPECIALTIES, N.S.K. (INCLUDES 20370, FROZEN FRUITS AND VEGETABLES, N.S.K.)
			20381	FROZEN PIES AND OTHER FROZEN BAKED GOODS
			20382	FROZEN DINNERS, BEEF, PORK, POULTRY PIES, AND NATIONALITY FOOD, ETC.
			20383	OTHER FROZEN SPECIALTIES
20410	0.000	30267	20411	WHEAT FLOUR, EXCEPT FLOUR MIXES
			20412	WHEAT MILL PRODUCTS OTHER THAN FLOUR
			20413	CORN MILL PRODUCTS
			20415	FLOUR MIXES AND REFRIGERATED DOUGHS MADE IN FLOUR MILLS
			20416	OTHER GRAIN MILL PRODUCTS
			20455	FLOUR MIXES AND REFRIGERATED DOUGHS NOT MADE IN MILLS
20430	0.836	9346	20430	CEREAL BREAKFAST FOODS
20440	0.417	6713	20440	MILLED RICE AND BYPRODUCTS
20460	0.617	7866	20460	WET CORN MILLING

NEW SIC	4-FIRM CR WEISS	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
20110	0.000 *	289924**	20110	MISCELLANEOUS BYPRODUCTS OF MEATPACKING PLANTS
			20111	BEEF, NOT CANNED OR MADE INTO SAUSAGE
			20111	OTHER MEATPACKING PLANT PRODUCTS, EXCEPT SAUSAGE CASINGS
			20112	VEAL, NOT CANNED OR MADE INTO SAUSAGE
			20113	LAMB AND MUTTON, NOT CANNED OR MADE INTO SAUSAGE
			20114	PORK, FRESH AND FROZEN
			20115	LARD
			20116	PORK, PROCESSED, MADE IN MEATPACKING PLANTS
			20117	SAUSAGE AND SIMILAR PRODUCTS, MADE IN MEATPACKING PLANTS
			20118	CANNED MEATS CONTAINING 20 PERCENT OR MORE MEAT (EXECPT DOG AND CAT FOOD)
			20119	HIDES, SKINS, AND PELTS
			20130	SAUSAGES AND OTHER PREPARED MEATS,N.S.K.
			20136	PORK, PROCESSED CURED, NOT MADE IN MEATPACKING PLANTS
			20137	SAUSAGE AND SIMILAR PRODUCTS, NOT MADE IN MEATPACKING PLANTS
			20138	CANNED MEATS CONTAINING 20 PERCENT OR MORE MEAT (EXCEPT D AND C FOOD) NOT MADE IN MEATPACKING PLANTS
			20139	NATURAL SAUSAGE CASINGS
			20161	YOUNG CHICKENS (USUALLY UNDER 20 WEEKS OF AGE), INCLUDING BROILERS, FRYERS, ROASTERS AND CAPONS
			20162	HENS AND/OR FOWL
			20163	TURKEYS
			20164	OTHER POULTRY AND SMALL GAME
			20171	PROCESSED POULTRY, EXCEPT SOUPS
20170	0.360	1567	20172	LIQUID, DRIED, AND FROZEN EGGS
20210	0.370	7911	20210	CREAMERY BUTTER
20221	0.360	14000	20221	NATURAL CHEESE, EXCEPT COTTAGE CHEESE
20222	0.600	11340	20222	PROCESS CHEESE AND RELATED PRODUCTS
20230	0.328	17062	20231	DRY MILK PRODUCTS
			20232	CANNED MILK PRODUCTS (CONSUMER TYPE CANS)
			20233	CONCENTRATED MILK, SHIPPED IN BULK
			20234	ICE CREAM MIX AND ICE MILK MIX
20240	0.620	15194	20240	ICE CREAM AND ICES
20260	0.529	76627	20260	FLUID MILK AND RELATED PRODUCTS, N.S.K.
			20261	BULK FLUID MILK AND CREAM
			20262	PACKAGED FLUID MILK AND RELATED PRODUCTS
			20263	COTTAGE CHEESE (INCLUDING BAKERS' CHEESE, POT CHEESE, AND FARMERS' CHEESE)
			20264	BUTTERMILK, CHOCOLATE DRINK, AND OTHER FLAVORED MILK PRODUCTS
20321	0.950	3467	20321	CANNED BABY FOODS
20322	0.640	9774	20322	SOUPS AND OTHER CANNED SPECIALTIES AND CANNED

* Weiss' adjusted concentration ratio was not applicable to the industry classification adopted here.

** hundred thousands.

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NEW SIC	4-FIRM CR WEISS	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
20470	0.491	14511	20471	DOG AND CAT FOOD
			20472	OTHER PET AND SPECIALTY FEED
20480	0.330	46582	20480	PREPARED FEEDS, N.E.C., N.S.K.
			20481	EGG-TYPE FEED, INCLUDING STARTER-GROWER AND LAYER-BREEDER
			20482	BROILER FEED
			20483	TURKEY FEED
			20484	DAIRY CATTLE FEED
			20485	SWINE FEED
			20486	BEEF CATTLE FEED
			20487	HORSE AND MULE FEED
			20488	OTHER POULTRY AND LIVESTOCK FEED
			20489	OTHER PREPARED ANIMAL FEEDS
20510	0.428	51808	20510	BREAD, CAKE, AND RELATED PRODUCTS, N.S.K.
			20511	BREAD, WHITE,WHEAT, AND RYE
			20512	ROLLS, BREAD-TYPE, INCLUDING BROWN AND SERVE, STUFFING AND CRUMBS
			20513	SWEET YEAST GOODS
			20514	SOFT CAKES
			20515	PIES
			20516	PASTRIES
			20517	DOUGHNUTS (CAKE TYPE)
20520	0.573	17133	20521	CRACKERS AND PRETZELS
			20522	COOKIES AND ICE CREAM CONES
20610	0.000	30529	20610	SUGAR CANE MILL PRODUCTS AND BYPRODUCTS
			20620	REFINED CANE SUGAR AND BYPRODUCTS
			20630	REFINED BEET SUGAR AND BYPRODUCTS
20650	0.311	23348	20650	CONFECTIONERY PRODUCTS, N.S.K.
			20651	BAR GOODS (EXCEPT SOLID CHOCOLATE BARS)
			20652	5 CENT AND 10 CENT SPECIALTIES
			20653	PACKAGE GOODS (EXCEPT SOLID CHOCOLATE)
			20654	BULK GOODS (EXCEPT SOLID CHOCOLATE)
			20655	PENNY GOODS
			20657	CHOCOLATE-TYPE CONFECTIONERY MADE FROM PURCHASED CHOCOLATE. (SEE ALSO 20662).
			20658	SALTED NUTS AND OTHER CONFECTIONERY-TYPE PRODUCTS
20660	0.000	7240	20661	CHOCOLATE COATINGS
			20662	CONFECTIONERY-TYPE CHOCOLATE AND COCOA PRODUCTS, MADE FROM COCOA BEANS GROUND IN THE SAME ESTABLISHMENT. (SEE ALSO 20657).
			20668	OTHER CHOCOLATE AND COCOA PRODUCTS MADE FROM PURCHASED CHOCOLATE AND SALTED NUTS
			20998	CHOCOLATE AND COCOA PRODUCTS, EXCEPT CONFECTIONERY (MADE FROM PURCHASED CHOCOLATE AND COCOA
20670	0.830	3848	20670	CHEWING GUM AND CHEWING GUM BASE

NEW SIC	4-FIRM CR WEISS	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
20740	0.370	43033	20741	COTTONSEED OIL, CRUDE
			20742	COTTONSEED OIL, ONCE REFINED
			20743	COTTON LINTERS
			20744	COTTONSEED CAKE, MEAL, AND OTHER BYPRODUCTS
			20751	SOYBEAN OIL
			20752	SOYBEAN CAKE, MEAL, AND OTHER BYPRODUCTS
			20760	VEGETABLE OIL MILL PRODUCTS, N.E.C., N.S.K.
			20761	LINSEED OIL
			20762	VEGETABLE OILS (OTHER THAN COTTONSEED, SOYBEAN, AND LINSEED
			20763	OTHER VEGETABLE OIL MILL PRODUCTS, EXCEPT COTTONSEED AND SOYBEAN
			20770	ANIMAL AND MARINE FATS AND OILS, N.S.K.
			20771	GREASE AND INEDIBLE TALLOW
			20772	MEAT MEAL AND TANKAGE
			20773	ANIMAL AND MARINE OIL PRODUCTS, INCLUDING FOOTS
20790	0.373	22745	20791	SHORTENING AND COOKING OILS
			20792	MARGARINE
20820	0.662	40387	20821	CANNED BEER AND ALE
			20822	BOTTLED BEER AND ALE
			20823	BEER AND ALE IN BARRELS AND KEGS
			20824	ALL OTHER MALT BEVERAGES AND BREWING BYPRODUCTS
20830	0.480	2128	20830	MALT AND MALT BYPRODUCTS
20840	0.388	8510	20840	WINES, BRANDY, AND BRANDY SPIRITS
20850	0.358	15572	20851	DISTILLED LIQUORS, EXCEPT BRANDY
			20853	BOTTLED LIQUORS, EXCEPT BRANDY
20860	0.650	48072	20860	BOTTLED AND CANNED SOFT DRINKS
20870	0.614	14529	20870	FLAVORING EXTRACTS AND SIRUPS, N.S.K.
			20871	FLAVORING EXTRACTS, EMULSIONS, AND OTHER LIQUID FLAVORS
			20872	LIQUID BEVERAGE BASES, NOT FOR USE BY SOFT DRINK BOTTLERS
			20873	FLAVORING SIRUPS FOR USE BY SOFT DRINK BOTTLERS
			20874	OTHER FLAVORING AGENTS (EXCEPT CHOCOLATE SIRUPS)
20910	0.260	5183	20910	CANNED AND CURED SEAFOOD, INCLUDING SOUP (EXCEPT FROZEN)
20920	0.134	10168	20922	FRESH PACKAGED FISH AND OTHER SEAFOOD
			20923	FROZEN PACKAGED FISH, EXCLUDING SHELLFISH
			20924	FROZEN PACKAGED SHELLFISH AND OTHER SEAFOOD, INCLUDING SOUP
20950	0.612	21634	20951	ROASTED COFFEE, WHOLE BEAN OR GROUND
			20952	CONCENTRATED COFFEE
20970	0.860	1057	20970	MANUFACTURED ICE

NEW SIC	4-FIRM CR WEISS	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
20980	0.331	3552	20980	MACARONI, SPAGHETTI, AND NOODLES
20990	0.000	3477	20990	MISCELLANEOUS FOODS, N.S.K.
20991	0.800	2672	20991	DESSERTS (READY-TO-MIX)
20992	0.490	10421	20992	CHIPS, (POTATO, CORN, ETC.)
20993	0.530	1673	20993	SWEETENING SIRUPS AND MOLASSES
20994	0.890	826	20994	BAKING POWDER AND YEAST
20995	0.790	3598	20995	TEA IN CONSUMER PACKAGES
20996	0.480	806	20996	VINEGAR AND CIDER
20999	0.240	13589	20999	OTHER FOOD PREPARATIONS, N.E.C.
21110	0.840	35894	21110	CIGARETTES
21210	0.535	3573	21210	CIGARS
21310	0.551	2575	21310	CHEWING AND SMOKING TOBACCO AND SNUFF
21410	0.556	13358	21411	TOBACCO, REDRIED
			21412	TOBACCO, STEMMED
22110	0.233	62888	22110	OTHER FABRICATED COTTON TEXTILE PRODUCTS
			22111	GRAY GOODS: COTTON DUCK AND ALLIED FABRICS
			22112	GRAY GOODS: COTTON SHEETING AND ALLIED FABRICS
			22113	GRAY GOODS: COTTON PRINT CLOTH YARN FABRICS
			22114	GRAY GOODS: COTTON COLORED YARN FABRICS, TOWELING AND DISHCLOTH FABRICS AND NAPPED COTTON FABRICS, INCLUDING BLANKETING
			22115	GRAY GOODS: FINE COTTON GOODS
			22116	GRAY GOODS: OTHER BROADWOVEN COTTON FABRICS AND SPECIALTIES
			22117	FINISHED COTTON BROADWOVEN FABRICS MADE IN WEAVING MILLS
			22118	COTTON SHEETS AND PILLOWCASES MADE IN WEAVING MILLS
			22119	COTTON SHEETS AND PILLOWCASES MADE IN WEAVING MILLS, MANMADE
22210	0.249	62888	22210	WEAVING MILLS, MANMADE FIBER AND SILK, N.S.K.
			22211	GRAY GOODS: 100 PERCENT FILAMENT RAYON AND/OR ACETATE FABRICS, INCLUDING COMBINATIONS CHIEFLY RAYON AND/OR ACETATE
			22212	GRAY GOODS: 100 PERCENT FILAMENT FABRICS, EXCEPT RAYON AND/OR ACETATE
			22213	GRAY GOODS: 100 PERCENT SPUN RAYON AND/OR ACETATE FABRICS INCLUDING BLENDS
			22214	GRAY GOODS: 100 PERCENT SPUN POLYESTER BLENDS WITH COTTON
			22215	GRAY GOODS: ALL OTHER 100 PERCENT SPUN NONCELLULOSIC FABRICS

NEW SIC	4-FIRM CR WEISS	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
			22216	GRAY GOODS: COMBINATIONS OF FILAMENT AND SPUN YARN FABRICS, CHIEFLY MANMADE FIBERS
			22217	GRAY GOODS: BLANKETING, SILK, PAPER, AND OTHER SPECIALTY MANMADE FIBER FABRICS
			22218	FINISHED MANMADE FIBER AND SILK BROADWOVEN FABRICS, MADE IN WEAVING MILLS
			22219	FABRICATED MANMADE FIBER AND SILK TEXTILE PRODUCTS (MADE IN WEAVING MILLS). (SEE ALSO 22118 AND 23928.)
22310	0.307	4407	22311	FINISHED WOOL YARN, TOPS OR RAW STOCK, NOT COMBED OR SPUN AT SAME ESTABLISHMENT
			22312	WOOL FABRICS (GRAY GOODS)
			22313	FINISHED WOOL APPAREL FABRICS
			22314	FINISHED WOOL NONAPPAREL FABRICS AND FELTS
			22319	WOOL AND CHIEFLY WOOL BLANKETS
22410	0.172	5215	22411	WOVEN NARROW FABRICS
			22414	BRAIDED NARROW FABRICS
			22415	COVERED RUBBER THREAD
22510	0.337	8990	22511	WOMEN'S FINISHED FULL-FASHIONED STOCKINGS
			22513	WOMEN'S FINISHED SEAMLESS HOSIERY, FULL-LENGTH AND KNEE-LENGTH
			22514	WOMEN'S FULL-FASHIONED HOSIERY SHIPPED IN THE GREIGE
			22515	WOMEN'S SEAMLESS FULL-LENGTH AND KNEE-LENGTH HOSIERY SHIPPED IN THE GREIGE
22520	0.207	5880	22522	MEN'S FINISHED SEAMLESS HOSIERY
			22523	ALL OTHER FINISHED SEAMLESS HOSIERY
			22524	SEAMLESS HOSIERY (EXCEPT WOMEN'S FULL-LENGTH AND KNEE-LENGTH) SHIPPED IN THE GREIGE
22530	0.117	15711	22531	SWEATERS, KNIT JACKETS, AND JERSEYS (MADE FROM YARNS OR FABRICS KNIT IN THE SAME ESTABLISHMENT). (SEE ALSO 23292, 23393, AND 23690.)
			22532	KNIT OUTERWEAR SPORT SHIRTS (MADE FROM YARNS OR FABRICS KNIT IN THE SAME ESTABLISHMENT). (SEE ALSO 23212, 23312 AND 23612.)
			22533	ALL OTHER KNIT OUTERWEAR PRODUCTS (MADE FROM YARNS OR FABRICS KNIT IN THE SAME ESTABLISHMENT). (SEE ALSO 23292, 23393 AND 2369 .)
			22539	CONTRACT AND COMMISSION RECEIPTS FOR KNITTING AND/OR DYEING KNIT OUTERWEAR PRODUCTS
22540	0.438	4815	22541	MEN'S AND BOYS' KNIT UNDERWEAR AND NIGHTWEAR (MADE FROM YARNS OR FABRICS KNIT IN THE SAME ESTABLISHMENT). (SEE ALSO 23215 AND 23221.)
			22542	WOMEN'S AND CHILDREN'S KNIT UNDERWEAR
			22543	WOMEN'S AND CHILDREN'S KNIT NIGHTWEAR
22570	0.192	27702	22571	GREIGE GOODS, EXCEPT HOSIERY
			22572	UNDERWEAR AND NIGHTWEAR FINISHED FABRIC
			22573	OUTERWEAR FINISHED FABRIC
			22574	HIGH PILE FINISHED FABRIC
			22576	ALL OTHER CIRCULAR KNIT FINISHED FABRIC
			22579	CONTRACT AND COMMISSION RECEIPTS FOR KNITTING AND/OR DYEING CIRCULAR KNIT FABRIC

NEW SIC	4-FIRM CR WEISS	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
22580	0.250	9286	22580	WARP KNIT FABRIC MILLS, N.S.K.
			22581	GREIGE GOODS, EXCEPT HOSIERY
			22582	UNDERWEAR AND NIGHTWEAR FINISHED FABRIC
			22583	OUTERWEAR FINISHED FABRIC
			22584	ALL OTHER FINISHED WARP KNIT FABRIC
			22589	CONTRACT AND COMMISSION RECEIPTS FOR KNITTING AND/OR DYEING WARP KNIT FABRIC
22590	0.400	850	22590	KNIT GLOVES AND KNIT PRODUCTS, N.E.C., MADE FROM YARNS OR FABRICS KNIT IN THE SAME ESTABLISHMENT. (SEE ALSO 23811 AND 23812).
22610	0.388	11513	22617	FINISHED COTTON BROADWOVEN FABRICS NOT MADE IN WEAVING MILLS
			22619	COMMISSION FINISHING OF COTTON BROADWOVEN FABRICS
22620	0.352	17907	22628	MANMADE FIBER AND SILK BROADWOVEN FABRIC FINISHING, NOT FINISHED IN WEAVING MILLS
			22629	COMMISSION FINISHING OF MANMADE FIBER AND SILK BROADWOVEN FABRICS
22690	0.340	5228	22690	FINISHED YARN, RAW STOCK AND NARROW FABRICS, EXCEPT KNIT AND WOOL (NOT SPUN, THROWN, WOVEN, OR BRAIDED IN SAME ESTABLISHMENT). (SEE ALSO 22811, 22812, AND 22814.)
22710	0.540	2025	22710	WOVEN CARPETS AND RUGS
22720	0.210	26258	22720	TUFTED CARPETS AND RUGS
22790	0.318	1165	22790	CARPETS, RUGS, AND MATS, N.E.C.
22810	0.197	28593	22810	YARN MILLS, EXCEPT WOOL, N.S.K.
			22811	CARDED COTTON YARNS. (SEE ALSO PRODUCT CLASS 22690.)
			22812	COMBED COTTON YARNS. (SEE ALSO PRODUCT CLASS 22690.)
			22813	RAYON AND/OR ACETATE SPUN YARNS. (SEE ALSO PRODUCT CLASS 22690).
			22814	SPUN NONCELLULOSIC FIBER AND SILK YARNS. (SEE ALSO PRODUCT CLASS 22690.)
22820	0.318	17488	22822	REWOUND, PLIED, ETC., YARNS, OTHER THAN WOOL (NOT SPUN OR THROWN AT SAME ESTABLISHMENT)
			22823	THROWN FILAMENT YARNS, EXCEPT TEXTURED
			22824	TEXTURED, CRIMPED, OR BULKED FILAMENT YARNS
			22829	COMMISSION THROWING, PLYING, ETC. OF YARNS
22830	0.294	2227	22831	WOOL YARNS, EXCEPT YARNS, INCLUDING YARNS SPUN AND FINISHED AT SAME ESTABLISHMENT
			22832	WOOL YARNS, CARPET
22840	0.561	3403	22841	FINISHED THREAD FOR USE IN THE HOME
			22842	FINISHED THREAD FOR INDUSTRIAL OR MANUFACTURES' USE
			22843	UNFINISHED THREAD

NEW SIC	4-FIRM CR WEISS	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
22910	0.497	1308	22910	PRESSED, PUNCHED, OR NEEDLED FELTS, EXCEPT HATS
22920	0.200	398	22920	LACE AND NET GOODS
22930	0.238	1543	22930	PADDINGS AND UPHOLSTERY FILLING
22940	0.454	1242	22940	PROCESSED TEXTILE WASTE
22950	0.306	8086	22951	PYROXYLIN-COATED FABRICS
			22952	VINYL COATED FABRICS
			22953	OTHER COATED FABRICS
22960	0.797	6208	22960	TIRE CORD AND TIRE FABRICS
22970	0.426	5176	22971	NONWOVEN FABRICS
			22972	FABRICATED NONWOVEN PRODUCTS
22980	0.235	1747	22981	HARD FIBER CORDAGE AND TWINE
			22982	SOFT FIBER CORDAGE AND TWINE (EXCEPT COTTON)
			22983	COTTON CORDAGE AND TWINE
22990	0.000	1334	22990	TEXTILE GOODS, N.S.K.
22992	0.680	210	22992	JUTE GOODS (EXCEPT JUTE FELTS,CORDAGE OR TWINE) AND LINEN GOODS
22993	0.920	600	22993	SCOURING AND COMBING MILL PRODUCT
23110	0.181	22308	23111	MEN'S SUITS
			23112	MEN'S OVERCOATS AND TOPCOATS
			23113	MEN'S TAILORED DRESS AND SPORT COATS AND JACKETS
			23119	CONTRACT AND COMMISSION WORK ON MEN'S AND BOYS' SUITS AND COATS
23210	0.176	19629	23212	MEN'S AND BOYS' KNIT OUTERWEAR SPORT SHIRTS, MADE FROM PURCHASED KNIT FABRICS. (SEE ALSO 22532.)
			23214	MEN'S AND BOYS' DRESS AND SPORT SHIRTS EXCEPT KNIT OUTERWEAR SPORT SHIRTS
			23215	MEN'S AND BOYS' NIGHTWEAR, MADE OF WOVEN OR PURCHASED KNIT FABRICS. (SEE ALSO 22541.)
			23219	CONTRACT AND COMMISSION WORK ON MEN'S AND BOYS' SHIRTS (EXCEPT WORK) AND NIGHTWEAR
23220	0.485	2323	23221	MEN'S AND BOYS' UNDERWEAR, MADE FROM WOVEN OR PURCHASED KNIT FABRICS. (SEE ALSO 22541.)
23230	0.250	2793	23230	MEN'S, YOUTHS', AND BOYS' NECKWEAR
23270	0.242	17759	23271	MEN'S AND BOYS' SEPARATE DRESS AND SPORT TROUSERS DRESS SHORTS

NEW SIC	4-FIRM CR WEISS	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
			23279	CONTRACT AND COMMISSION WORK ON MEN'S AND BOYS' SEPARATE DRESS AND SPORT TROUSERS
.23280	0.377	16248	23281	MEN'S AND BOYS' WORK SHIRTS
			23282	MEN'S AND BOYS' WORK CLOTHING (EXCEPT SHIRTS) AND WASHABLE SERVICE APPAREL
			23289	CONTRACT AND COMMISSION WORK ON MEN'S AND BOYS' WORK CLOTHING
23290	0.140	7465	23291	MEN'S AND BOYS' HEAVY OUTERWEAR COATS AND JACKETS, NONTAILORED
			23292	MEN'S AND BOYS' OUTERWEAR, N.E.C., MADE FROM WOVEN OR PURCHASED KNIT FABRICS. (SEE ALSO 22531 AND 22533.)
23310	0.086	12788	23312	WOMEN'S, MISSES, AND JUNIORS' KNIT OUTERWEAR SPORT SHIRTS, MADE FROM PURCHASED KNIT FABRICS. (SEE ALSO 22532.)
			23317	WOMEN'S, MISSES', AND JUNIORS' BLOUSES AND SHIRTS, EXCEPT KNIT OUTERWEAR SPORT SHIRTS
			23319	CONTRACT AND COMMISSION WORK ON WOMEN'S, MISSES', AND JUNIORS' BLOUSES AND SHIRTS
23350	0.089	35362	23350	WOMEN'S AND MISSES' DRESSES, N.S.K.
			23351	WOMEN'S, MISSES', AND JUNIORS' DRESSES SOLD AT A UNIT PRICE
			23352	WOMEN'S, MISSES', AND JUNIORS' DRESSES SOLD AT A DOZEN PRICE
			23359	CONTRACT AND COMMISSION WORK ON WOMEN'S, MISSES', AND JUNIORS' DRESSES
23370	0.058	17255	23371	WOMEN'S, MISSES', AND JUNIORS' COATS (EXCEPT FUR AND LEATHER)
			23372	WOMEN'S, MISSES', AND JUNIORS' SUITS
			23374	WOMEN'S, MISSES, AND JUNIORS' SKIRTS AND JACKETS
			23379	CONTRACT AND COMMISSION WORK ON WOMEN'S, MISSES', AND JUNIORS SUITS, COATS, AND SKIRTS
23390	0.133	16481	23390	WOMEN'S AND MISSES' OUTERWEAR, N.E.C., N.S.K.
			23392	WOMEN'S, MISSES', AND JUNIORS' WASHABLE SERVICE APPAREL
			23393	WOMEN'S, MISSES', AND JUNIORS' OUTERWEAR, N.E.C. (SEE ALSO 22531 AND 22533.)
			23399	CONTRACT AND COMMISSION WORK ON WOMEN'S, MISSES', AND JUNIORS' OUTERWEAR, N.E.C.
23410	0.138	12887	23412	WOMEN'S AND CHILDREN'S UNDERWEAR
			23413	WOMEN'S AND CHILDREN'S NIGHTWEAR
			23419	CONTRACT AND COMMISSION WORK ON WOMEN'S AND CHILDREN'S UNDERWEAR AND NIGHTWEAR
23420	0.328	6795	23421	BRASSIERES
			23422	CORSETS, GIRDLES, COMBINATIONS, AND ACCESSORIES
23510	0.149	587	23510	MILLINERY
23520	0.214	1475	23521	HATS AND HAT BODIES (EXCEPT CLOTH AND MILLINERY)
			23522	CLOTH HATS AND CAPS
23610	0.120	6547	23610	CHILDREN'S AND INFANTS' DRESSES, BLOUSES AND SHIRTS, EXCEPT KNIT SPORT SHIRTS
			23612	CHILDREN'S AND INFANTS' KNIT SPORT SHIRTS, MADE FROM PURCHASED KNIT FABRICS.

NEW SIC	4-FIRM CR WEISS	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
				(SEE ALSO 22532.)
			23619	CONTRACT AND COMMISSION WORK ON CHILDREN'S AND INFANTS' DRESSES, BLOUSES, AND SHIRTS
23630	0.153	1725	23630	CHILDREN'S AND INFANTS' COATS, SUITS, SNOWSUITS, AND COAT-AND-LEGING SETS
23690	0.127	6231	23690	CHILDREN'S AND INFANTS' OUTERWEAR, N.E.C., MADE FROM WOVEN OR PURCHASED KNIT FABRIC. (SEE ALSO 22531 AND 22533.)
			23699	CONTRACT AND COMMISSION WORK ON CHILDREN'S AND INFANTS' OUTERWEAR, N.E.C.
23710	0.067	2136	23710	FUR GOODS
23810	0.319	1717	23811	DRESS GLOVES AND MITTENS, MADE FROM WOVEN OR PURCHASES KNIT FABRICS. (SEE ALSO 22590.)
			23812	WORK GLOVES AND MITTENS, MADE FROM WOVEN OR PURCHACED KNIT FABIRCS. (SEE ALSO 22590.)
23840	0.228	1696	23840	ROBES AND DRESSING GOWNS, EXCEPT CHILDREN'S
23850	0.242	3216	23850	RAINCOATS AND OTHER WATERPROOF OUTERGARMENTS
23860	0.100	1735	23860	LEATHER AND SHEEP LINED CLOTHING
23870	0.196	2341	23871	LEATHER BELTS (FOR SALE SEPARATELY)
			23872	BELTS, OTHER THAN LEATHER
23890	0.215	1232	23890	APPAREL, N.E.C.
23910	0.280	6262	23910	CURTAINS AND DRAPERIES, EXCEPT LACE
23920	0.222	14423	23920	OTHER HOUSEFURNISHINGS
			23926	BEDSPREADS AND BEDSETS, NOT MADE IN WEAVING MILLS, (SEE ALSO 22110.)
			23928	SHEETS AND PILLOWCASES, NOT MADE IN WEAVING MILLS
			23929	TOWELS AND WASHCLOTHS NOT MADE IN WEAVING MILLS
23930	0.239	2315	23930	TEXTILE BAGS, EXCEPT LAUNDRY, WARDROBE, AND SHOE
23940	0.204	2721	23940	CANVAS PRODUCTS
23950	0.190	2618	23951	EMBROIDERIES (EXCEPT SCHIFFLI MACHINE PRODUCTS), STAMPED ART GOODS, AND ART NEEDLEWORK
23961	0.520	942	23961	MEN'S AND BOYS' SUIT AND COAT FINDINGS, HATTERS' FUR, AND OTHER HAT AND CAP MATERIAL
23962	0.000	8231	23962	AUTOMOBILE AND FURNITURE TRIMMINGS
			23963	OTHER TRIMMINGS AND FINDINGS

NEW SIC	4-FIRM CR WEISS	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
23970	0.199	991	23970	SCHIFFLI MACHINE EMBROIDERIES
23990	0.212	7339	23990	FABRICATED TEXTILE PRODUCTS, N.E.C.
24110	0.266	26014	24110	LOGS, BOLTS, AND PULPWOOD
			24119	RECEIPTS FOR CONTRACT LOGGING
24210	0.140	60476	24210	SAWMILL AND PLANING MILL PRODUCTS, N.S.K.
			24211	HARDWOOD LUMBER, ROUGH AND DRESSED
			24212	SOFTWOOD LUMBER, ROUGH AND DRESSED
			24215	WOOD CHIPS
			24217	SOFTWOOD CUT STOCK
			24218	SOFTWOOD FLOORING AND OTHER GENERAL SAWMILL AND PLANING MILL PRODUCTS
			24219	CONTRACT OR CUSTOM SAWING OF LOGS OWNED BY OTHERS
24260	0.104	5715	24261	HARDWOOD FLOORING
			24262	HARDWOOD DIMENSION STOCK, FURNITURE PARTS, AND VEHICLE STOCK
			24266	WOOD FRAMES FOR HOUSEHOLD FURNITURE
24290	0.174	1757	24290	SHINGLES, COOPERAGE STOCK, AND EXCELSIOR
24310	0.089	22297	24310	MILLWORK PRODUCTS, N.S.K.
			24311	WINDOW UNITS, WOOD
			24312	WOOD WINDOW SASH, INCLUDING COMBINATION SCREEN AND STORM SASH, EXCLUDING WINDOW SCREENS AND WINDOW UNITS
			24313	WOOD WINDOW AND DOOR FRAMES
			24314	DOORS, WOOD, INTERIOR AND EXTERIOR (INCLUDING THOSE SHIPPED WITH GLAZED SECTIONS AND DOORS SHIPPED IN DOOR UNITS)
			24315	OTHER WOOD DOORS, INCLUDING GARAGE, SCREEN, STORM, AND COMBINATION SCREEN AND STORM, AND LOUVRE
			24316	WOOD MOULDINGS, EXCEPT PREFINISHED MOULDINGS, MADE FROM PURCHASED MOULDINGS
			24317	PREFINISHED WOOD MOULDINGS, MADE FROM PURCHASED MOULDINGS
			24318	OTHER MILLWORK PRODUCTS, INCLUDING WINDOW SCREENS AND ARCHITECTURAL MILLWORK
24340	0.117	8584	24341	WOOD KITCHEN CABINETS, STOCK LINE
			24342	WOOD KITCHEN CABINETS, CUSTOM
			24343	VANITIES AND OTHER CABINETWORK
24350	0.198	8732	24350	HARDWOOD VENEER AND PLYWOOD, N.S.K.
			24351	HARDWOOD PLYWOOD
			24352	PREFINISHED HARDWOOD PLYWOOD, MADE FROM PURCHASED PLYWOOD
			24353	OTHER HARDWOOD PLYWOOD-TYPE PRODUCTS
			24354	HARDWOOD VENEER
24360	0.359	19417	24361	SOFTWOOD PLYWOOD, INTERIOR TYPE
			24362	SOFTWOOD PLYWOOD, EXTERIOR TYPE

NEW SIC	4-FIRM CR WEISS	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
			24363	OTHER SOFTWOOD PLYWOOD-TYPE PRODUCTS
			24364	SOFTWOOD VENEER
24390	0.470	4555	24390	STRUCTURAL WOOD PRODUCTS
24410	0.228	2328	24411	NAILED OR LOCK-CORNER WOODEN BOXES
			24412	BOX SHOOK FOR FRUITS, VEGETABLES, AND INDUSTRIAL USES
24480	0.060	2874	24480	PALLETS AND SKIDS
24490	0.218	2189	24491	WIREBOUND BOXES MADE FROM LUMBER VENEER, AND PLYWOOD
			24493	VENEER AND PLYWOOD CONTAINERS, EXCEPT BOXES AND CRATES
			24495	SLACK AND TIGHT COOPERAGE
24510	0.270	31909	24510	MOBILE HOMES, N.S.K.
			24511	MOBILE HOMES (35 FEET OR MORE IN LENGTH)
			24512	MOBILE BUILDINGS, NONRESIDENTIAL (35 FEET OR MORE IN LENGTH)
24520	0.470	10019	24520	PREFABRICATED WOOD BUILDINGS, N.S.K.
			24521	PREFABRICATED WOOD BUILDINGS, COMPONENTS FOR STATIONARY BUILDINGS (NOT SOLD AS COMPLETE UNITS)
			24522	PRECUT PACKAGES FOR STATIONARY BUILDINGS (SOLD AS COMPLETE UNITS)
			24523	STATIONARY BUILDINGS SOLD AS COMPLETE UNITS AND SHIPPED IN PANEL FORM (TWO-DIMENSIONAL)
			24524	STATIONARY BUILDINGS SHIPPED IN THREE-DIMENSIONAL ASSEMBLIES
24910	0.350	4613	24911	WOOD OWNED AND TREATED BY SAME ESTABLISHMENT
			24919	CONTRACT WOOD PRESERVING
24920	0.447	2928	24920	PARTICLEBOARD
24991	0.370	1730	24991	MIRROR AND PICTURE FRAMES
24994	0.630	181	24994	CORK PRODUCTS
24995	0.170	7016	24995	WOOD PRODUCTS, N.E.C.
24996	0.530	2585	24996	FABRICATED HARDBOARD PRODUCTS, MADE FROM HARDBOARD PRODUCED AT THE SAME ESTABLISHMENT
25110	0.202	27168	25110	WOOD HOUSEHOLD FURNITURE, N.S.K.
			25112	WOOD LIVING ROOM, LIBRARY, SUNROOM, AND HALL FURNITURE, EXCEPT SEWING MACHINE CABINETS
			25113	WOOD DINING ROOM AND KITCHEN FURNITURE, EXCEPT CABINETS
			25115	WOOD BEDROOM FURNITURE
			25116	INFANTS' AND CHILDREN'S WOOD FURNITURE
			25117	WOOD OUTDOOR FURNITURE AND UNPAINTED WOOD FURNITURE

NEW SIC	4-FIRM CR WEISS	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
25120	0.287	19905	25120	UPHOLSTERED WOOD HOUSEHOLD FURNITURE
25140	0.289	8593	25141	METAL HOUSEHOLD, DINING, AND BREAKFAST FURNITURE
			25142	METAL KITCHEN FURNITURE
			25143	METAL PORCH, LAWN, AND OUTDOOR FURNITURE
			25144	OTHER METAL HOUSEHOLD FURNITURE
25150	0.356	10796	25151	INNERSPRING MATTRESSES, OTHER THAN CRIB SIZE
			25152	OTHER MATTRESSES, INCLUDING CRIB MATTRESSES
			25153	BEDSPRINGS
			25154	CONVERTIBLE SOFAS
			25155	JACKKNIFE SOFA BEDS AND CHAIR BEDS
			25156	STUDIO COUCHES
25170	0.325	2930	25170	WOOD TELEVISION, RADIO, STEREO, AND SEWING MACHINE CABINETS
25190	0.134	1903	25190	HOUSEHOLD FURNITURE, N.E.C.
25210	0.220	10404	25210	WOOD OFFICE FURNITURE
25220	0.441	10404	25220	METAL OFFICE FURNITURE, N.S.K.
			25221	METAL OFFICE SEATING, INCLUDING UPHOLSTERED
			25222	DESKS
			25223	CABINETS AND CASES
			25224	OTHER METAL OFFICE FURNITURE, INCLUDING TABLES, STANDS, ETC.
25310	0.172	4968	25311	SCHOOL FURNITURE, EXCEPT STONE AND CONCRETE
			25312	PUBLIC BUILDING AND RELATED FURNITURE, EXCEPT SCHOOL FURNITURE
25410	0.048	14853	25410	WOOD PARTITIONS AND FIXTURES, N.S.K.
			25411	WOOD PARTITIONS, SHELVING, AND LOCKERS
			25412	PLASTIC LAMINATED FIXTURE TOPS
			25413	WOOD FIXTURES FOR STORES, BANKS, OFFICES, AND OTHER MISCELLANEOUS FIXTURES
25420	0.125	14853	25420	METAL PARTITIONS AND FIXTURES, N.S.K.
			25421	METAL PARTITIONS
			25422	METAL SHELVING AND LOCKERS
			25423	METAL STORAGE RACKS AND ACCESSORIES
			25424	METAL FIXTURES FOR STORES, BANKS, OFFICES AND MISCELLANEOUS FIXTURES
25910	0.460	3113	25911	WINDOW SHADES AND ACCESSORIES
			25912	VENETIAN BLINDS
25990	0.115	3799	25990	FURNITURE AND FIXTURES, N.E.C.
26110	0.259	11324	26111	SPECIAL ALPHA AND DISSOLVING WOODPULP

NEW SIC	4-FIRM CR WEISS	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
			26112	OTHER PULP (INCLUDING WOOD) AND PULPMILL BYPRODUCTS, EXCEPT TALL OIL
26210	0.209	61822	26210	TISSUE PAPER AND OTHER MACHINE-CREPED PAPER
			26211	NEWSPRINT
			26212	GROUNDWOOD PAPER, UNCOATED
			26213	COATED PRINTING AND CONVERTING PAPER
			26214	BOOK PAPER, UNCOATED
			26215	BLEACHED BRISTOLS (EXCLUDING COTTON FIBER INDEX AND BOGUS)
			26216	WRITING AND RELATED PAPERS
			26217	UNBLEACHED KRAFT PACKAGING AND INDUSTRIAL CONVERTING PAPER
			26218	PACKAGING AND INDUSTRIAL CONVERTING PAPER EXCEPT UNBLEACHED KRAFT
			26219	SPECIAL INDUSTRIAL PAPER
26310	0.260	36574	26310	PAPERBOARD MILL PRODUCTS, N.S.K.
			26311	UNBLEACHED KRAFT PACKAGING AND INDUSTRIAL CONVERTING PAPERBOARD
			26312	BLEACHED PACKAGING AND INDUSTRIAL CONVERTING PAPERBOARD
			26313	SEMICHEMICAL PAPERBOARD
			26314	COMBINATION FURNISH PAPERBOARD
			26318	WET MACHINE BOARD
26410	0.000	513	26410	PAPER COATING AND GLAZING, N.S.K.
26411	0.560	1118	26411	PRINTING PAPER COATED AT ESTABLISHMENTS OTHER THAN WHERE THE PAPER WAS PRODUCED
26412	0.430	1532	26412	OILED, WAXED, AND WAX-LAMINATED PAPER, PLAIN OR PRINTED
26413	0.300	1392	26413	GUMMED PRODUCTS
26414	0.590	5745	26414	PRESSURE SENSITIVE TAPE
26417	0.350	3569	26417	LAMINATED OR COATED ROLLS AND SHEETS, FOR PACKAGING USES, EXCEPT WAXED
26418	0.400	2636	26418	OTHER COATED AND PROCESSED PAPER, EXCEPT FOR PACKAGING USES AND EXCEPT WAXED
26420	0.270	5872	26420	ENVELOPES, ALL TYPES AND MATERIALS (EXCLUDING STATIONERY ENVELOPES)
26430	0.210	18294	26431	GROCERS' AND VARIETY BAGS (PAPER), AND WARDROBE,SHOPPING AND OTHER BAGS
			26432	SPECIALTY BAGS AND LINERS
			26433	SHIPPING SACKS AND MULTIWALL BAGS
26450	0.370	6459	26450	DIE-CUT PAPER AND BOARD, N.S.K.
			26451	OFFICE SUPPLIES (FILING ACCESSORIES) AND MISCELLANEOUS PRODUCTS
			26452	PASTED, LINED, LAMINATED, OR SURFACE-COATED PAPERBOARD
26461	1.000	213	26461	BITUMINOUS FIBER PIPE, SEWER, AND DRAINAGE, CONDUIT AND FITTINGS-MOLDED PULP OR PAPIER-MACHE

NEW SIC	4-FIRM CR WEISS	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
26462	0.880	1363	26462	OTHER PRESSED AND MOLDED PULP GOODS
26471	0.910	2811	26471	SANITARY NAPKINS AND TAMPONS
26472	0.700	16927	26472	SANITARY TISSUE HEALTH PRODUCTS
26480	0.260	4215	26480	STATIONERY PRODUCTS, N.S.K.
			26481	STATIONERY
			26482	TABLETS AND RELATED PRODUCTS
26492	0.520	1812	26492	WRAPPING PRODUCTS (GIFT WRAP, ETC.)
26493	0.490	830	26493	WALLPAPER
26495	0.150	3910	26495	OTHER CONVERTED PAPER AND BOARD PRODUCTS
26510	0.420	13721	26510	BENDING PAPERBOARD PACKAGING AND PACKAGING COMPONENTS, INCLUDING DIE-CUT, NONFOLDED PACKAGING ITEMS, FOR PRODUCTS EXCEPT LIQUID, MOIST, OILY, OR PERISHABLE FOODS
26520	0.310	3426	26520	SETUP PAPERBOARD BOXES
26530	0.310	41969	26530	CORRUGATED AND SOLID FIBER BOXES, INCLUDING PALLETS
26540	0.000	147	26540	SANITARY FOOD CONTAINERS, N.S.K.
26541	0.790	3315	26541	MILK AND OTHER BEVERAGE CARTONS
26542	0.770	4437	26542	CUPS AND LIQUID-TIGHT CONTAINERS
26543	0.280	5915	26543	OTHER SANITARY FOOD CONTAINERS, BOARDS, AND TRAYS
26550	0.520	6200	26551	PAPERBOARD FIBER DRUMS WITH METAL, WOOD OR PAPERBOARD ENDS
			26552	FIBER CANS, TUBES, AND SIMILAR FIBER PRODUCTS
26610	0.466	4019	26611	INSULATING BOARD
			26612	CONSTRUCTION PAPER
27110	0.679	79084	27111	DAILY AND SUNDAY NEWSPAPERS, RECEIPTS FROM SUBSCRIPTIONS AND SALES
			27112	DAILY AND SUNDAY NEWSPAPERS, RECEIPTS FROM ADVERTISING
			27113	WEEKLY AND OTHER NEWSPAPERS, RECEIPTS FROM SUBSCRIPTIONS AND SALES
			27114	WEEKLY AND OTHER NEWSPAPERS, RECEIPTS FROM ADVERTISING
27211	0.380	759	27211	FARM PERIODICALS, RECEIPTS FROM SUBSCRIPTIONS AND SALES
			27212	FARM PERIODICALS, RECEIPTS FROM ADVERTISING
27213	0.280	9101	27213	SPECIALIZED BUSINESS AND PROFESSIONAL PERIODICALS, RECEIPTS FROM SUBSCRIPTIONS AND SALES

NEW SIC	4-FIRM CR WEISS	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
			27214	SPECIALIZED BUSINESS AND PROFESSIONAL PERIODICALS,RECEIPTS FROM ADVERTISING
27215	0.380	17285	27215	GENERAL PERIODICALS, RECEIPTS FROM SUBSCRIPTIONS AND SALES
			27216	GENERAL PERIODICALS, RECEIPTS FROM ADVERTISING
27217	0.280	2821	27217	OTHER PERIODICALS, EXCEPT SHOPPING NEWS, DIRECTORIES, OR CATALOGS, N.E.C.
27311	0.330	8096	27311	TEXT BOOKS, INCLUDING TEACHERS' EDITIONS
27313	0.390	4030	27313	TECHNICAL, SCIENTIFIC, AND PROFESSIONAL BOOKS
27314	0.360	1312	27314	RELIGIOUS BOOKS
27315	0.290	10067	27315	GENERAL BOOKS (TRADE, ETC.)
27317	0.710	2353	27317	GENERAL REFERENCE BOOKS
27318	0.540	1254	27318	OTHER BOOKS (EXCLUDING PAMPHLETS)
27319	0.620	487	27319	PAMPHLETS
27320	0.190	10499	27321	BOOKS, PRINTING ONLY, LITHOGRAPHIC
			27322	BOOKS, PRINTING AND BINDING, LITHOGRAPHIC
			27323	PAMPHLETS, WORKBOOKS, STANDARDIZED AND OBJECTIVE TESTS, PRINTING ONLY, LITHOGRAPHIC
			27324	PAMPHLETS, WORKBOOKS STANDARDIZED AND OBJECTIVE TESTS, PRINTING AND BINDING, LITHOGRAPHIC
			27326	BOOKS, PRINTING AND BINDING, OTHER THAN LITHOGRAPHIC
27410	0.524	10583	27411	CATALOGS AND DIRECTORIES, PUBLISHING
			27412	BUSINESS SERVICE PUBLICATIONS
			27413	OTHER MISCELLANEOUS PUBLISHING
27510	0.179	83251	27510	COMMERCIAL PRINTING, LETTERPRESS, N.S.K.
			27511	MAGAZINE AND PERIODICAL PRINTING (LETTERPRESS)
			27512	LABELS AND WRAPPERS PRINTING (LETTERPRESS)
			27513	CATALOGS AND DIRECTORIES PRINTING (LETTERPRESS)
			27514	FINANCIAL AND LEGAL PRINTING (LETTERPRESS)
			27515	ADVERTISING PRINTING (LETTERPRESS)
			27516	OTHER GENERAL JOB PRINTING (LETTERPRESS)
			27519	SCREEN PROCESS PRINTING, EXCEPT TEXTILES
			27520	COMMERCIAL PRINTING, LITHOGRAPHIC, N.S.K.
			27521	MAGAZINE AND PERIODICAL PRINTING (LITHOGRAPHIC)
			27522	LABELS AND WRAPPERS PRINTING (LITHOGRAPHIC)
			27523	CATALOGS AND DIRECTORS PRINTING (LITHOGRAPHIC)
			27524	FINANCIAL AND LEGAL PRINTING (LITHOGRAPHIC)
			27525	ADVERTISING PRINTING (LITHOGRAPHIC)

NEW SIC	4-FIRM CR WEISS	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
			27526	OTHER GENERAL JOB PRINTING (LITHOGRAPHIC)
27530	0.230	2050	27530	ENGRAVING AND PLATE PRINTING (EXCEPT PHOTOENGRAVING)
27540	0.368	7951	27540	COMMERCIAL PRINTING, GRAVURE, N.S.K.
			27541	PUBLICATION PRINTING, GRAVURE
			27542	LABELS, WRAPPERS AND WRAP PRINTING, GRAVURE
			27543	ADVERTISING PRINTING, GRAVURE
			27544	OTHER COMMERCIAL PRINTING, GRAVURE
			27545	GRAVURE PLATES AND CYLINDERS
27610	0.430	13819	27610	MANIFOLD BUSINESS FORMS, N.S.K.
			27612	UNIT-SET FORMS
			27613	SALES AND OTHER MANIFOLD BOOKS
			27615	CUSTOM CONTINUOUS FORMS WITH OR WITHOUT CARBON, MARGINALLY PUNCHED OR NOT MARGINALLY PUNCHED
			27617	STOCK CONTINUOUS FORMS
27710	0.636	5835	27711	GREETING CARDS, PUBLISHERS' SALES
			27712	GREETING CARDS, PRINTED FOR PUBLICATION BY OTHERS
27820	0.354	5662	27821	BLANKBOOK MAKING
			27822	LOOSELEAF BINDERS AND DEVICES
27890	0.110	3692	27891	EDITION, LIBRARY, AND OTHER HARD COVER BOOKBINDING
			27892	OTHER BOOK AND PAMPHLET BINDING AND RELATED BINDING WORK
27910	0.320	5087	27910	TYPESETTING
27930	0.380	2213	27930	PHOTOENGRAVING PLATES MADE FOR OTHERS
27940	0.630	355	27940	ELECTROTYPING AND STEREOTYPING DUPLICATE PLATES MADE FOR OTHERS
27950	0.170	2630	27951	LITHOGRAPHIC PLATES
			27952	LITHOGRAPHIC SERVICES
28121	0.460	2102	28121	CHLORINE COMPRESSED OR LIQUEFIED
28122	0.000	1476	28122	SODIUM CARBONATE (SODA ASH)
28123	0.550	4109	28123	SODIUM HYDROXIDE (CAUSTIC SODA)
28124	0.710	337	28124	OTHER ALKALIES
28130	0.747	6591	28132	ACETYLENE
			28133	CARBON DIOXIDE
			28134	ELEMENTAL GASES AND COMPRESSED AND LIQUEFIED GASES, N.E.C.

NEW SIC	4-FIRM CR WEISS	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
28160	0.466	7562	28161	TITANIUM PIGMENTS
			28162	OTHER WHITE OPAQUE PIGMENTS
			28163	CHROME COLORS AND OTHER INORGANIC PIGMENTS
28190	0.000	225	28190	INDUSTRIAL INORGANIC CHEMICALS, N.S.K.
28193	0.550	2454	28193	SULFURIC ACID
28194	0.560	1604	28194	INORGANIC ACIDS, EXCEPT NITRIC, SULFURIC, AND PHOSPHORIC
28195	0.990	3886	28195	ALUMINUM OXIDE
28196	0.710	1755	28196	OTHER ALUMINUM COMPOUNDS
28197	0.510	5031	28197	POTASSIUM AND SODIUM COMPOUNDS (EXCEPT BLEACHES, ALKALIES, AND ALUMS)
28198	0.380	1728	28198	CHEMICAL CATALYTIC PREPARATIONS
28199	0.270	13346	28199	OTHER INORGANIC CHEMICALS, N.E.C.
28210	0.246	44864	28210	PLASTICS MATERIALS AND RESINS, N.S.K.
			28213	THERMOPLASTIC RESINS AND PLASTICS MATERIALS
			28214	THERMOSETTING RESINS AND PLASTICS MATERIALS
28220	0.512	12886	28220	SYNTHETIC RUBBER (VULCANIZABLE ELASTOMERS)
28230	0.000	36337	28231	ACETATE YARN
			28232	RAYON YARN, VISCOSE AND CUPRAMMONIUM PROCESSES
			28240	ORGANIC FIBERS, NONCELLULOSIC, N.S.K.
			28241	POLYAMIDE FIBERS, NYLON, EXCEPT NONTEXTILE MONOFILAMENT
			28242	OTHER NONCELLULOSIC SYNTHETIC ORGANIC FIBERS
28311	0.670	1259	28311	BLOOD AND BLOOD DERIVATIVES, FOR HUMAN USE
28312	0.840	705	28312	VACCINES AND ANTIGENS, FOR HUMAN USE
28313	0.690	183	28313	ANTITOXINS, TOXOIDS AND TOXINS FOR IMMUNIZATION, AND THERAPEUTIC IMMUNE SERUMS, FOR HUMAN USE
28314	0.540	1925	28314	DIAGNOSTIC SUBSTANCES AND OTHER BIOLOGICS, FOR HUMAN USE
28315	0.440	741	28315	BIOLOGICAL PREPARATIONS FOR VETERINARY USE
28330	0.490	7935	28331	SYNTHETIC ORGANIC MEDICINAL CHEMICALS, IN BULK
			28332	OTHER MEDICINAL CHEMICALS AND BOTANICAL PRODUCTS, IN BULK, N.E.C.

NEW SIC	4-FIRM CR WEISS	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
28340	0.000	866	28340	PHARMACEUTICAL PREPARATIONS, N.S.K.
28341	0.480	6154	28341	PHARMACEUTICAL PREPARATIONS AFFECTING NEOPLASMS, ENDOCRINE SYSTEMS AND METABOLIC DISEASES, FOR HUMAN USE
28342	0.430	16381	28342	PHARMACEUTICAL PREPARATIONS ACTING ON THE CENTRAL NERVOUS SYSTEM AND THE SENSE ORGANS, FOR HUMAN USE
28343	0.570	3831	28343	PHARMACEUTICAL PREPARATIONS ACTING ON THE CARDIOVASCULAR SYSTEM, FOR HUMAN USE
28344	0.480	5799	28344	PHARMACEUTICAL PREPARATIONS ACTING ON THE RESPIRATORY SYSTEM, FOR HUMAN USE
28345	0.350	7640	28345	PHARMACEUTICAL PREPARATIONS ACTING ON THE DIGESTIVE OR THE GENITO-URINARY SYSTEMS, FOR HUMAN USE
28346	0.350	3485	28346	PHARMACEUTICAL PREPARATIONS ACTING ON THE SKIN, FOR HUMAN USE
28347	0.270	6905	28347	VITAMIN, NUTRIENT, AND HEMATINIC PREPARATIONS, FOR HUMAN USE
28348	0.450	9490	28348	PHARMACEUTICAL PREPARATIONS AFFECTING PARASITIC AND INFECTIVE DISEASES, FOR HUMAN USE
28349	0.390	2403	28349	PHARMACEUTICAL PREPARATIONS FOR VETERINARY USE
28410	0.000	1030	28410	SOAP AND OTHER DETERGENTS, N.S.K.
28411	0.310	6525	28411	SOAP AND DETERGENTS, NONHOUSEHOLD
28412	0.840	16339	28412	HOUSEHOLD DETERGENTS
28413	0.720	4120	28413	SOAPS, EXCEPT SPECIALTY CLEANERS, HOUSEHOLD
28414	0.750	504	28414	GLYCERINE, NATURAL
28420	0.000	2090	28420	POLISHES AND SANITATION GOODS, N.S.K.
28422	0.750	2335	28422	HOUSEHOLD BLEACHES
28423	0.360	8989	28423	SPECIALTY CLEANING AND SANITATION PRODUCTS
28424	0.470	3918	28424	POLISHING PREPARATIONS AND RELATED PRODUCTS
28430	0.186	5807	28430	SURFACE ACTIVE AND FINISHING AGENTS
28441	0.570	2507	28441	SHAVING PREPARATIONS
28442	0.480	6770	28442	PERFUMES, TOILET WATER, AND COLOGNES

NEW SIC	4-FIRM CR WEISS	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
28443	0.460	10651	28443	HAIR PREPARATIONS (INCLUDING SHAMPOOS)
28444	0.790	4846	28444	DENTIFRICES, INCLUDING MOUTHWASHES, GARGLES, AND RINSES
28445	0.450	16736	28445	OTHER COSMETICS AND TOILET PREPARATIONS
28510	0.220	35202	28510	PAINTS AND ALLIED PRODUCTS, N.S.K.
			28511	EXTERIOR OIL-TYPE TRADE SALES PAINT PRODUCTS
			28512	EXTERIOR WATER-TYPE TRADE SALES PAINT PRODUCTS, INCLUDING TINTING BASES
			28513	INTERIOR OIL-TYPE TRADE SALES PAINT PRODUCTS
			28514	INTERIOR WATER-TYPE TRADE SALES PAINT PRODUCTS, INCLUDING TINTING BASES
			28515	TRADE SALES LACQUERS
			28516	INDUSTRIAL PRODUCT FINISHES, EXCEPT LACQUERS
			28517	INDUSTRIAL LACQUERS, INCLUDING ACRYLICS
			28518	PUTTY AND ALLIED PRODUCTS
			28519	MISCELLANEOUS PAINT PRODUCTS
28610	0.458	3008	28611	SOFTWOOD DISTILLATION PRODUCTS
			28612	OTHER GUM AND WOOD CHEMICALS
28650	0.300	23324	28651	CYCLIC INTERMEDIATES
			28652	SYNTHETIC ORGANIC DYES
			28653	SYNTHETIC ORGANIC PIGMENTS, LAKES, AND TONERS
			28655	CYCLIC (COAL TAR) CRUDES
28690	0.000	729	28690	INDUSTRIAL ORGANIC CHEMICALS, N.E.C., N.S.K.
28691	0.310	4650	28691	MISCELLANEOUS CYCLIC CHEMICAL PRODUCTS
28692	0.470	54352	28692	MISCELLANEOUS ACYCLIC CHEMICALS AND CHEMICAL PRODUCTS EXCLUDING UREA
28693	0.380	7230	28693	SYNTHETIC ORGANIC CHEMICALS, N.E.C., EXCEPT BULK SURFACE ACTIVE AGENTS
28694	0.570	4893	28694	PESTICIDES AND OTHER ORGANIC CHEMICALS (NOT FORMULATIONS)
28695	0.280	2803	28695	ETHYL ALCOHOL AND OTHER INDUSTRIAL ORGANIC CHEMICALS N.E.C.
28730	0.236	9373	28730	NITROGENOUS FERTILIZERS, N.S.K.
			28731	SYNTHETIC AMMONIA, NITRIC ACID, AND AMMONIUM COMPOUNDS
			28732	UREA
			28733	FERTILIZER MATERIALS OF ORGANIC ORIGIN
28740	0.246	10525	28741	PHOSPHORIC ACID
			28742	SUPERPHOSPHATE AND OTHER PHOSPHATIC FERTILIZER MATERIALS
			28743	MIXED FERTILIZERS, PRODUCED FROM ONE OR MORE MATERIALS, MADE IN SAME PLANT
28752	0.024	6519	28752	FERTILIZERS, MIXING ONLY. (SEE PRODUCT CLASS 28743.)

NEW SIC	4-FIRM CR WEISS	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
28791	0.480	3876	28791	INSECTICIDAL PREPARATIONS (FORMULATIONS) PRIMARILY FOR AGRICULTURAL, GARDEN, AND HEALTH SERVICE USE
28792	0.770	4320	28792	HERBICIDAL PREPARATIONS (FORMULATIONS) PRIMARILY FOR AGRICULTURAL, GARDEN, AND HEALTH SERVICE USE
28793	0.490	856	28793	AGRICULTURAL CHEMICALS, N.E.C.
28794	0.520	1068	28794	HOUSEHOLD INSECTICIDES AND REPELLANTS, INCLUDING INDUSTRIAL EXTERMINANTS
28910	0.158	9543	28910	ADHESIVES AND SEALANTS, N.S.K.
			28913	NATURAL BASE GLUES AND ADHESIVES
			28914	SYNTHETIC RESIN AND RUBBER ADHESIVES, INCLUDING ALL TYPES OF BONDING AND LAMINATING ADHESIVES
			28915	CAULKING COMPOUNDS AND SEALANTS
28920	0.676	2376	28921	EXPLOSIVES
28930	0.368	4980	28930	PRINTING INKS, N.S.K.
			28931	LETTERPRESS INKS (BLACK AND COLOR)
			28932	LITHOGRAPHIC AND OFFSET INKS (BLACK AND COLOR)
			28933	GRAVURE INKS
			28934	FLEXOGRAPHIC INKS
			28935	PRINTING INKS, N.E.C.
28950	0.739	2271	28950	CARBON BLACK (CHANNEL AND FURNACE PROCESS ONLY)
28990	0.000	2298	28990	CHEMICAL PREPARATIONS, N.E.C., N.S.K.
28991	0.700	1339	28991	SALT
28992	0.500	1553	28992	FATTY ACIDS
28994	0.760	682	28994	GELATIN, EXCEPT READY-TO-EAT DESSERTS
28995	0.160	16410	28995	ESSENTIAL OILS, FIREWORKS, AND PYROTECHNICS, SIZES, AND CHEMICAL PREPARATIONS, N.E.C
29110	0.503	254148	29110	OTHER FINISHED PETROLEUM PRODUCTS, INCLUDING WAXES
			29111	GASOLINE
			29112	JET FUEL
			29113	KEROSENE
			29114	DISTILLATE FUEL OIL
			29115	RESIDUAL FUEL OIL
			29116	LIQUEFIED REFINERY GASES (FEED STOCK AND OTHER USES
			29117	LUBRICATING OILS AND GREASES, MADE IN REFINERIES
			29118	UNFINISHED OILS AND LUBRICATING OIL BASE STOCK
			29119	ASPHALT
			29920	LUBRICATING OILS AND GREASES MADE FROM PURCHASED MATERIALS

NEW SIC	4-FIRM CR WEISS	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
29510	0.326	8934	29510	PAVING MIXTURES AND BLOCKS
29520	0.477	9022	29521	ASPHALT AND TAR SATURATED FELTS AND BOARDS FOR NONBUILDING USE
			29522	ROOFING ASPHALTS AND PITCHES, COATINGS, AND CEMENTS
			29523	ASPHALT AND TAR ROOFING AND SIDING PRODUCTS
29990	0.668	1392	29990	PETROLEUM AND COAL PRODUCTS, N.E.C.
30110	0.664	48984	30111	PASSENGER CAR AND MOTORCYCLE PNEUMATIC TIRES (CASINGS)
			30112	TRUCKS AND BUS (AND OFF-THE-HIGHWAY) PNEUMATIC TIRES
			30113	OTHER PNEUMATIC TIRES AND SOLID TIRES
			30114	ALL INNER TUBES
			30115	TREAD RUBBER, TIRE SUNDRIES, AND REPAIR MATERIALS
30210	0.343	4939	30211	RUBBER AND PLASTICS PROTECTIVE FOOTWEAR
			30212	RUBBER AND PLASTICS SHOES, SLIPPERS, OTHER FOOTWEAR, N.E.C.
30310	0.729	520	30310	RECLAIMED RUBBER
30410	0.461	8860	30411	RUBBER AND PLASTICS BELT AND BELTING, FLAT
			30412	RUBBER AND PLASTICS BELT AND BELTING, OTHER THAN FLAT
			30413	RUBBER AND PLASTICS HOSE, HORIZONTAL REINFORCED
			30414	RUBBER AND PLASTICS HOSE, CONTINUOUS MOLDED NONHYDRAULIC EXCEPT GARDEN
			30415	RUBBER AND PLASTICS GARDEN HOSE
			30416	ALL OTHER RUBBER AND PLASTICS HOSE
30690	0.000	1407	30690	FABRICATED RUBBER PRODUCTS, N.E.C., N.S.K.
30693	0.530	3501	30693	SPONGE AND FOAM RUBBER GOODS
30694	0.470	984	30694	RUBBER FLOOR AND WALL COVERING
30695	0.190	11444	30695	MECHANICAL RUBBER GOODS, N.E.C.
30696	0.570	1545	30696	RUBBER HEELS AND SOLES
30697	0.440	1168	30697	DRUGGIST AND MEDICAL SUNDRIES
30698	0.220	5338	30698	OTHER RUBBER GOODS, N.E.C.
30790	0.000	23438	30790	CONSUMER AND COMMERCIAL PLASTICS PRODUCTS, N.E.C., AND MISCELLANEOUS PLASTICS PRODUCTS, N.S.K.
30791	0.180	20688	30791	UNSUPPORTED PLASTICS FILM, SHEETS, RODS, AND TUBES
30792	0.250	8782	30792	FOAMED PLASTICS PRODUCTS

NEW SIC	4-FIRM CR WEISS	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
30793	0.370	5681	30793	LAMINATED SHEETS, RODS, AND TUBES
30794	0.200	12714	30794	PACKAGING AND SHIPPING CONTAINERS
30795	0.090	18195	30795	INDUSTRIAL PLASTICS PRODUCTS, EXCEPT BELTING, PACKING AND SEALS
30796	0.230	11148	30796	CONSTRUCTION PLASTICS PRODUCTS
30797	0.420	3773	30797	PLASTICS DINNERWARE, TABLEWARE, AND KITCHENWARE
30798	0.780	4293	30798	REGENERATED CELLULOSIC PRODUCTS, EXCEPT RAYON
30799	0.320	2272	30799	CUSTOM COMPOUNDED PURCHASED RESINS
31110	0.147	10264	31111	FINISHED CATTLE HIDE AND KIP SIDE LEATHERS
			31112	FINISHED CALF AND WHOLE KIP LEATHERS
			31113	FINISHED SHEEP AND LAMB LEATHERS
			31114	OTHER FINISHED LEATHERS, N.E.C.
			31115	ROUGH, RUSSET, AND CRUST LEATHER (NOT FINISHED IN THIS ESTABLISHMENT)
			31119	CONTRACT AND COMMISSION RECEIPTS FOR TANNING AND FINISHING LEATHER OWNED BY OTHERS
31310	0.729	1961	31310	BOOT AND SHOE CUT STOCK AND FINDINGS
31420	0.354	1594	31420	HOUSE SLIPPERS
31430	0.300	11813	31431	MEN'S DRESS SHOES
			31432	MEN'S CASUAL SHOES
			31433	MEN'S WORK SHOES
			31434	MEN'S DRESS AND CASUAL BOOTS, EXCEPT WORK
31440	0.267	13055	31440	WOMEN'S FOOTWEAR, EXCEPT ATHLETIC, N.S.K.
			31441	WOMEN'S SHOES, FLATS
			31442	WOMEN'S SHOES, LOW HEEL
			31443	WOMEN'S SHOES, MEDIUM HEEL
			31444	WOMEN'S SHOES, HIGH HEEL
			31445	WOMEN'S BOOTS
31490	0.198	4757	31491	YOUTHS' AND BOYS' SHOES
			31492	MISSES' AND CHILDREN'S SHOES
			31493	INFANTS' AND BABIES' SHOES
			31494	ALL OTHER FOOTWEAR, EXCEPT RUBBER AND SLIPPERS
31510	0.250	799	31510	DRESS AND WORK GLOVES AND MITTENS, ALL LEATHER
31610	0.306	3219	31610	SUITCASES, BRIEFCASES, BAGS, AND MUSICAL INSTRUMENT CASES

NEW SIC	4-FIRM CR WEISS	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
31710	0.105	3444	31710	WOMEN'S AND CHILDREN'S HANDBAGS AND PURSES
31720	0.300	2318	31720	PERSONAL LEATHER GOODS, EXCEPT HANDBAGS AND PURSES
31990	0.124	1460	31990	SADDLERY, HARNESS AND WHIPS, AND OTHER LEATHER PRODUCTS, N.E.C.
32110	0.752	12471	32111	SHEET (WINDOW) GLASS
			32112	PLATE AND FLOAT GLASS
			32113	LAMINATED GLASS MADE FROM GLASS PRODUCED IN SAME ESTABLISHMENT
			32114	OTHER FLAT GLASS MADE FROM GLASS PRODUCED IN THE SAME ESTABLISHMENT
			32313	LAMINATED GLASS MADE OF PURCHASED GLASS
32210	0.557	20852	32210	GLASS CONTAINERS
32291	0.740	4329	32291	TABLE, KITCHEN, ART, AND NOVELTY GLASSWARE (HANDMADE AND MACHINE-MADE)
32292	0.830	3946	32292	LIGHTING AND ELECTRONIC GLASSWARE
32293	0.950	2535	32293	GLASS FIBER (TEXTILE TYPE FIBER)
32294	0.800	1666	32294	OTHER PRESSED AND BLOWN GLASSWARE
32315	0.240	2545	32315	MIRRORS
32316	0.400	6258	32316	OTHER GLASS PRODUCTS MADE OF PURCHASED GLASS
32410	0.696	17700	32410	CEMENT, HYDRAULIC (INCLUDING COST OF SHIPPING CONTAINERS)
32510	0.375	4713	32511	BRICK, EXCEPT CERAMIC GLAZED AND REFRACTORY
			32512	GLAZED BRICK AND STRUCTURAL HOLLOW TILE
32530	0.380	1579	32530	CLAY FLOOR AND WALL TILE, INCLUDING QUARRY TILE
32550	0.475	3022	32550	CLAY REFRACTORIES
32590	0.386	1693	32590	STRUCTURAL CLAY PRODUCTS, N.E.C., N.S.K.
			32591	VITRIFIED CLAY SEWER PIPE AND FITTINGS
			32592	STRUCTURAL CLAY PRODUCTS, N.E.C.
32610	0.368	5640	32610	VITREOUS AND SEMIVITREOUS PLUMBING FIXTURES, ACCESSORIES, AND FITTINGS
			34310	METAL PLUMBING FIXTURES
32620	0.339	819	32620	VITREOUS CHINA AND PORCELAIN TABLE AND KITCHEN ARTICLES (FELDSPAR AND BONE)
32630	0.226	580	32630	EARTHENWARE (SEMIVITREOUS) TABLE AND KITCHEN ARTICLES

NEW SIC	4-FIRM CR WEISS	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
32640	0.408	2590	32640	PORCELAIN, STEATITE, AND OTHER CERAMIC ELECTRICAL PRODUCTS
32690	0.102	1469	32690	POTTERY PRODUCTS, N.E.C., INCLUDING CHINA DECORATING FOR THE TRADE
32710	0.319	7957	32710	CONCRETE BLOCK AND BRICK
32720	0.448	18647	32720	CONCRETE PRODUCTS, N.E.C., N.S.K.
			32721	CONCRETE PIPE
			32722	PRECAST CONCRETE PRODUCTS
			32723	PRESTRESSED CONCRETE PRODUCTS
32730	0.510	35788	32730	READY-MIXED CONCRETE
32740	0.353	2378	32740	LIME (INCLUDING COST OF SHIPPING CONTAINERS)
32750	0.789	5831	32750	GYPSUM PRODUCTS, N.S.K.
			32751	GYPSUM BUILDING MATERIALS
			32752	OTHER GYPSUM PRODUCTS
32810	0.424	2868	32811	CUT GRANITE AND GRANITE PRODUCTS
			32812	CUT LIMESTONE AND LIMESTONE PRODUCTS
			32813	CUT MARBLE AND OTHER CUT STONE PRODUCTS
32910	0.466	8923	32911	NONMETALLIC ARTIFICAL (SYNTHETIC) SIZED GRAINS, AND FLOUR ABRASIVES (INCLUDING GRADED PRODUCTS ONLY)
			32912	NONMETALLIC BONDED ABRASIVE PRODUCTS, INCLUDING DIAMOND ABRASIVES
			32913	NONMETALLIC COATED ABRASIVE PRODUCTS AND BUFFING WHEELS, POLISHING WHEELS AND LAPS
			32914	METAL ABRASIVES, INCLUDING SCOURING PADS
32920	0.720	7426	32922	ASBESTOS FRICTION MATERIALS
			32924	ASBESTOS-CEMENT SHINGLES AND CLAPBOARD
			32925	ASPHALT FLOOR TILE
			32926	VINYL ASBESTOS FLOOR TILE
			32927	ASBESTOS TEXTILES, ASBESTOS INSULATION, AND OTHER ASBESTOS-CEMENT PRODUCTS
32930	0.214	7147	32930	GASKETS, PACKING AND SEALING DEVICES, N.S.K.
			32932	GASKETS, ALL TYPES
			32933	PACKING AND SEALING DEVICES
32950	0.243	3915	32950	MINERALS AND EARTHS, GROUND OR OTHERWISE TREATED
32960	0.721	7386	32961	MINERAL WOOL FOR STRUCTURAL INSULATION
			32962	MINERAL WOOL FOR INDUSTRIAL AND EQUIPMENT INSULATION
32970	0.402	3721	32970	NONCLAY REFRACTORIES, EXCEPT DEAD-BURNED MAGNESIA
32990	0.268	1697	32990	OTHER NONMETALLIC MINERAL PRODUCTS, N.E.C.

NEW SIC	4-FIRM CR WEISS	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
33120	0.000	2899	33120	OTHER STEEL MILL PRODUCTS, EXCEPT WIRE PRODUCTS
33121	0.560	14973	33121	COKE OVEN AND BLAST FURNACE PRODUCTS, INCLUDING FERROLLOYS. (SEE ALSO PRODUCT GROUP 3313-.)
33122	0.580	25029	33122	STEEL INGOT AND SEMIFINISHED SHAPES
33123	0.540	67401	33123	HOT-ROLLED SHEET AND STRIP, INCLUDING TIN-MILL PRODUCTS
33124	0.590	56128	33124	HOT-ROLLED BARS AND BAR SHAPES, PLATES, STRUCTURAL SHAPES, AND PILING
33125	0.350	7263	33125	STEEL WIRE MADE IN STEEL MILLS
			33155	STEEL WIRE NOT MADE IN STEEL MILLS
33126	0.360	27655	33126	STEEL PIPE AND TUBES MADE IN STEEL MILLS
			33176	STEEL PIPE AND TUBES NOT MADE IN STEEL MILLS
33127	0.350	40379	33127	COLD-ROLLED STEEL SHEET AND STRIP MADE IN STEEL MILLS
			33167	COLD-ROLLED STEEL SHEET AND STRIP NOT MADE IN STEEL MILLS
33128	0.410	8276	33128	COLD-FINISHED STEEL BARS AND BAR SHAPES MADE IN STEEL MILLS
			33168	COLD-FINISHED STEEL BARS AND BAR SHAPES NOT MADE IN STEEL MILLS
33129	0.390	5245	33129	PRESS AND HAMMER STEEL FORGINGS MADE IN STEEL WORKS
			34629	PRESS AND HAMMER STEEL FORGINGS MADE IN STEEL FORGINGS AND OTHER INDUSTRIES
33130	0.672	5523	33131	FERROMANGANESE
			33132	FERROCHROME
			33133	FERROSILICON
			33134	OTHER FERROALLOYS PRODUCED IN ELECTRIC FURNACES
33150	0.000	495	33150	STEEL WIRE AND RELATED PRODUCTS, N.S.K.
33151	0.000	3666	33151	NONINSULATED FERROUS WIRE ROPE, CABLE AND STRAND MADE IN 3212, 3315
			34961	NONINSULATED FERROUS WIRE ROPE, CABLE AND STRAND MADE IN 3496
33152	0.440	2485	33152	STEEL NAILS AND SPIKES
33156	0.300	2456	33156	FENCING AND FENCE GATES MADE IN 3312, 3315
			34966	FENCING AND FENCE GATES MADE IN 3496
33157	0.000	1289	33157	FERROUS WIRE CLOTH AND OTHER WOVEN FERROUS WIRE PRODUCTS MADE IN 3312, 3315
			34964	FERROUS WIRE CLOTH AND OTHER WOVEN FERROUS WIRE PRODUCTS MADE IN 3496
33159	0.260	8475	33159	OTHER FABRICATED WIRE PRODUCTS MADE IN 3312, 3315
			34969	OTHER FABRICATED WIRE PRODUCTS MADE IN 3496

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NEW SIC	4-FIRM CR WEISS	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
33210	0.457	40338	33210	GRAY IRON FOUNDRIES, N.S.K.
			33215	DUCTILE IRON CASTINGS
			33216	MOLDS FOR HEAVY STEEL INGOTS
			33217	CAST IRON PRESSURE PIPE AND FITTINGS (EXCEPT DUCTILE)
			33218	CAST IRON SOIL PIPE AND FITTINGS
			33219	OTHER GRAY IRON CASTINGS (EXCEPT DUCTILE)
33220	0.506	4848	33221	STANDARD MALLEABLE CASTINGS
			33222	PEARLITIC MALLEABLE CASTINGS
33240	0.526	2377	33240	STEEL INVESTMENT CASTINGS
33250	0.210	10503	33250	STEEL CASTINGS, N.E.C., N.S.K.
			33252	CARBON STEEL CASTINGS
			33254	HIGH ALLOY STEEL CASTINGS (EXCEPT INVESTMENT)
			33255	OTHER ALLOY STEEL CASTINGS
33310	0.680	28471	33310	PRIMARY COPPER, N.S.K.
			33311	COPPER SMELTER PRODUCTS
			33312	REFINED COPPER MADE BY PRIMARY COPPER REFINERS
			33412	REFINED COPPER MADE BY SECONDARY REFINERS AND OTHER INDUSTRIES
33320	0.000	5082	33321	LEAD SMELTER PRODUCTS (USING CPR SAMPLE AS UNIVERSE)
			33323	REFINED LEAD MADE BY PRIMARY LEAD REFINERS (USING CPR SAMPLE AS UNIVERSE)
			33413	REFINED LEAD MADE BY SECONDARY REFINERS (USING CPR SAMPLE AS UNIVERSE)
33330	0.000	4469	33331	ZINC RESIDUES AND OTHER ZINC SMELTER PRODUCTS
			33334	REFINED ZINC MADE BY PRIMARY ZINC REFINERS
			33414	SECONDARY ZINC (PIG, INGOT, SHOT, ETC.)
33340	0.000	22906	33347	ALUMINUM INGOT MADE IN PRIMARY ALUMINUM INDUSTRY AND OTHER PRIMARY NONFERROUS INDUSTRIES
			33348	ALUMINUM EXTRUSION BILLET MADE IN PRIMARY ALUMINUM INDUSTRY AND OTHER PRIMARY NONFERROUS INDUSTRIES
			33417	ALUMINUM INGOT MADE IN SECONDARY NONFERROUS METALS INDUSTRY AND ALL OTHER INDUSTRIES
			33418	ALUMINUM EXTRUSION BILLET MADE IN SECONDARY NONFERROUS METALS
			33553	ALUMINUM INGOT MADE ALUMINUM ROLLING AND DRAWING MILLS
			33554	ALUMINUM EXTRUSION BILLET MADE IN ALUMINUM ROLLING AND DRAWING MILLS
33395	0.670	5274	33395	PRECIOUS METALS
			33415	PRECIOUS METALS
33397	0.560	5773	33397	OTHER PRIMARY NONFERROUS METALS, INCLUDING MAGNESIUM
			33416	OTHER PRIMARY NONFERROUS METALS, INCLUDING MAGNESIUM
33410	0.230	1714	33410	SECONDARY NONFERROUS METALS, N.S.K.

NEW SIC	4-FIRM CR WEISS	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
33510	0.493	28250	33510	COPPER ROLLING AND DRAWING, N.S.K.
			33511	COPPER AND COPPER-BASE ALLOY WIRE (BARE AND TINNED) FOR PURPOSES OTHER THAN ELECTRICAL TRANSMISSION
			33513	COPPER AND COPPER-BASE ALLOY ROD, BAR, AND SHAPES
			33514	COPPER AND COPPER-BASE ALLOY SHEET, STRIP, AND PLATE
			33515	COPPER AND COPPER-BASE ALLOY PIPE AND TUBE
33530	0.699	22380	33531	ALUMINUM PLATE
			33532	ALUMINUM SHEET
			33533	PLAIN ALUMINUM FOIL
			33534	ALUMINUM WELDED TUBE
33540	0.358	10264	33540	ALUMINUM EXTRUDED PRODUCTS, N.S.K.
			33541	EXTRUDED ALUMINUM, ROD, BAR, AND OTHER EXTRUDED SHAPES
			33542	ALUMINUM EXTRUDED AND DRAWN TUBE
33552	0.870	3030	33552	ROLLED ALUMINUM ROD, BAR (INCLUDING CONTINUOUS CAST) AND STRUCTURAL SHAPES
33560	0.000	450	33560	NONFERROUS ROLLING AND DRAWING, N.E.C., N.S.K.
33561	0.850	2704	33561	NICKEL AND NICKEL-BASE ALLOY MILL SHAPES (INCLUDING MONEL)
33562	0.770	1111	33562	TITANIUM MILL SHAPES
33563	0.880	3640	33563	PRECIOUS METAL MILL SHAPES
33569	0.370	2851	33569	ALL OTHER NONFERROUS METAL MILL SHAPES (MADE IN INDUSTRY 3356). SEE ALSO PRODUCT CLASS 33573.)
33570	0.000	44381	33551	ALUMINUM AND ALUMINUM-BASED ALLOY WIRE MADE IN ALUMINUM ROLLING MILLS
			33570	NONFERROUS WIREDRAWING AND INSULATING, N.S.K.
			33571	ALUMINUM AND ALUMINUM-BASED ALLOY WIRE MADE IN NONFERROUS WIREDRAWING PLANTS AND INDUSTRIES
			33572	COPPER AND COPPER-BASE ALLOY WIRE (INCLUDING STRAND AND CABLE), BARE AND TINNED FOR ELECTRICAL TRANSMISION
			33573	OTHER BARE NONFERROUS METAL WIRE, MADE IN NONFERROUS WIREDRAWING PLANTS. (SEE PRODUCT CLASS 33569.)
			33574	COMMUNICATION WIRE AND CABLE
			33575	NONFERROUS WIRE CLOTH AND OTHER WOVER WIRE PRODUCTS MADE IN NONFERROUS WIREDRAWING PLANTS
			33576	APPLIANCE WIRE AND CORD AND FLEXIBLE CORD SETS MADE IN NONFERROUS WIREDRAWING AND INSULATION
			33577	MAGNET WIRE
			33578	POWER WIRE AND CABLE
			33579	OTHER INSULATED WIRE AND CABLE, N.E.C.
			34965	NONFERROUS WIRE CLOTH AND OTHER WOVEN WIRE PRODUCTS MADE BY OTHER THAN NONFERROUS WI

NEW SIC	4-FIRM CR WEISS	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
34297	0.270	1756	34297	OTHER TRANSPORTATION EQUIPMENT HARDWARE, EXCEPT MOTOR VEHICLE HARDWARE
34298	0.230	3939	34298	OTHER HARDWARE, N.E.C.
34320	0.230	6766	34320	PLUMBING FIXTURE FITTINGS AND TRIM (BRASS GOODS)
34330	0.160	673	34330	HEATING EQUIPMENT, EXCEPT ELECTRIC, N.S.K.
34333	0.490	1525	34333	CAST-IRON HEATING BOILERS, RADIATORS, AND CONVECTORS, EXCEPT PARTS
34334	0.480	700	34334	DOMESTIC HEATING STOVES (EXCEPT ELECTRIC), EXCEPT PARTS
34335	0.450	687	34335	STEEL HEATING BOILERS (15 P.S.I. AND UNDER), EXCEPT PARTS
34337	0.250	5655	34337	OTHER HEATING EQUIPMENT, EXCEPT ELECTRIC
34410	0.417	33059	34410	FABRICATED STRUCTURAL METAL, N.S.K.
			34411	FABRICATED STRUCTURAL METAL FOR BUILDINGS
			34412	FABRICATED STRUCTURAL METAL FOR BRIDGES
			34413	OTHER FABRICATED STRUCTURAL METAL
34420	0.110	19029	34420	METAL DOORS, SASH, AND TRIM, N.S.K.
			34421	METAL DOORS AND FRAMES (EXCEPT STORM DOORS)
			34422	METAL WINDOW SASH AND FRAMES (EXCEPT STORM SASH)
			34423	METAL MOLDING AND TRIM AND STORE FRONTS
			34424	METAL COMBINATION SCREEN AND STORM SASH AND DOORS
			34425	METAL WINDOW AND DOOR SCREENS (EXCEPT COMBINATION), AND METAL WEATHERSTRIP
34430	0.270	1984	34430	FABRICATED PLATEWORK (BOILER SHOPS), N.S.K.
34431	0.310	4471	34431	HEAT EXCHANGERS AND STEAM CONDENSERS
34432	0.170	6173	34432	FABRICATED STEEL PLATE, INCLUDING STACKS AND WELDMENTS
34433	0.830	7282	34433	STEEL POWER BOILERS, PARTS, AND ATTACHMENTS (OVER 15 P.S.I. STEAM WORKING PRESSURE)
34434	0.540	935	34434	GAS CYLINDERS
34435	0.340	1747	34435	METAL TANKS, COMPLETE AT FACTORY (STANDARD LINE, PRESSURE)
34437	0.130	2551	34437	METAL TANKS, COMPLETE AT FACTORY (STANDARD LINE, NON-PRESSURE)
34438	0.220	3821	34438	METAL TANKS AND VESSELS, CUSTOM FABRICATED AT THE FACTORY
34439	0.580	3693	34439	METAL TANKS AND VESSELS, CUSTOM FABRICATED AND FIELD ERECTED

NEW SIC	4-FIRM CR WEISS	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
			36996	APPLIANCE WIRE AND CORD AND FLEXIBLE CORD SETS MADE IN ELECTRICAL EQUIPMENT AND SUPPLIES N.
33610	0.412	11723	33610	ALUMINUM FOUNDRIES, N.S.K.
			33611	ALUMINUM AND ALUMINUM-BASE ALLOY CASTINGS
			33612	OTHER ALUMINUM AND ALUMINUM-BASE ALLOY CASTINGS
33620	0.136	4629	33620	COPPER AND COPPER-BASE ALLOY CASTINGS
33690	0.234	6035	33691	ZINC AND ZINC-BASE ALLOY CASTINGS
			33692	MAGNESIUM AND MAGNESIUM-BASE ALLOY CASTINGS
			33693	OTHER NONFERROUS CASTINGS (EXCLUDING ZINC AND MAGNESIUM)
33980	0.000	4541	33980	HEAT TREATING OF METAL FOR THE TRADE
33991	0.310	3227	33991	METAL POWDERS AND PASTE
33992	0.290	938	33992	OTHER PRIMARY METAL PRODUCTS, INCLUDING NONFERROUS NAILS, BRADS, SPIKES, AND STAPLES
34110	0.658	42244	34111	STEEL CANS AND TINWARE END PRODUCTS, (INCLUDES 34112, ALUMINUM CANS)
34120	0.359	5094	34121	STEEL PAILS (12-GALLON CAPACITY AND UNDER)
			34122	STEEL SHIPPING BARRELS AND DRUMS (OVER 12-GALLON CAPACITY)
			34123	ALL OTHER METAL BARRELS
34211	0.290	1833	34211	CUTLERY, SCISSORS, SHEARS, TRIMMERS, AND SNIPS
34212	0.970	2072	34212	RAZOR BLADES AND RAZORS, EXCEPT ELECTRIC
34230	0.000	780	34230	HAND AND EDGE TOOLS, N.E.C., N.S.K.
34231	0.330	6012	34231	MECHANICS'HAND SERVICE TOOLS
34232	0.330	1601	34232	EDGE TOOLS, HAND OPERATED
34233	0.480	2747	34233	FILES, RASPS, AND FILE ACCESSORIES AND OTHER HANDTOOLS
34250	0.351	2018	34250	HANDSAWS, SAW BLADES, AND SAW ACCESSORIES
34292	0.380	2050	34292	FURNITURE HARDWARE
34293	0.930	854	34293	VACUUM AND INSULATED BOTTLES, JUGS, AND CHESTS
34294	0.290	9283	34294	BUILDERS' HARDWARE
34296	0.000	11803	34296	MOTOR VEHICLE HARDWARE

NEW SIC	4-FIRM CR WEISS	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
34440	0.240	26507	34440	SHEET METALWORK, N.S.K.
			34442	CULVERTS, FLUMES, AND IRRIGATION PIPES
			34444	METAL ROOFING AND ROOF DRAINAGE EQUIPMENT
			34445	METAL FLOORING AND SIDING
			34446	OTHER SHEET METALWORK
34460	0.108	5894	34460	ARCHITECTURAL AND ORNAMENTAL METALWORK (EXCEPT CURTAIN WALL AND OTHER EXTERIOR PANELS)
34480	0.310	5788	34481	PREFABRICATED METAL INDUSTRIAL AND COMMERCIAL BUILDINGS
			34482	OTHER PREFABRICATED AND PORTABLE METAL BUILDINGS AND PARTS
34490	0.456	9946	34490	MISCELLANEOUS METALWORK, N.S.K.
			34494	FABRICATED CONCRETE REINFORCING BAR AND BAR JOISTS
			34495	OTHER MISCELLANEOUS METAL BUILDING MATERIALS AND CURTAIN WALL
34510	0.140	10831	34510	SCREW MACHINE PRODUCTS, N.S.K.
			34511	AUTOMOTIVE SCREW MACHINE PRODUCTS
			34512	OTHER SCREW MACHINE PRODUCTS
34520	0.150	19884	34520	BOLTS, NUTS, RIVETS, AND WASHERS, N.S.K.
			34524	EXTERNALLY THREADED FASTENERS, EXCEPT AIRCRAFT
			34525	INTERNALLY THREADED FASTENERS, EXCEPT AIRCRAFT
			34526	NONTHREADED FASTENERS, EXCEPT AIRCRAFT
			34527	AIRCRAFT AEROSPACE FASTENERS
			34528	OTHER FORMED PARTS
34620	0.297	18387	34620	IRON AND STEEL FORGINGS, N.S.K.
			34621	DROP, UPSET AND PRESS STEEL FORGINGS (CLOSED DIE)
34630	0.486	2808	34630	NONFERROUS FORGINGS, N.S.K.
			34631	ALUMINUM AND ALUMINUM-BASE ALLOY FORGINGS
			34632	OTHER NONFERROUS FORGINGS (EXCEPT ALUMINUM)
34650	0.696	51558	34650	JOB STAMPINGS, AUTOMOTIVE
34660	0.476	3394	34661	METAL COMMERCIAL CLOSURES AND METAL HOME CANNING CLOSURES (EXCEPT CROWNS)
			34662	METAL CROWNS
34690	0.000	3540	34690	METAL STAMPINGS, N.E.C., N.S.K.
34692	0.110	12831	34692	JOB STAMPINGS, EXCEPT AUTOMOTIVE
34694	0.560	2050	34694	STAMPED AND SPUN UTENSILS, COOKING AND KITCHEN, ALUMINUM
34695	0.510	1844	34695	STAMPED AND SPUN UTYNSILS, COOKING AND KITCHEN, EXCEPT ALUMINUM
34699	0.090	5884	34699	OTHER STAMPED AND PRESSED METAL END PRODUCTS

NEW SIC	4-FIRM CR WEISS	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
34710	0.240	9934	34710	ELECTROPLATING, PLATING, AND POLISHING
34790	0.150	6820	34790	COATING, ENGRAVING, AND ALLIED SERVICES, N.E.C.
34820	0.847	4226	34820	SMALL ARMS AMMUNITION, 30MM. AND UNDER (OR 1.18 INCHES AND UNDER)
34830	0.388	13032	34830	AMMUNITION, EXCEPT FOR SMALL ARMS, N.E.C., N.S.K.
			34831	ARTILLERY AMMUNITION OVER 30 MM. (OR OVER 1.18 INCHES^), (INCLUDES 34832, RECEIPTS FOR AMMUNITION LOADING AND ASSEMBLY OVER 30 MM.)
			34833	AMMUNITION, EXCEPT FOR SMALL ARMS, N.E.C.
34840	0.440	3341	34841	MACHINE GUNS, 30MM. AND UNDER (OR 1.18 INCHES AND UNDER)
			34842	SMALL ARMS, 30MM. AND UNDER (OR 1.18 INCHES AND UNDER)
34890	0.398	4549	34891	GUNS, HOWITZERS MORTARS, AND RELATED EQUIPMENT, OVER 33 MM. (OR OVER 1.18 INCHES)
			34892	ORDNANCE AND ACCESSORIES, N.E.C.
34930	0.358	3618	34930	STEEL SPRINGS, EXCEPT WIRE, N.S.K.
			34931	HOT FORMED SPRINGS
			34932	COLD FORMED SPRINGS
34940	0.105	24047	34940	VALVES AND PIPE FITTINGS, N.S.K.
			34941	AUTOMATIC REGULATING AND CONTROL VALVES
			34942	VALVES FOR POWER TRANSFER (PNEUMATIC AND HYDRAULIC)
			34943	OTHER METAL VALVES FOR PIPING SYSTEMS AND EQUIPMENT
			34944	PLUMBING AND HEATING VALVES AND SPECIALITIES (EXCEPT PLUMBERS' BRASS GOODS)
			34945	METAL FITTINGS, FLANGES, AND UNIONS FOR PIPING SYSTEMS
			34946	FITTINGS AND ASSEMBLIES FOR TUBING AND HOSE (EXCEPT PLUMBERS' BRASS GOODS)
34950	0.240	5661	34952	PRECISION MECHANICAL SPRINGS
			34953	OTHER WIRE SPRINGS
34960	0.318	1902	34960	MISCELLANEOUS FABRICATED WIRE PRODUCTS, N.S.K.
34970	0.381	5118	34970	METAL FOIL AND LEAF, N.S.K.
			34971	CONVERTED UNMOUNTED ALUMINUM FOIL PACKAGING PRODUCTS, NOT LAMINATED TO OTHER MATERIALS
			34972	LAMINATED ALUMINUM FOIL ROLL AND SHEETS FOR FLEXIBLE PACKAGING USES
			34973	CONVERTED ALUMINUM FOIL FOR NONPACKAGING APPLICATIONS AND FOIL AND LEAF
34980	0.190	6705	34980	FABRICATED PIPE AND FITTINGS
34990	0.000	3782	34990	FABRICATED METAL PRODUCTS, N.E.C., N.S.K.
34991	0.890	1462	34991	SAFES AND VAULTS

NEW SIC	4-FIRM CR WEISS	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
34992	0.700	491	34992	COLLAPSIBLE TUBES
34993	0.850	1678	34993	FLAT METAL STRAPPING
34994	0.180	13905	34994	ALL OTHER FABRICATED METAL PRODUCTS, EXCEPT FLAT
35110	0.774	20797	35110	TURBINES AND TURBINE GENERATOR SETS, N.S.K.
			35111	STEAM, GAS, AND HYDRAULIC TURBINE GENERATOR SET UNITS AND PARTS
			35112	STEAM, GAS, AND HYDRAULIC TURBINES AND PARTS
35191	0.910	3268	35191	GASOLINE ENGINES, UNDER 11 HORSEPOWER, EXCEPT AIRCRAFT, AUTOMOBILE, TRUCK, BUS, AND TANK
35192	0.590	1640	35192	GASOLINE ENGINES, 11 HORSEPOWER AND OVER, EXCEPT AIRCRAFT, AUTOMOBILE, TRUCK, BUS, AND TANK
35193	0.800	6040	35193	DIESEL ENGINES, EXCEPT FOR TRUCKS AND BUSES
35194	0.960	6346	35194	DIESEL ENGINES FOR TRUCKS AND BUSES
35195	0.850	4259	35195	OUTBOARD MOTORS AND TANK AND CONVERTED INTERNAL COMBUSTION ENGINES (INCLUDES 35197)
35196	0.770	352	35196	GAS ENGINES (EXCEPT GAS TURBINES)
35199	0.510	11449	35199	PARTS AND ACCESSORIES FOR INTERNAL COMBUSTION ENGINES
35230	0.000	2046	35230	FARM MACHINERY AND EQUIPMENT, N.S.K.
35231	0.810	12152	35231	WHEEL TRACTORS AND ATTACHMENTS (EXCEPT CONTRACTORS' OFF-HIGHWAY TYPE, GARDEN TRACTORS, AND MOTOR TILLERS)
35232	0.270	1578	35232	FARM DAIRY MACHINES, SPRAYERS, AND DUSTERS, FARM ELEVATORS, AND FARM BLOWERS
35233	0.430	1720	35233	PLANTING, SEEDING, AND FERTILIZING MACHINERY
35234	0.360	1918	35234	HARROWS, ROLLERS, PULVERIZERS, STALK CUTTERS, AND SIMILAR EQUIPMENT
35235	0.710	5804	35235	HARVESTING MACHINERY
35236	0.820	1841	35236	HAYING MACHINERY
35237	0.700	854	35237	PLOWS AND LISTERS
35238	0.150	6108	35238	ALL OTHER FARM MACHINERY AND EQUIPMENT
35239	0.510	7414	35239	PARTS FOR FARM MACHINERY AND EQUIPMENT, SOLD SEPARATELY
35240	0.274	11434	35242	GARDEN TRACTORS AND MOTOR TILLERS

NEW SIC	4-FIRM CR WEISS	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
			35247	LAWNMOWERS AND SNOW BLOWERS
			35249	PARTS FOR LAWN AND GARDEN EQUIPMENT, FOR SALE SEPARATELY
35310	0.000	1177	35310	CONSTRUCTION MACHINERY, N.S.K.
35311	0.760	2515	35311	CONTRACTORS' OFF-HIGHWAY WHEEL TRACTORS, EXCEPT
35312	0.910	5640	35312	TRACKLAYING TYPE TRACTORS, EXCEPT PARTS AND ATTACHMENTS
35313	0.700	8657	35313	PARTS AND ATTACHMENTS FOR TRACKLAYING TYPE TRACTORS, CONTRACTORS' OFF-HIGHWAY WHEEL TRACTORS, AND TRACTOR SHOVEL LOADERS
35314	0.430	9142	35314	POWER CRANES (INCLUDING LOCOMOTIVE AND FULL-CIRCLE REVOLVING WITH BOOMS), DRAGLINES, SHOVELS AND PARTS
35316	0.390	2520	35316	MIXERS, PAVERS, AND RELATED EQUIPMENT, EXCLUDING PARTS
35317	0.750	8107	35317	TRACTOR SHOVEL LOADERS, EXCLUDING PARTS AND ATTACHMENTS
35318	0.480	9648	35318	SCRAPERS, GRADERS, ROLLERS, AND OFF-HIGHWAY TRUCKS, TRAILERS, AND WAGONS (EXCLUDING PARTS)
35319	0.220	9130	35319	OTHER CONSTRUCTION MACHINERY AND EQUIPMENT,INCLUDING PARTS
35320	0.332	7298	35321	UNDERGROUND MINING AND MINERAL BENEFICIATION MACHINERY AND EQUIPMENT
			35322	CRUSHING, PULVERIZING, AND SCREENING MACHINERY
			35323	ALL OTHER MINING MACHINERY AND EQUIPMENT
			35324	PARTS AND ATTACHMENTS FOR MINING MACHINERY AND EQUIPMENT
35331	0.560	3482	35331	ROTARY OILFIELD AND GASFIELD DRILLING MACHINERY AND EQUIPMENT
35332	0.500	870	35332	OTHER OILFIELD AND GASFIELD DRILLING MACHINERY AND EQUIPMENT
35333	0.400	3765	35333	OILFIELD AND GASFIELD PRODUCTION MACHINERY AND EQUIPMENT (EXCEPT PUMPS)
35334	0.370	1136	35334	OTHER OILFIELD AND GASFIELD MACHINERY AND TOOLS (EXCEPT PUMPS), INCLUDING WATER WELL
35340	0.515	4122	35340	ELEVATORS AND MOVING STAIRWAYS
35350	0.188	8256	35351	CONVEYORS AND CONVEYING EQUIPMENT (EXCEPT HOISTS AND FARM ELEVATORS)
			35352	PARTS, ATTACHMENTS, AND ACCESSORIES FOR CONVEYORS AND CONVEYING EQUIPMENT
35360	0.205	4460	35360	HOISTS, CRANES, AND MONORAILS, N.S.K.
			35361	HOISTS
			35362	OVERHEAD TRAVELING CRANES AND MONORAIL SYSTEMS

NEW SIC	4-FIRM CR WEISS	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
35370	0.445	10048	35370	INDUSTRIAL TRUCKS AND TRACTORS, N.S.K.
			35371	INDUSTRIAL TRUCKS AND TRACTORS
			35372	PARTS AND ATTACHMENTS FOR INDUSTRIAL TRUCKS AND TRACTORS, AND MISCELLANEOUS MATERIALS HANDLING EQUIPMENT
35411	0.430	587	35411	BORING MACHINES
35412	0.330	737	35412	DRILLING MACHINES
35413	0.790	567	35413	GEAR CUTTING AND FINISHING MACHINES
35414	0.400	1686	35414	GRINDING AND POLISHING MACHINES (EXCLUDING GEAR TOOTH GRINDING, HONING, LAPPING, POLISHING, AND BUFFING MACHINES)
35415	0.380	1976	35415	LATHES
35416	0.620	866	35416	MILLING MACHINES
35418	0.260	3031	35418	OTHER MACHINE TOOLS (INCLUDING THOSE PRIMARILY DESIGNED FOR HOME WORKSHOPS, LABORATORIES, ETC.)
35419	0.280	2421	35419	PARTS FOR METAL-CUTTING TYPE MACHINE TOOLS, SOLD SEPARATELY, AND REBUILT MACHINE TOOLS
35420	0.304	6701	35420	MACHINE TOOLS, METAL-FORMING, N.S.K.
			35421	PUNCHING, SHEARING, BENDING, AND FORMING MACHINES
			35422	PRESSES, INCLUDING FORGING PRESSES
			35423	OTHER METAL-FORMING MACHINE TOOLS, INCLUDING FORGING MACHINES
			35424	PARTS FOR METAL-FORMING MACHINE TOOLS AND REBUILT METAL-FORMING MACHINERY
35440	0.098	27135	35440	SPECIAL DIES, TOOLS, JIGS AND FIXTURES, N.S.K.
			35441	SPECIAL DIES AND TOOLS, DIE SETS, JIGS, AND FIXTURES
			35442	INDUSTRIAL MOLDS
35450	0.000	999	35450	MACHINE TOOL ACCESSORIES, N.S.K.
35451	0.230	7380	35451	SMALL CUTTING TOOLS FOR MACHINE TOOLS AND METALWORKING MACHINERY
35452	0.520	947	35452	PRECISION MEASURING TOOLS
35453	0.170	2188	35453	OTHER ATTACHMENTS AND ACCESSORIES FOR MACHINE TOOLS AND METAL-WORKING MACHINERY
35460	0.379	6229	35460	POWER-DRIVEN HANDTOOLS, N.S.K.
			35461	POWER-DRIVEN HANDTOOLS, ELECTRIC
			35462	POWER-DRIVEN HANDTOOLS, PNEUMATIC AND POWDER ACTUATED
35470	0.717	2479	35470	ROLLING MILL MACHINERY, N.S.K.

NEW SIC	4-FIRM CR WEISS	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
			35471	HOT ROLLING MILL MACHINERY, EXCEPT TUBE ROLLING
			35472	COLD ROLLING MILL MACHINERY
			35473	OTHER ROLLING MILL MACHINERY, INCLUDING TUBE MILL MACHINERY
35493	0.630	937	35493	WELDING AND CUTTING APPARATUS, EXCEPT ELECTRIC
35494	0.430	1111	35494	AUTOMOTIVE MAINTENANCE EQUIPMENT
35495	0.240	1545	35495	OTHER METALWORKING MACHINERY
35511	0.570	574	35511	DAIRY AND MILK PRODUCTS PLANT MACHINERY AND EQUIPMENT, EXCEPT BOTTLING AND PACKAGING MACHINERY
35512	0.330	1850	35512	COMMERCIAL FOOD PRODUCTS MACHINERY, EXCEPT WRAPPING MACHINES
35513	0.230	2962	35513	OTHER INDUSTRIAL FOOD PRODUCTS MACHINERY (EXCEPT PACKING AND BOTTLING MACHINERY) AND PARTS AND ATTACHMENTS
35514	0.310	2321	35514	PACKING, PACKAGING, AND BOTTLING MACHINERY FOR INDUSTRIAL FOOD PRODUCTS
35520	0.159	7381	35521 35522	TEXTILE MACHINERY PARTS AND ATTACHMENTS FOR TEXTILE MACHINERY
35531	0.390	3725	35531	WOODWORKING MACHINERY (EXCEPT HOME WORKSHOP), INCLUDING PARTS AND ATTACHMENTS
35532	0.900	515	35532	WOODWORKING MACHINERY FOR HOME WORKSHOP (EXCEPT POWERDRIVEN HANDTOOLS), INCLUDING PARTS AND ATTACHMENTS
35540	0.259	3814	35540	PAPER INDUSTRIES MACHINERY AND PARTS AND ATTACHMENTS
35550	0.000	493	35550	PRINTING TRADES MACHINERY, N.S.K.
35551	0.710	1560	35551	PRINTING PRESSES, LITHOGRAPHIC
35552	0.510	902	35552	PRINTING PRESSES, OTHER THAN LITHOGRAPHIC
35553	0.720	1041	35553	TYPESETTING MACHINERY AND EQUIPMENT
35554	0.750	335	35554	BINDERY EQUIPMENT
35555	0.260	3035	35555	OTHER PRINTING TRADES MACHINERY AND EQUIPMENT AND PARTS AND ATTACHMENTS FOR ALL PRINTING TRADES MACHINERY AND EQUIPMENT
35590	0.000	1695	35590	SPECIAL INDUSTRY MACHINERY, N.E.C., N.S.K.
35591	0.290	2125	35591	CHEMICAL MANUFACTURING INDUSTRIES MACHINERY AND EQUIPMENT AND PARTS

NEW SIC	4-FIRM CR WEISS	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
35592	0.560	1323	35592	FOUNDRY MACHINERY AND EQUIPMENT, EXCLUDING PATTERNS AND MOLDS
35593	0.310	4341	35593	PLASTICS-WORKING MACHINERY AND EQUIPMENT, EXCLUDING PATTERNS AND MOLDS
35594	0.530	1373	35594	RUBBER-WORKING MACHINERY AND EQUIPMENT, EXCLUDING TIRE MOLDS
35595	0.260	12814	35595	OTHER SPECIAL INDUSTRY MACHINERY AND EQUIPMENT
35610	0.000	754	35610	PUMPS AND PUMPING EQUIPMENT, N.S.K.
35611	0.220	6119	35611	INDUSTRIAL PUMPS, EXCEPT HYDRAULIC FLUID POWER PUMPS
35612	0.440	2616	35612	HYDRAULIC FLUID POWER PUMPS
35613	0.410	1511	35613	DOMESTIC WATER SYSTEMS AND PUMPS, INCLUDING PUMP JACKS AND CYLINDERS
35615	0.260	1864	35615	PUMPS AND PUMPING EQUIPMENT, N.E.C.
35616	0.210	3465	35616	PARTS AND ATTACHMENTS FOR PUMPS AND PUMPING EQUIPMENT
35620	0.619	14187	35621	BALL BEARINGS, COMPLETE
			35622	TAPER (EXCEPT THRUST) ROLLER BEARINGS, COMPLETE
			35623	OTHER ROLLER BEARINGS, COMPLETE
			35624	MOUNTED BEARINGS
			35629	PARTS AND COMPONENTS FOR BALL AND ROLLER BEARINGS, INCLUDING BALLS AND ROLLERS, SOLD SEPARATELY
35630	0.384	7227	35631	AIR AND GAS COMPRESSORS AND VACUUM PUMPS
			35632	PARTS AND ATTACHMENTS FOR AIR AND GAS COMPRESSORS, EXCEPT REFRIGERATION EQUIPMENT
35640	0.153	6820	35640	BLOWERS AND FANS, N.S.K.
			35643	CENTRIFUGAL FANS AND BLOWERS
			35644	PROPELLER FANS AND ACCESSORIES, AXIAL FANS, AND POWER ROOF VENTILATORS
			35645	DUST COLLECTION AND OTHER AIR PURIFICATION EQUIPMENT FOR HEATING, VENTILATING AND AIR-CONDITIONING SYSTEMS
			35646	DUST COLLECTION AND OTHER AIR PURIFICATION EQUIPMENT FOR INDUSTRIAL GAS CLEANING SYSTEMS
35650	0.060	2344	35650	INDUSTRIAL PATTERNS, EXCEPT SHOE PATTERNS
35660	0.243	5930	35660	SPEED CHANGERS, INDUSTRIAL HIGH-SPEED DRIVES, AND GEARS (INCLUDES 35680, POWER TRANSMISION EQUIPMENT, N.E.C., N.S.K.)
35670	0.000	294	35670	INDUSTRIAL FURNACES AND OVENS, N.S.K.
35671	0.440	675	35671	ELECTRIC INDUSTRIAL FURNACES AND OVENS, METAL PROCESSING

NEW SIC	4-FIRM CR WEISS	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
35672	0.430	972	35672	FUEL-FIRED INDUSTRIAL FURNACES AND OVENS, METAL PROCESSING
35673	0.400	1470	35673	HIGH FREQUENCY INDUCTION AND DIELECTRIC HEATING EQUIPMENT AND PARTS, ATTACHMENTS, AND COMPONENTS
35680	0.309	9750	35681	PLAIN BEARINGS AND BUSHINGS
			35683	OTHER MECHANICAL POWER TRANSMISSION EQUIPMENT, EXCEPT SPEED CHANGERS, DRIVES, AND GEARS
35690	0.000	1445	35690	GENERAL INDUSTRIAL MACHINERY, N.E.C., N.S.K.
35691	0.250	1774	35691	PACKING AND PACKAGING MACHINERY, N.E.C.
35692	0.290	2754	35692	FILTERS AND STRAINERS
35699	0.120	5355	35699	ALL OTHER GENERAL INDUSTRIAL MACHINERY, N.E.C.
35731	0.750	18843	35731	ELECTRONIC COMPUTING EQUIPMENT (EXCEPT PARTS AND ATTACHMENTS)
35732	0.520	27453	35732	PERIPHERAL EQUIPMENT FOR ELECTRONIC COMPUTERS
35733	0.630	14032	35733	PARTS AND ATTACHMENTS FOR ELECTRONIC COMPUTING EQUIPMENT
35740	0.495	6942	35742	ELECTRONIC CALCULATING MACHINES
			35745	PARTS AND ATTACHMENTS FOR ADDING, CALCULATING, ACCOUNTING MACHINES AND CASH REGISTERS (INCLUDES 35741, ADDING AND CALCULATING MACHINES EXCEPT ELECTRONIC; AND 35743 ACCOUNTING MACHINES AND CASH REGISTERS.)
35760	0.512	1821	35760	SCALES AND BALANCES, EXCEPT LABORATORY
35790	0.000	180	35790	OFFICE MACHINES, N.E.C., N.S.K.
35793	0.870	836	35793	DUPLICATION MACHINES
35795	0.770	1286	35795	MAILING, LETTER HANDLING, AND ADDRESSING MACHINES
35796	0.390	2547	35796	ALL OTHER OFFICE MACHINES, N.E.C. (INCLUDES 35794, DICTATING, TRANSCRIBING, AND RECORDING MACHINES.)
35798	0.840	5620	35798	PARTS AND ATTACHMENTS FOR ADDRESSING, DICTATING, DUPLICATING, AND OTHER OFFICE STORE MACHINES, N.E.C. (INCLUDES 357200, TYPEWRITERS, INCLUDED CODED MEDIA, PARTS AND ATTACHMENTS.)
35810	0.492	3063	35811	AUTOMATIC MERCHANDISING MACHINES
			35812	COIN-OPERATED MECHANISMS AND PARTS FOR AUTOMATIC MERCHANDISING MACHINES
35820	0.402	1853	35820	COMMERCIAL LAUNDRY EQUIPMENT

NEW SIC	4-FIRM CR WEISS	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
35851	0.450	16805	35851	HEAT TRANSFER EQUIPMENT, EXCEPT ROOM AND UNITARY AIRCONDITIONERS AND DEHUMIDIFIERS
35852	0.480	10706	35852	UNITARY AIR-CONDITIONERS
35853	0.290	4823	35853	COMMERCIAL REFRIGERATION EQUIPMENT
35854	0.720	10654	35854	COMPRESSORS AND COMPRESSOR UNITS, ALL REFRIGERANTS
35855	0.480	1468	35855	CONDENSING UNITS, ALL REFRIGERANTS
35856	0.540	6796	35856	ROOM AIR-CONDITIONERS AND DEHUMIDIFIERS
35857	0.440	5703	35857	OTHER REFRIGERATION AND AIR-CONDITIONING EQUIPMENT, INCLUDING SODA FOUNTAIN AND BEER DISPENSING EQUIPMENT
35858	0.340	3842	35858	WARM AIR FURNACES (EXCEPT FLOOR AND WALL) AND PARTS AND ATTACHMENTS
35860	0.371	1834	35860	MEASURING AND DISPENSING PUMPS
35890	0.000	882	35890	SERVICE INDUSTRY MACHINES, N.E.C., N.S.K.
35891	0.270	2170	35891	COMMERCIAL COOKING AND FOOD WARMING EQUIPMENT
35892	0.180	4965	35892	SERVICE INDUSTRY MACHINES AND PARTS
35893	0.490	627	35893	COMMERCIAL AND INDUSTRIAL VACUUM CLEANERS, INCLUDING PARTS AND ATTACHMENTS
35920	0.704	7919	35920	CARBURETORS, PISTONS, RINGS, AND VALVES, N.S.K.
			35921	CARBURETORS, NEW AND REBUILT
			35922	PISTONS AND PISTON RINGS
			35923	VALVES, INTAKE AND EXHAUST
35990	0.000	13058	35990	MACHINERY, EXCEPT ELECTRICAL, N.E.C., N.S.K.
35992	0.270	1892	35992	PNEUMATIC AND HYDRAULIC CYLINDERS
35994	0.120	4425	35994	MISCELLANEOUS MACHINERY PRODUCTS
35995	0.030	14258	35995	RECEIPTS FOR MACHINE SHOP JOB WORK
36120	0.000	249	36120	TRANSFORMERS, N.S.K.
36122	0.670	9139	36122	POWER AND DISTRIBUTION TRANSFORMERS, EXCEPT PARTS
36124	0.960	1606	36124	FLUORESCENT LAMP BALLASTS
36125	0.530	2253	36125	SPECIALTY TRANSFORMERS (EXCEPT FLUORESCENT LAMPBALLASTS)

NEW SIC	4-FIRM CR WEISS	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
36127	0.800	1114	36127	POWER REGULATORS, BOOSTERS, REACTORS, OTHER TRANSFORMERS, AND TRANSFORMER PARTS
36131	0.550	5971	36131	SWITCHGEAR, EXCEPT DUCTS AND RELAYS
36132	0.860	1827	36132	POWER CIRCUIT BREAKERS, ALL VOLTAGES
36133	0.600	5390	36133	LOW VOLTAGE PANELBOARDS AND DISTRIBUTION BOARDS AND OTHER SWITCHING AND INTERRUPTING DEVICES 750 VOLTS AND UNDER
36134	0.830	997	36134	FUSES AND FUSE EQUIPMENT, UNDER 2,300 VOLTS (EXCEPT POWER DISTRIBUTION CUT-OUTS)
36135	0.720	2830	36135	MOLDED CASE CIRCUIT BREAKERS, 750 VOLTS AND UNDER
36136	0.670	657	36136	DUCT, INCLUDING PLUG-IN UNITS AND ACCESSORIES, 750 VOLTS AND UNDER
36137	0.400	2234	36137	RELAYS, CONTROL CIRCUIT
36210	0.000	364	36210	MOTORS AND GENERATORS, N.S.K.
36211	0.470	11377	36211	FRACTIONAL HORSEPOWER MOTORS
36212	0.590	5677	36212	INTEGRAL HORSEPOWER MOTORS AND GENERATORS, EXCEPT FOR LAND TRANSPORTATION EQUIPMENT
36213	0.790	1063	36213	LAND TRANSPORTATION MOTORS, GENERATORS, AND CONTROL EQUIPMENT AND PARTS
36214	0.590	2473	36214	PRIME MOVER GENERATOR SETS, EXCEPT STEAM OR HYDRAULIC TURBINE
36217	0.770	2288	36217	MOTOR-GENERATOR SETS AND OTHER ROTATING EQUIPMENT, INCLUDING HERMETICS (FRACTIONAL)
36218	0.760	1229	36218	MOTOR-GENERATOR SETS AND OTHER ROTATING EQUIPMENT, INCLUDING HERMETICS (INTEGRAL)
36219	0.390	1886	36219	PARTS AND SUPPLIES FOR MOTORS, GENERATORS, AND MOTORGENERATOR SETS, EXCEPT FOR LAND TRANSPORTATION EQUIPMENT
36220	0.384	12456	36220	GENERAL INDUSTRY POWER CIRCUIT DEVICES AND CONTROLS AND PARTS
36230	0.374	5700	36231	ARC WELDING MACHINES, COMPONENTS, AND ACCESSORIES, EXCEPT ELECTRODES
			36232	ARC WELDING ELECTRODES, METAL
			36233	RESISTANCE WELDERS, COMPONENTS, ACCESSORIES, AND ELECTRODES
36240	0.720	3359	36240	CARBON AND GRAPHITE PRODUCTS, N.S.K.
			36241	ELECTRODES
			36249	ALL OTHER CARBON AND GRAPHITE PRODUCTS
36291	0.780	1124	36291	CAPACITORS FOR INDUSTRIAL USE, EXCEPT FOR ELECTRONIC APPLICATIONS

NEW SIC	4-FIRM CR WEISS	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
36292	0.410	1526	36292	RECTIFYING APPARATUS
36293	0.320	1459	36293	OTHER ELECTRICAL EQUIPMENT FOR INDUSTRIAL USE
36310	0.441	10270	36311	ELECTRIC HOUSEHOLD RANGES AND OVENS AND SURFACE COOKING UNIT EQUIPMENT AND PARTS, EXCEPT SMALL APPLIANCES
			36312	HOUSEHOLD OVENS AND RANGES, EQUIPMENT AND PARTS, EXCEPT ELECTRIC
36320	0.690	14194	36320	HOUSEHOLD REFRIGERATORS AND FREEZERS, N.S.K.
			36321	HOUSEHOLD REFRIGERATORS, INCLUDING COMBINATION REFRIGERATOR-FREEZERS
			36322	HOME AND FARM FREEZERS
36330	0.749	12899	36331	HOUSEHOLD MECHANICAL WASHING MACHINES, DRYERS, AND WASHER-DRYER COMBINATIONS
			36333	OTHER HOUSEHOLD LAUNDRY EQUIPMENT AND PARTS
36340	0.000	554	36340	ELECTRIC HOUSEWARES AND FANS, N.S.K.
36341	0.520	1277	36341	ELECTRIC FANS, EXCEPT INDUSTRIAL TYPE
36342	0.940	643	36342	ELECTRIC RAZORS AND DRY SHAVERS
36343	0.420	11216	36343	OTHER SMALL HOUSEHOLD ELECTRIC APPLIANCES
36344	0.510	790	36344	PARTS AND ATTACHMENTS FOR SMALL ELECTRIC APPLIANCES
36350	0.653	4392	36350	HOUSEHOLD VACUUM CLEANERS, INCLUDING PARTS AND ATTACHMENTS
36360	0.298	1521	36360	SEWING MACHINES AND PARTS, EXCLUDING CASES AND CABINETS SOLD SEPARATELY
36391	0.620	1199	36391	HOUSEHOLD WATER HEATERS, ELECTRIC
36392	0.670	1795	36392	HOUSEHOLD WATER HEATERS, EXCEPT ELECTRIC
36394	0.710	4179	36394	DISHWASHING MACHINES AND FOOD WASTE DISPOSERS
36399	0.500	864	36399	OTHER HOUSEHOLD APPLIANCES AND PARTS
36410	0.814	10691	36410	ELECTRIC LAMPS (BULBS ONLY), INCLUDING SEALED BEAM LAMPS
36430	0.251	12068	36430	CURRENT-CARRYING WIRING DEVICES, INCLUDING LIGHTNING RODS
36441	0.530	2223	36441	POLE, LINE, AND TRANSMISSION HARDWARE
36442	0.290	3937	36442	ELECTRICAL CONDUIT AND CONDUIT FITTINGS
36443	0.340	1959	36443	OTHER NONCURRENT-CARRYING WIRING DEVICES AND SUPPLIES

NEW SIC	4-FIRM CR WEISS	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
36450	0.243	7461	36450	RESIDENTIAL LIGHTING FIXTURES, N.S.K.
			36451	RESIDENTIAL TYPE ELECTRIC FIXTURES, EXCEPT PORTABLE
			36457	PORTABLE RESIDENTIAL TYPE LIGHTING FIXTURES AND PARTS AND ACCESSORIES FOR RESIDENTIAL LIGHTING FIXTURES
36460	0.236	7018	36462	COMMERCIAL AND INSTITUTIONAL-TYPE ELECTRIC LIGHTING FIXTURES
			36463	INDUSTRIAL-TYPE ELECTRIC LIGHTING FIXTURES AND PARTS
36470	0.612	3581	36470	VEHICULAR LIGHTING EQUIPMENT
36485	0.360	3165	36485	OUTDOOR LIGHTING EQUIPMENT
36489	0.350	1647	36489	OTHER ELECTRIC AND NONELECTRIC LIGHTING EQUIPMENT AND PARTS AND ACCESSORIES
36510	0.000	839	36510	RADIOS AND TV RECEIVING SETS, N.S.K.
36511	0.570	7545	36511	HOUSEHOLD AND AUTOMOBILE RADIOS, AND RADIO-PHONOGRAPH COMBINATIONS
36512	0.660	21487	36512	HOUSEHOLD TELEVISION RECEIVERS, INCLUDING TELEVISION COMBINATIONS
36514	0.360	3734	36514	RECORDERS, PHONOGRAPHS, AND RADIO AND TELEVISION CHASSIS
36515	0.260	2492	36515	SPEAKER SYSTEMS, MICROPHONES, HOME-TYPE ELECTRONIC KITS, AND COMMERCIAL SOUND EQUIPMENT, INCLUDING PUBLIC ADDRESS SYSTEMS
36520	0.458	5373	36520	PHONOGRAPH RECORDS, RECORD BLANKS, AND PRERECORDED TAPES
36610	0.858	39739	36611	TELEPHONE SWITCHING AND SWITCHBOARD EQUIPMENT
			36612	OTHER TELEPHONE AND TELEGRAPH (WIRE) APPARATUS, EQUIPMENT, AND COMPONENTS
36620	0.000	2072	36620	RADIO, TV COMMUNICATION EQUIPMENT, N.S.K.
36621	0.400	15548	36621	COMMERCIAL, INDUSTRIAL, AND MILITARY COMMUNICATION EQUIPMENT, EXCEPT TELEPHONE COMMUNICATION EQUIPMENT
36622	0.420	4297	36622	RADIO AND TELEVISION BROADCAST EQUIPMENT AND CLOSED
36623	0.240	3362	36623	INTERCOMMUNICATION EQUIPMENT (EXCEPT TELEPHONE AND TELEGRAPH) AND ELECTRIC ALARM AND SIGNAL SYSTEMS AND DEVICES
36624	0.460	10739	36624	ELECTRONIC NAVIGATIONAL AIDS (EXCEPT MISSILE-BORNE AND SPACE VEHICLE-BORNE EQUIPMENT)
36625	0.380	22640	36625	ELECTRONIC SEARCH AND DETECTION APPARATUS, INCLUDING RADAR, INFRARED AND SONAR
36626	0.270	14600	36626	ELECTRONIC MILITARY, INDUSTRIAL AND COMMERCIAL EQUIPMENT, N.E.C.

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NEW SIC	4-FIRM CR WEISS	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
36627	0.820	1247	36627	SPACE SATELLITE-BORNE COMMUNICATIONS SYSTEMS (COMPLETE PACKAGE)
36628	0.520	7778	36628	MISSLE-BORNE NAVIGATION AND GUIDANCE SYSTEMS AND EQUIPMENT
36629	0.580	1483	36629	MICROWAVE AND MOBILE TELEPHONE COMMUNICATION EQUIPMENT
36710	0.700	1896	36710	RECEIVING TYPE ELECTRON TUBES, EXCEPT CATHODE RAY
36720	0.820	6336	36720	CATHODE RAY PICTURE TUBES, INCLUDING REBUILT
36730	0.500	3662	36730	TRANSMITTAL, INDUSTRIAL, AND SPECIAL PURPOSE ELECTRON TUBES (EXCEPT X-RAY)
36740	0.448	23608	36740	SEMICONDUCTORS AND RELATED DEVICES, N.S.K.
			36741	INTEGRATED MICROCIRCUITS (SEMICONDUCTOR NETWORKS)
			36742	TRANSISTORS
			36743	DIODES AND RECTIFIERS
			36749	OTHER SEMICONDUCTOR DEVICES
36750	0.335	4544	36750	CAPACITORS FOR ELECTRONIC APPLICATIONS
36760	0.385	4381	36760	RESISTORS FOR ELECTRONIC APPLICATIONS
36770	0.136	3853	36770	COILS, TRANSFORMERS, REACTORS, AND CHOKES FOR ELECTRONIC APPLICATIONS
36780	0.463	5236	36780	ELECTRONIC CONNECTORS
36790	0.319	32098	36790	ELECTRONIC COMPONENTS, N.E.C.
36910	0.570	9527	36911	STORAGE BATTERIES, STARTING, LIGHTING, AND IGNITION (SLI) TYPE
			36912	STORAGE BATTERIES, OTHER THAN SLI TYPE, INCLUDING PARTS FOR STORAGE BATTERIES, ALL TYPES
36920	0.853	3167	36920	PRIMARY BATTERIES, DRY AND WET
36930	0.432	3830	36930	X-RAY EQUIPMENT, INCLUDING X-RAY TUBES AND ELECTROTHERAPEUTIC APPARATUS
36940	0.000	448	36940	ENGINE ELECTRICAL EQUIPMENT, N.S.K.
36941	0.430	1128	36941	IGNITION HARNESS AND CABLE SETS
36942	0.800	3821	36942	BATTERY CHARGING GENERATORS
36943	0.880	3137	36943	CRANKING MOTORS
36944	0.990	2903	36944	SPARK PLUGS

NEW SIC	4-FIRM CR WEISS	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
36945	0.630	4118	36945	OTHER COMPLETE ELECTRICAL EQUIPMENT FOR INTERNAL COMBUSTION ENGINES.
36946	0.620	2255	36946	COMPONENTS AND PARTS FOR ENGINE ELECTRICAL EQUIPMENT
36990	0.260	1472	36990	ELECTRICAL EQUIPMENT AND SUPPLIES, N.E.C., N.S.K.
36992	0.440	3320	36992	LAMP BULB COMPONENTS AND OTHER ELECTRICAL PRODUCTS
37110	0.000	270	37110	MOTOR VEHICLES AND CAR BODIES, N.S.K.
37111	0.990	292462	37111	PASSENGER CARS, KNOCKED DOWN OR ASSEMBLED, AND CHASSIS FOR SALE SEPARATELY
37112	0.840	95661	37112	TRUCK TRACTORS, TRUCK CHASSIS AND TRUCKS (CHASSIS OF OWN MANUFACTURE)
37113	0.800	2409	37113	BUSES (EXCEPT TROLLEY BUSES) AND FIRE DEPARTMENT VEHICLES, (CHASSIS OF OWN MANUFACTURE)
37115	0.960	19657	37115	PASSENGER CAR BODIES (INCLUDES 37114, COMBAT VEHICLES AND TACTICAL VEHICLES, EXCEPT TANKS)
37130	0.188	14440	37130	TRUCK AND BUS BODIES, N.S.K.
			37131	TRUCK, BUS, AND OTHER VEHICLE BODIES, EXCEPT KITS AND REBUILT PARTS
			37132	COMPLETE VEHICLES, EXCEPT PASSENGER CARS, PRODUCED ON PURCHASED CHASSIS
37140	0.562	194170	37141	PARTS AND ACCESSORIES FOR MOTOR VEHICLES, EXCLUDING KITS AND REBUILT PARTS
			37143	REBUILT ENGINES AND PARTS FOR MOTOR VEHICLES, EXCEPT CARBURETORS
37150	0.460	10790	37151	TRUCK TRAILERS AND CHASSIS (16,000 POUNDS PER AXLE OR OVER)
			37152	TRUCK TRAILERS AND CHASSIS (LESS THAN 10,000 POUNDS PER AXLE)
37211	0.740	28029	37211	COMPLETE AIRCRAFT, MILITARY TYPE
37212	0.740	4742	37212	COMPLETE AIRCRAFT, PERSONAL AND UTILITY TYPE
37213	0.970	27873	37213	COMPLETE AIRCRAFT, COMMERCIAL TRANSPORT TYPE
37214	0.630	3739	37214	MODIFICATIONS, CONVERSIONS, AND OVERHAUL OF PREVIOUSLY ACCEPTED AIRCRAFT
37216	0.770	10671	37216	OTHER AERONAUTICAL SERVICES ON AIRCRAFT
37240	0.715	30697	37241	AIRCRAFT ENGINES FOR U.S. MILITARY CUSTOMERS
			37242	AIRCRAFT ENGINES FOR OTHER THAN U.S. MILITARY CUSTOMERS
			37243	AERONAUTICAL SERVICES ON AIRCRAFT ENGINES
			37244	AIRCRAFT ENGINE PARTS AND ACCESSORIES
37281	0.310	31696	37281	AIRCRAFT PARTS AND ACCESSORIES, N.E.C.
37283	0.750	994	37283	RESEARCH AND DEVELOPMENT ON AIRCRAFT PARTS

NEW SIC	4-FIRM CR WEISS	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
37285	0.810	583	37285	AIRCRAFT PROPELLERS
37310	0.600	32007	37311	NONPROPELLED SHIPS, NEW CONSTRUCTION
			37312	SELF-PROPELLED U.S. MILITARY SHIPS, NEW CONSTRUCTION
			37313	SELF-PROPELLED NONMILITARY SHIPS, NEW CONSTRUCTION
			37314	REPAIR OF U.S. MILITARY SHIPS
			37316	REPAIR OF NONMILITARY SHIPS
37320	0.147	10311	37322	OUTBOARD MOTORBOATS, INCLUDING PREFABRICATED KITS
			37325	INBOARD MOTORBOATS, INCLUDING INBOARD-OUTDRIVE HOUSEBOATS
			37326	INBOARD-OUTDRIVE BOATS, EXCEPT HOUSEBOATS
			37327	ALL OTHER BOATS (SAILBOATS, ROWBOATS, CANOES, ETC.)
			37328	BOAT REPAIR
37430	0.543	22842	37431	LOCOMOTIVES AND PARTS (INCLUDES 37432, PASSENGER AND FREIGHT TRAIN CARS, NEW)
			37433	STREETCARS, PARTS AND ACCESSORIES FOR RAILROAD CARS AND STREETCARS, AND REBUILT PASSENGER AND FREIGHT TRAIN CARS
37511	0.700	3968	37511	BICYCLES AND PARTS
37512	0.650	1123	37512	MOTORCYCLES AND PARTS
37610	0.800	37053	37611	MISSILE SYSTEMS, EXCLUDING PROPULSION
			37612	SPACE VEHICLE SYSTEMS, EXCLUDING PROPULSION
			37613	RESEARCH AND DEVELOPMENT ON COMPLETE MISSILES
			37614	RESEARCH AND DEVELOPMENT ON COMPLETE SPACE VEHICLES
			37615	ALL OTHER SERVICES ON COMPLETE MISSILES AND SPACE VEHICLES
37640	0.730	7406	37645	COMPLETE MISSILE OR SPACE VEHICLE ENGINES
			37646	RESEARCH AND DEVELOPMENT ON COMPLETE MISSILE OR SPACE VEHICLE ENGINES
			37647	ALL OTHER SERVICES ON COMPLETE MISSILE OR SPACE VEHICLE ENGINES
			37648	MISSILE AND SPACE VEHICLE ENGINE PARTS AND ACCESSORIES
37690	0.520	8254	37692	MISSILE AND SPACE VEHICLE PARTS AND SUBASSEMBLIES, N.E.C.
			37694	RESEARCH AND DEVELOPMENT ON MISSILE AND SPACE VEHICLE PARTS AND COMPONENTS, N.E.C.
37920	0.200	12765	37921	RECREATION TYPE TRAILERS
			37922	CAMPING TRAILERS, CAMPERS, AND PICKUP COVERS
37950	0.829	2851	37950	TANKS AND TANK COMPONENTS
37993	0.900	541	37993	GOLF CARTS, SELF-PROPELLED
37994	0.850	2031	37994	SNOWMOBILES, SELF-PROPELLED

NEW SIC	4-FIRM CR WEISS	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
37999	0.200	4595	37999	OTHER TRANSPORTATION EQUIPMENT
38110	0.000	702	38110	ENGINEERING AND SCIENTIFIC INSTRUMENTS, N.S.K.
38111	0.350	5737	38111	AERONAUTICAL, NAUTICAL AND NAVIGATIONAL INSTRUMENTS
38112	0.200	3359	38112	LABORATORY AND SCIENTIFIC INSTRUMENTS
38113	0.450	1262	38113	SURVEYING AND DRAFTING INSTRUMENTS AND LABORATORY FURNITURE
38220	0.555	6581	38220	AUTOMATIC TEMPERATURE CONTROLS
38230	0.243	7947	38230	PROCESS CONTROL INSTRUMENTS
38240	0.000	8	38240	FLUID METERS AND COUNTING DEVICES, N.S.K.
38242	0.680	2077	38242	INTEGRATING METERS, NONELECTRICAL TYPE
38243	0.730	480	38243	COUNTING DEVICES
38244	0.820	701	38244	MOTOR VEHICLE INSTRUMENTS, EXCEPT ELECTRIC
38250	0.000	678	38250	INSTRUMENTS TO MEASURE ELECTRICITY, N.S.K.
38251	0.790	1695	38251	INTEGRATING INSTRUMENTS, ELECTRICAL
38252	0.450	8690	38252	TEST EQUIPMENT FOR TESTING ELECTRICAL, RADIO, AND COMMUNICATION CIRCUITS, AND MOTORS
38253	0.260	2234	38253	OTHER ELECTRICAL MEASURING INSTRUMENTS
38290	0.000	1124	38290	MEASURING AND CONTROLLING DEVICES, N.E.C., N.S.K.
38291	0.610	745	38291	AIRCRAFT ENGINE INSTRUMENTS, EXCEPT ELECTRIC
38292	0.250	1063	38292	PHYSICAL PROPERTIES TESTING AND INSPECTION EQUIPMENT
38293	0.500	945	38293	COMMERCIAL, METEOROLOGICAL, AND GENERAL PURPOSE INSTRUMENTS
38294	0.510	1982	38294	NUCLEAR RADIATION, DETECTION, AND MONITORING INSTRUMENTS
38320	0.390	5847	38321	OPTICAL INSTRUMENTS AND LENSES, EXCEPT SIGHTING AND FIRE-CONTROL EQUIPMENT
			38322	SIGHTING AND FIRE-CONTROL EQUIPMENT, MADE FROM LENSES, PRISMS, ETC., PRODUCED IN THE SAME PLANT
			38323	SIGHTING AND FIRE-CONTROL EQUIPMENT, MADE FROM PURCHASED LENSES
38410	0.307	9842	38410	SURGICAL AND MEDICAL INSTRUMENTS AND APPARATUS

NEW SIC	4-FIRM CR WEISS	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
38421	0.490	7820	38421	SURGICAL, ORTHOPEDIC, AND PROSTHETIC APPLIANCES AND SUPPLIES
38423	0.340	2260	38423	PERSONAL INDUSTRIAL SAFETY DEVICES
38424	0.670	500	38424	ELECTRONIC HEARING AIDS
38430	0.309	3523	38430	DENTAL EQUIPMENT AND SUPPLIES
38510	0.476	4835	38511	OPHTHALMIC FRONTS AND TEMPLES
			38512	OPHTHALMIC FOCUS LENSES, INCLUDING CONTACT LENSES
			38513	ALL OTHER OPHTHALMIC GOODS
38610	0.000	1607	38610	PHOTOGRAPHIC EQUIPMENT AND SUPPLIES, N.S.K.
38611	0.670	6165	38611	STILL PICTURE EQUIPMENT
38612	0.900	14551	38612	PHOTOCOPYING EQUIPMENT
38613	0.590	1916	38613	MOTION PICTURE EQUIPMENT
38614	0.800	1375	38614	MICROFILMING, BLUEPRINTING, BROWNPRINTING, AND WHITEPRINTING EQUIPMENT
38615	0.970	14276	38615	SENSITIZED PHOTOGRAPHIC FILM AND PLATES, EXCEPT X-RAY
38616	0.000	3764	38616	SENSITIZED PHOTOGRAPHIC PAPER AND CLOTH, SILVER HALIDE TYPE
38617	0.650	3062	38617	SENSITIZED PHOTOGRAPHIC PAPER AND CLOTH, EXCEPT SILVER HALIDE TYPE
38618	0.800	2862	38618	PREPARED PHOTOGRAPHIC CHEMICALS
38619	0.980	2976	38619	X-RAY FILM
38730	0.390	8808	38731	CLOCKS
			38734	WATCHES WITH IMPORTED MOVEMENTS
			38735	WATCHES WITH DOMESTIC MOVEMENTS AND PARTS FOR ALL CLOCKS AND WATCHES
			38737	WATCHCASES
39110	0.124	9818	39110	JEWELRY, PRECIOUS METALS, N.S.K.
			39111	JEWELRY, MADE OF PLATINUM METALS OR CARAT GOLD
			39112	JEWELRY, MADE OF PRECIOUS METALS, EXCEPT PLATINUM METALS AND CARAT GOLD
39140	0.422	3175	39141	SILVERWARE, PLATED WARE, AND STAINLESS STEEL WARE
			39142	FLATWARE
39150	0.075	3362	39151	JEWELERS' FINDINGS AND MATERIALS
			39152	LAPIDARY WORK AND DIAMOND CUTTING AND POLISHING
39311	0.660	1074	39311	PIANOS

NEW SIC	4-FIRM CR WEISS	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
39312	0.560	1883	39312	ORGANS
39313	0.640	546	39313	PIANO AND ORGAN PARTS
39314	0.400	1560	39314	OTHER MUSICAL INSTRUMENTS AND PARTS
39420	0.226	2779	39420	DOLLS AND STUFFED TOY ANIMALS
39440	0.291	15007	39440	GAMES, TOYS, CHILDREN'S VEHICLES, N.S.K.
			39441	GAMES, EXCLUDING TOYS
			39442	TOYS, EXCLUDING GAMES
			39443	BABY CARRIAGES AND CHILDREN'S VEHICLES, EXCEPT BICYCLES
39491	0.260	1677	39491	FISHING TACKLE AND EQUIPMENT
39492	0.460	2767	39492	GOLF EQUIPMENT
39494	0.380	1074	39494	PLAYGROUND, GYMNASIUM, AND GYMNASTIC EQUIPMENT
39495	0.340	8116	39495	OTHER SPORTING AND ATHLETIC GOODS
39510	0.439	3117	39510	PENS, MECHANICAL PENCILS, AND PENPOINTS
39521	0.520	631	39521	LEAD PENCILS AND CRAYONS
39522	0.550	1014	39522	ARTISTS' MATERIALS
39530	0.270	1634	39530	HAND STAMPS, STENCILS, AND OTHER MARKING DEVICES
39551	0.510	1500	39551	INKED RIBBONS, ALL TYPES
39552	0.460	1538	39552	CARBON PAPER, STENCIL PAPER, ETC.
39610	0.113	4417	39610	COSTUME JEWELRY AND COSTUME NOVELTIES, EXCEPT PRECIOUS METAL
39620	0.140	1018	39620	FEATHERS, PLUMES, AND ARTIFICIAL FLOWERS
39630	0.217	1031	39630	BUTTONS AND PARTS (EXCEPT OF PRECIOUS OR SEMIPRECIOUS METALS OR STONE)
39641	0.710	2545	39641	ZIPPERS AND SLIDE FASTENERS
39642	0.390	2657	39642	NEEDLES, PINS, FASTENERS (EXCEPT SLIDE), AND SIMILAR NOTIONS
39910	0.000	334	39910	BROOMS AND BRUSHES, N.S.K.
39911	0.240	605	39911	BROOMS

NEW SIC	4-FIRM CR WEISS	CENSUS VALUE OF SHIPMENTS	OLD SIC	DESCRIPTION
39912	0.450	1126	39912	PAINT AND VARNISH BRUSHES
39913	0.280	1864	39913	OTHER BRUSHES
39930	0.050	10892	39930	SIGNS AND ADVERTISING DISPLAYS, N.S.K.
			39931	LUMINOUS TUBING AND BULB SIGNS
			39932	NONELECTRIC SIGNS AND ADVERTISING DISPLAYS
			39933	ADVERTISING SPECIALTIES
39950	0.250	3879	39951	METAL CASKETS AND COFFINS, COMPLETELY LINED AND TRIMMED, ADULT SIZES ONLY
			39952	WOOD CASKETS AND COFFINS, COMPLETELY LINED AND TRIMMED, ADULT SIZES ONLY
			39953	OTHER CASKETS AND COFFINS AND METAL VAULTS
39960	0.881	3003	39960	HARD SURFACE FLOOR COVERINGS
39990	0.000	3175	39990	MANUFACTURING INDUSTRIES, N.E.C., N.S.K.
39991 *	0.660	1257	39991	CHEMICAL FIRE EXTINQUISHING EQUIPMENT AND PARTS
39993	0.730	816	39993	MATCHES
39994	0.350	1008	39994	CANDLES
39999	0.200	6216	39999	OTHER MISCELLANEOUS FABRICATED PRODUCTS, N.E.C. ESTABLISHMENT
* 39992	0.000	911	39992	Coin-operated amusement machines

Appendix A-3

The following industry matchings were used to determine whether the same 2 firms were ranked at the top of an industry in 1972 as were in 1950. Industries were omitted if no reasonably close matching industry could be found in the other year; if fewer than two firms out of the 1,000 largest samples reported in one year; if they were one of the miscellaneous or not elsewhere classified categories. The industry numbers listed are our assigned numbers as given in Appendix A-2.

APPENDIX A-3

1950	1972	1950	1972	1950	1972	1950	1972
20110	20110	20850	20850	22710	22710,20,90	24310	24310
210	210	900	170	910	910	330	520
220,50	220	910	994	930	930	440	410
230	230	920	790	940	940	910	910
240	240	950	870	950	950		
260	260	960	996	980	980		
310	910	970	970	990	990	25110	25110,20,40
331,2,4,5,8	330	980	980			210	210,20
336	332	991	991			310	310
337	322	992	992	23110	23110	410	410
340	340	993	993	210	210		
352	352	996	950	220	220		
353	353			230	230	26110	26110
354	354			270	270	120	210
371	920	21110	21110	280	280	411	410,11
372,73	370	210	210	340	350	412	412
410	410	310	310	350,60	370	414	413,14
420	470,30			410	410	510	420
430	430			420	420	610	430
510	510	22120	22810,20,30	910	910	710	510,20,30
520	520	130	110,210	920	920	740	550
610	610	230	840	930	930	910	450

Appendix A-3--(Continued)

1950	1972	1950	1972	1950	1972	1950	1972
710	650	410	410	940	940	930	493
720	660	510	510			992	492
730	670	520	520			993	540,1,2
810	860	530	530	24110	24110	994	471,72
820	820	540	540	210	210	996	495
830	830	550	590	220,320	350		
840	840	560	570	230,40,50	290		
27510	27510	28933	28444	32110	32110	33330	33330
710	710	934	445	210	210	415	395
820,30	820	941,993	710	290	294	418	397
910	910	942	994	312	315	517	510
920	530	950	950	410	410	526	530
930	930	970	791	540,50,90	590	527	540
940	940	980	991	610	610	910	129
		991	794	640	640	920	125,52,570
		992	792	691,2	690	930	126
28120	28121			710	710,20	995	991
190	193			720	750		
210	650	29110-19,20	29110	750	960		
230	210	510	510	810	810	34110	34110,20
240	220	520	520	910	910	211	211
250	230	990	990	922-27	920	212	212

1950	1972	1950	1972	1950	1972	1952	1972
260	920			930	930	220	232
342	349			950	950	230	230,31
413	414	30110	30110	970	970	240	233
415	410,11,13	210	210			250	250
421	412	310	310			291	297
423	423	992	696	33110	33120,1	292	292
424	424	993	695	120,21	122	293	293
510,30	510	994	697	122,3,4	123	295	294
520	160			126	124	391	333
710	730,40,62			130	130	395	334
210,20,60	20740	31110	31110	210	210	398	335
870	992	310	310	220	220	410	410
910	930	410	430,40,90	230	250	420	420
931	442	610	610	310	310	431	435,7,8,9
932	443	710	710	320	320	423	430
		720	720				
34433	34433	35312	35314	35710	35740	36214	36310
434	434	313	316	760	760	310	33570,76
440	440	315	320	791,92	810	410	36940-6
630	650,60,90	320	331	810	36330	510	410
	692,94,95,99	411	411-15	820	35820	612	511,12
680	710	421	470	830	36360	613	620-3
892	33150,51	422	420	840	36350	515	514

Appendix A-3--continued

1950	1972	1950	1972	1950	1972	1952	1972
893	33156	423	460	851,52	36320	622	730
894	33157	425	493	853	35853	623	710
912,3,4	34120	431	440	855	855	624	720
930	930	433	452	856	852,6,7	640	610
940	520	511	511	860	860	910	910
950	510	512,14	512,13	890	890	920	920
960	992	513	514	910	34940		
970	970	520	520	920	34980		
		530	531,2	930	35620	37150	37150
		540	540			171	110,11
35110	35110	550	550-55			172	112
191	191,92	591	591	36110	36430,41-3	173	113
192	193	592	592	120	240	174	115
193	196	593	593	140	210,1,2,3,4	175	140
194	199	594	594		217,8,9	290	281
195	195	611	610,1,2	151	125	310	310
211	231	612	613	152	122	320	320
212	312,13	613,4	630	161	131	410,20	430
213,227	240	640	640	170	230	511	512
221	230-8	650	370	192	291	512	511
222	239	660	660,80	211	341		
310,17,19	318,19	672	672	212	391		

1950	1972	1950	1972	1950	1972	1952	1972
311,630	350,60	680,90	673	213	342,3,4		
38111,211	38111	39811	39911				
113	112	812	912				
212	242	813	913				
213	230	820	24994				
214	244	830	39993				
310	320	930	930				
410	410	990	991				
423	26471						
424	38421						
510	510						
612	611						
613	615						
614	616,17						
615	618						
616,17	613						
710	730						
39120	39150						
140	140						
390	314						
410,30	440						
420	420						

Appendix A-3--continued

1950	1972	1950	1972	1950	1972	1952	1972
490	491,2,4,5						
510	510						
520	521						
530	530						
550	551,52						
630	630						
640	642						

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