

Labor Intensity by Size of Firm:
Contrasts Between Large and Medium-Sized Firms

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Fortune Magazine publishes annually a summary of data from the largest 500 industrial firms in the United States, with size defined by sales. Utilities and financial companies are excluded. This group is known colloquially as the "Fortune 500." The following data are for 1979.

Table 1: Employees per \$m of Net Worth, Net Income and Total Assets

<u>Size Group</u>	<u>Employees</u> <u>Ranked by NW</u>	<u>Net Worth Employees</u> <u>Ranked by NI</u>	<u>Total Assets</u> <u>Ranked by TA</u>
Top 10	22.0	19.3	10.8
Next 490	37.2	37.7	17.2
Middle 10	57.8	40.5	17.9
Bottom 10	93.5	58.1	40.3

The data show that the larger firms, and especially the top ten, are much less labor-intensive than smaller firms. (The top ten are so much larger than the average Fortune 500 firm that they possess 25.2% of all the net worth of the 500.)

Note that the method of ranking affects the outcome, a principle known as "regression fallacy." If we had ranked by employees rather than net worth the principle would have acted to weaken the findings. Ranking by NI (net income) is more neutral in this regard (but not completely so, because NI is related to NW). Statisticians you must watch like a hawk.

But why is the first column more extreme than the last one? That is because smaller firms use their credit more heavily than larger ones, as shown in Table 2.

Table 2: Net Worth as share of Total Assets

<u>Size Group</u>	<u>Ranked by NW</u>	<u>Ranked by TA</u>
Top 10	.49	.49
Next 490	.46	.47
Middle 10	.47	.46
Bottom 10	.33	.46

Table 2 illustrates the tendency of smaller firms to use their credit harder. The first column is biased to exaggerate the finding; the second column to offset it. Comparing the two, you see there really is a finding.