

INTRODUCTION

Each year the Department of Treasury, Internal Revenue Service releases summaries of the tax returns filed by 5.6 million corporations in the United States on the 1120S tax return form. The data is summarized and released by primary NAICS codes and provides a fascinating overview of American industry. The general NAICS code for foundries is 3315 and includes these metal casting categories:

33151 Ferrous Metal Foundries

331511	Iron Foundries
331512	Steel Investment Foundries
331513	Steel Foundries (except Investment)

33152 Nonferrous Metal Foundries

331521	Aluminum Die Casting Foundries
331522	Nonferrous (except aluminum) Die Casting Foundries
331524	Aluminum Foundries (except Die Casting)
331525	Copper Foundries (except Die Casting)
331528	Other Nonferrous Foundries (except Die Casting)

Unlike the SIC codes, jewelry manufacturing is not included. Jewelry manufacturing is now 339911 and 339914. Art foundries are included.

Unfortunately, there is a lag in the data so the data presented here is for the accounting period July, 2005 through June 2006. That was a relatively good period for metal casting. If more current data were presented, we are certain the profile would be glummer.

The data presented is typical for independent jobbing foundries and OEM's that are foundry dominated. The IRS reports data under the primary NAICS code for each company. Metal casting that is not included in this data are captive foundries and foundries consolidated under other corporations major function, even if the foundry is jobbing. Major captive foundry operators not in this data would include the automobile manufacturers, Caterpillar and similar companies. Also not included are jobbing foundries owned by larger corporations and consolidated in their financial statements. We suspect, for example, that Howmet, owned by Alcoa, would not be included in this data. If the profile presented here were to include all metal casting, we believe it would skew the information even more toward large companies.

A Lot of Small Companies Doing Little, A Few Large Companies Doing a Lot

The data is categorized based on Total Assets of the company – accounts receivable, inventories, net plant, property and equipment and other assets. Eleven categories cover metal casting. The information is released in two sub-categories – all companies and companies with positive Net Income.

The total receipts (sales, interest receipts, rent received, royalties and other income) for foundries is \$22.4 billion. The foundry industry in the U.S. is considered to be \$35 - \$36 billion. Since captive foundries and foundries consolidated under other NAICs codes are not included, the difference seems reasonable. This is about 62% of the estimated casting market.

Here is the breakdown by Total Assets for all metal casting companies:

Accounting Period 7/05 through 6/06

Total Asset Dollars in 000's	Zero Assets	Under 500	500 to 1,000	1,000 to 5,000	5,000 to 10,000	10,000 to 25,000
Count of All Companies	18	1,205	57	231	71	45
Percent Companies	1.07%	71.81%	3.40%	13.77%	4.23%	2.68%
Total Receipts	100,143	830,164	143,555	1,885,342	820,574	1,119,802
Percent Total Receipts	0.44%	3.64%	0.63%	8.27%	3.60%	4.91%
Average Total Receipts	5,564	689	2,519	8,162	11,557	24,884
Op. Margin before Officer Comp.	0.0%	12.3%	13.7%	3.9%	1.7%	7.9%
Average Operating Profit	-	85	345	318	196	1,966

Table 1 - Foundry Profile - to \$25 million in assets

Total Asset Dollars in 000's	25,000 to 50,000	50,000 to 100,000	100,000 to 250,000	250,000 to 500,000	500,000 to 2,500,000	Total
Count of All Companies	23	10	4	8	6	1,678
Percent Companies	1.37%	0.60%	0.24%	0.48%	0.36%	100.00%
Total Receipts	1,370,188	996,180	721,580	4,572,805	10,239,174	22,799,507
Percent Total Receipts	6.01%	4.37%	3.16%	20.06%	44.91%	100.00%
Average Total Receipts	59,573	99,618	180,395	571,601	1,706,529	13,587
Op. Margin before Officer Comp.	6.6%	7.3%	6.6%	3.5%	4.0%	4.7%
Average Operating Profit	3,932	7,272	11,906	20,006	68,261	639

Table 2 - Foundry Profile - Over \$25 million in Assets

As the data shows, a large number of foundries, 1,205 of the 1,678 listed (72%), generate only 3.64% of the total revenues and have average sales of \$689,000. There are 18 foundries (1.08% of all foundries) with Total Assets in excess of \$100 million that generate 68.13% of all total receipts.

There are 18 “foundries” with no Total Assets. We believe, based on this and other data released by the IRS, that these are manufacturer’s representatives mis-classified as foundries. Who ever heard of a jobbing foundry without accounts receivable, inventory or plant, property and equipment?

It is not unusual for smaller foundry owners to maintain the real estate in a separate company and lease them to the foundry. Even though they have common ownership, the real estate asset would not show on the foundry balance sheet. This would tend to shift them to a lower asset category. Keep in mind, however, the 1,205 foundries with assets under \$500,000 still only have average receipts of \$689,000.

The preponderance of small foundries does not surprise us. We attempt to contact every foundry owner in the United States at least one time per year to verify management names, address and whether they are still operating (right now, a lot are closing). It is not unusual for our call to go to an answering machine (we’re not thinking of voice mail systems here). Our database shows 1,951 owners who operate foundries. We don’t have a total count of facilities operating but suspect it is about 2,100. Here is the breakdown of ownership:

Foundry Type	Count	Percent
Jobbing	1,432	68%
Captive	462	22%
Art	180	8%
Jewelry	<u>35</u>	<u>2%</u>
Total	2,109	100%

Table 3 - Foundry Type

The total of 2,109 reflects that several foundries operate successfully as both jobbing and captive foundries. While hard core foundry operators tend to look down on art foundries and jewelry foundries, there are one or two major companies in each category. Matthews International, a Pittsburgh, Pennsylvania, based public company produces over \$120 million in art castings each year. Most are bronze memorial plaques produced in green sand on squeezers! Art Carved (LG Balfour) dominates the market for high school, college and other class rings.

A further indication of the preponderance of small foundries is that we can’t find a website for 511 of the 1,951 foundries on our database. Of those with websites, we can usually categorize their size based on information provided in the website.

This discrepancy between our 1,612 jobbing and art foundries and the IRS’s 1,678 is explained by the difference in how we categorize jobbing. We would consider McWane, Inc. a \$1 billion plus captive OEM foundry producing cast pipe, fittings, valves and similar products while the IRS would include them as a foundry.

Average Total Receipts climb as Total Assets climb with the six largest foundries averaging \$1.7 billion in sales each. While many would be surprised to see that many large foundries don’t forget that companies producing proprietary products that are primarily cast would be considered foundries. Included in these are several very large cast pipe

foundries, municipal castings and railroad castings such as wheels. There are several with sales well in excess of \$1 billion.

We are showing Operating Margin before Officer Compensation because in smaller foundries owners tend to minimize profits through owner salaries and bonuses. This is very evident in the two smaller categories with margins of 12.3% and 13.7%. The industry, as a whole has an Operating Margin before Officer Compensation of 4.7%. The Operating Margin drops to 3.1% for the industry when Officer Compensation is added back in. Keep in mind, this is operating margin.

The Profit Margin (Before Income Tax) for the industry is 5.0% and the Profit Margin (After Income Tax) is 4.1%. Why the difference? Operating Profit does not include non-operating income and non-operating expenses. Non-operating income includes interest income, rental income, royalties, and other miscellaneous receipts. Non-operating expenses include interest paid and taxes (state and local).

The Profitable Foundries

The IRS releases the information for all the companies in the NAICs code and for all companies with Net Income. This section compares all foundries with foundries that have net income. Remember, the industry was doing pretty well in the time period July 2005 through June 2006. The economy, and foundries, started to collapse in early to mid-2008.

Total Asset Dollars in 000's	Zero Assets	Under 500	500 to 1,000	1,000 to 5,000	5,000 to 10,000	10,000 to 25,000
All Companies	18	1,205	57	231	71	45
Companies w/ Net Income	-	717	57	197	31	42
Percent w/ Net Income	0.0%	59.5%	100.0%	85.3%	43.7%	93.3%
Companies w/o Net Income	18	488	-	34	40	3
Percent w/o Net Income	100.0%	40.5%	0.0%	14.7%	56.3%	6.7%

Table 4 - Net Income/No Net Income to \$25m Assets

Total Asset Dollars in 000's	IRS does not report data if there are too few companies					Total
	25,000 to 50,000	50,000 to 100,000	100,000 to 250,000	250,000 to 500,000	500,000 to 2,500,000	
All Companies	23	10	4	8	6	1,678
Companies w/ Net Income	19	-	-	-	-	1,063
Percent w/ Net Income	82.6%	0.0%	0.0%	0.0%	0.0%	63.3%
Companies w/o Net Income	4	10	4	8	6	615
Percent w/o Net Income	17.4%	100.0%	100.0%	100.0%	100.0%	36.7%

Table 5 - Net Income/No Net Income Over \$25m Assets

None of the companies with zero assets had net income. If they are in fact manufacturer's reps, it would stand to reason that income would be taken as salary. The percentage of companies with net income varies significantly by size range. Overall, 63% of the foundries reported net income and 37% did not. The IRS did not report data for any foundry with more than \$50 million in assets. If there are too few companies to protect the confidentiality of the companies, the IRS does not report data. We know several of the large OEM foundries (pipe manufacturers and similar companies) that were profitable. We know, also, that few, if any, of the large tier 1 automotive foundries were profitable.

Performance Data

This section provides an overview of how the foundries operate.

Operating Costs/Operating Income (%)

	All companies	Companies w/ Net Income
Cost of Operations	75.7%	74.6%
Salaries & Wages	5.1%	5.1%
Taxes Paid	1.8%	1.7%
Interest Paid	1.6%	1.4%
Depreciation	2.5%	2.4%
Amortization & Depletion	0.2%	0.2%
Pensions/Deferred Comp	0.6%	0.6%
Employee Benefits	2.4%	2.3%
Advertising	0.1%	0.1%
Other Expenses	5.3%	5.0%
Officers' Compensation	1.5%	1.5%
Operating Margin	3.1%	5.0%
Op. Margin before Officer Comp.	4.7%	6.5%

Table 6 - Operating Costs/Operating Income

In nearly every category, companies with net income perform slightly better than all companies. This, of course, is what you would expect. By implication, with Cost of Operations of 75.7% and 74.6%, gross profits would be in 24.3% and 25.4%. While the differences in each category don't seem like much, it all adds up. Our interpretation of this is that foundries must pay attention to all areas of their business to be profitable.

Selected Average Balance Sheet (\$000)

	All companies	Companies w/ Net Income
Net Receivables	1,884	2,530
Inventories	1,386	1,725
Net PP&E	2,953	3,857
Total Assets	10,850	14,845
Notes & Loans Payable	2,929	3,440
All Other Liabilities	2,683	3,608
Net Worth	5,238	7,797

Table 7 - Selected Balance Sheet Items

This chart shows selected balance sheet items. In each category, companies with net income are ahead of all companies. One category we can't explain is why Total Assets are so much greater than the sum of Net Receivables, Inventories and Net PP&E. Those three comprise the overwhelming bulk of Total Assets. While the IRS says Total Assets includes Net PP&E, the only thing that would make sense is if it were Gross PP&E. This mystery is consistent in each of the eleven asset categories and in other NAIC's codes.

Selected Financial Ratios

	All companies	Companies w/ Net Income
Current Ratio	1.6	1.8
Quick Ratio	0.9	1.0
Net Sales to Working Capital	8.8	7.6
Coverage Ratio	4.1	5.7
Total Asset Turnover	1.2	1.2
Inventory Turnover	7.3	7.8
Receivables Turnover	7.8	8.6
Total Liabilities to Net Worth	1.1	0.9
Current Assets to Working Capital	2.7	2.3
Current Liabilities to Working Capital	1.7	1.3
Working Capital to Net Sales	0.1	0.1
Inventory to Working Capital	1.0	0.9
Total Receipts to Cash Flow	11.4	9.8
Cost of Goods to Cash Flow	8.7	7.3
Cash Flow to Total Debt	0.2	0.3

Table 8 - Selected Financial Ratios

Current Ratio is Current Assets/Current Liabilities. Generally, 2.0 is considered the minimum for a sound company. Foundries are operating below what is considered minimal liquidity.

Quick Ratio is the sum of cash and accounts receivable divided by current assets. One is considered the minimum for a sound company and the industry is just barely there.

Net Sales to Working Capital (Net sales/current assets-current liabilities) is considered a measure of efficiency in working capital in making sales.

Coverage Ratio is EBIT divided by Interest, or the ability to pay the interest on debt. While this ratio is not too bad for the industry, remember this does not measure the ability to pay principle or re-invest in the business.

Total Asset Turnover (Net Sales/Total Assets) is an efficiency ratio that calculates its effectiveness in use of total assets. Since foundries have heavy capital requirements, it is expected this ratio would be low.

Inventory Turnover (Cost of Goods Sold/Average Inventory) is a good indicator of how well companies manage their production. Interestingly, larger companies don't seem to do as well as smaller companies. We suspect this is due to just-in-time requirements that cause foundries to produce and hold inventory. As more and more foundries implement lean manufacturing practices, we would expect to see this improve.

Receivable Turnover (Sales/Average Net Receivables) averages 7.8 (47 days) and 8.6 (42 days). Profitable companies tend to make sure they are paid more promptly than unprofitable companies. Interestingly, the 1,205 companies with assets under \$500,000 have a receivable turnover rate of 30.5 (12 days)!

Total Liabilities to Net Worth measures how much of the company is financed by its creditors as opposed to its owners. Foundries are about equally financed.

Current Assets to Working Capital measures how much of working capital is dependent on current assets.

Current Liabilities to Working Capital measures how much of working capital is dependent on current liabilities.

Working Capital to Net Sales (or Total Receipts) is a measure of how much working capital is required to support sales. It is valuable in projecting the impact of significant sales increases or declines.

Inventory to Working Capital is an important measure of liquidity. Inventory is usually worth less liquidated on the open market (unless converted to product sale) than it is on the books. While asset based lenders typically use 50% of inventory value as a lending base, scrap value is frequently less than that.

Total Receipts to Cash Flow (cash receipts minus cash disbursements) is a measure of the company's cash position.

Cost of Goods to Cash Flow is a valuable ratio in calculating projected costs of production, especially in periods of increasing or decreasing sales.

Cash Flow to Total Debt measures the ability of a company to service its total debt. Smaller foundries tend to have better ratios than larger companies.

	Selected Financial Factors (%)	
	All companies	Companies w/ Net Income
Debt Ratio	51.7%	47.5%
Return on Total Assets	8.2%	9.8%
Return on Equity Before Income Taxes	12.8%	15.4%
Return on Equity After Income Taxes	10.4%	12.8%
Profit Margin (Before Income Tax)	5.0%	6.6%
Profit Margin (After Income Tax)	4.1%	5.6%

Table 9 - Selected Financial Factors

As would be expected, in every category, companies with net income outperform all companies.

Debt Ratio (Total Liabilities/Total Assets) measures the ability of a foundry to pay all its debts. The 1,205 foundries with assets under \$500,000 carry a debt ratio of 120.3%, or more liabilities than assets.

Return on Total Assets (EBIT/Total Assets) is a measure of how well a company utilizes its asset base. As expected, the smallest category has the highest return on total assets simply because they have so few assets.

Return on Equity before Income Taxes (EBIT/Equity) measures how much return the company is getting on its net worth. The industry overall averages 10.4% to 12.8%. Foundries in the asset categories ranging from \$25m to \$250m average the best return with 21.0% to 32.5%. Companies with \$500 million to \$2.5 billion in total assets were the worst with only 9.3% return on equity before income taxes.

Return on Equity after Income Taxes (EBI/Equity) measures the impact of income taxes.

Profit Margin (Before Income Tax - EBT) is generally considered the key measure of a company's profitability. While all foundries average 5.0%, it ranges from a high of 7.5% for foundries with \$50m to \$100m in assets to a low of .8% for foundries with \$5m to \$10m in assets. We suspect foundries in this size category tend to sell more on price than on non-price factors.

Profit Margin (After Income Tax) shows the impact of income taxes.

What's It All Mean?

Ratios are important to companies in two areas. First, every company should be tracking their own key ratios monthly to spot aberrations and trends. They can be valuable indicators of areas needing attention. Foundries should identify key metrics for their company and chart them on "SPC" type charts. Variations outside norms should be explained and, if required, corrective action taken. Trends – both good and bad - should be noted and appropriate actions taken.

Second, comparing company ratios to appropriate industry ratios on a periodic basis can help direct a company to areas that would benefit from improvement.

Total industry average ratios are a bit like having one foot on a block of ice and one in a pan of boiling water. On average you're comfortable. To have value, the industry ratios should be as close to your company as possible. This includes size, type of foundry and, in some cases, industries served.

The Folk Group maintains a comprehensive database of foundry performance that may help you compare yourself to the industry or help you establish a regular routine of ratio monitoring within your company. For more information – call us at 1-215-340-9072 or e-mail us at jfolk@folkgroup.com.

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