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# Food Processing Assets

Anthony E. Gallo

U.S. food processing sector assets are valued at about \$360 billion, or about 12 percent of all manufacturing assets. Profit and sales returns on assets in food processing are among the highest in the U.S. economy. Foreign holdings comprise a significant portion of food processors' assets.

How resources are allocated is at the core of economics. How the factors of production are used can be measured by any number of indicators, including prices, productivity, output indices, national income accounting, value added, profitability, capacity utilization, and asset portfolio. Insofar as the U.S. food processing<sup>1</sup> industry is concerned, nearly all of these indicators have been well examined with the exception of asset allocation. The purpose of this research presentation is to give a comprehensive examination of the asset position of the U.S. food and tobacco processing sector. This research is important in analyzing the size, structure, conduct, and performance of the U.S. economy's largest manufacturing sector because:

1. A literature search shows that very little research has been done in examining the food industries' asset value.
2. Return on assets, stockholders equity, and sales present a varied scope of the profit performance of the food processing sector. An examination of asset values can explain why.
3. Measuring the performance of asset use is a measure of overall industry performance in industrial organization theory. Two of these indicators are the sales-to-asset turnover ratio and how it compares to other manufacturing industries sales to asset performance.

This examination is also timely for a couple of reasons. First, the food processing industry has gone through massive restructuring through lev-

eraged buyouts and mergers in recent years. The valuation of assets plays an important role in this process. Second, the food industry has assumed enormous debt in recent years, having gone from one of the least leveraged industries in the American economy to one of the most leveraged. Consequently, much of the focus on balance sheet analysis has involved the liability side, with little emphasis on asset use.

The data used for this analysis have several limitations. First, the data are largely from the Quarterly Financial Report of the Census Bureau and Securities Exchange Commission. They are accounting data, and therefore, limited in their use as measures of economic asset values. Second, the sector does not measure either assets among the 49 food processing industries, which range from sausages to breweries, or the sharp variation among firms within each of these industries. Third, diversified conglomerates dominate the food processing sector so that a meaningful breakdown by specific standard industrial classification code is virtually impossible since breakdowns by product category are rarely disseminated. Fourth, aggregate data are on an enterprise basis and also include nonfood products. Within those limitations, this research examines assets of U.S. food industry compared with all manufacturing assets as a generator of sales, the profit return on assets, and investors reaction to asset values as measured by the Dow Jones Stock Index.

## Industry Background

The food processing industry employed about 1.6 million people in 1994, about 200,000 fewer than were employed in 1958. Yet, food processors in 1994 were feeding 255 million people, an increase of 75 million since 1958.

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<sup>1</sup> Includes tobacco

Moreover, the industry has made major contributions to accommodate changing demographic lifestyles -- two-worker households, changing incomes, more single-member households -- by introducing convenience and microwave foods. Productivity growth varies sharply among different food processing industries, but most have shown increased labor productivity. Amidst all of this, the industry considerably raised debt levels in the 1980's, so that food is now one of the most leveraged industries in the American economy.

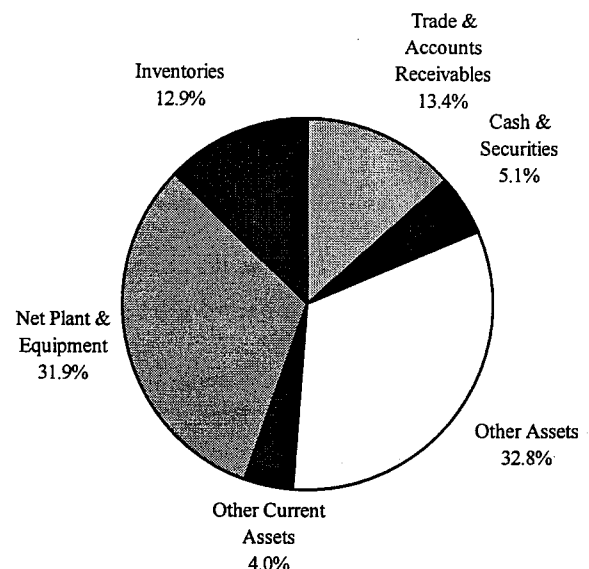
The U.S. food manufacturing sector, essentially a group of 49 industries ranging from meat-packing plants to breweries, has one of the most unique industrial organizations of any sector in the U.S. economy. Food manufacturing is the largest manufacturing industry in the American economy, accounting for about 14 percent of all manufacturing shipments. However, food processing is a slow-growth industry, growing at about half the pace of growth in the general economy. Consequently, processed foods contribution to GNP has fallen in the long term. But, concentration is rising sharply, with the top 50 firms accounting for 65 percent of value added in 1987 compared with 35 percent in 1963. The number of food processing firms fell from 33,000 in 1963 to 16,000 in 1987, but increased slightly in 1992. Over the 1980's, food processing was the leader in leveraged buyouts and mergers. Many of the 49 food processing industries are oligopolistic, characterized by intense price and nonprice competition. In 1994, food manufacturers introduced nearly 13,000 new products and spent about \$11 billion in direct consumer advertising. In terms of performance, food manufacturing is the second most profitable manufacturing industry in America, pharmaceuticals being first. Like other nondurable goods industries, food processing is one of the lowest spenders on research and development, although a great deal of research is purchased from suppliers.

### Asset Values

Assets of the entire U.S. manufacturing sector (including food) were valued at roughly \$3 trillion in 1994. The value of these assets are fairly evenly distributed between the durable manufacturing sector and the nondurable manu-

facturing sector. In addition, assets of the mining sector were valued at \$94 billion dollars, wholesale trade at \$365 billion, and retail trade at \$410 billion. Assets of the U.S. mining, retailing, wholesaling sectors totaled roughly \$869 billion. Assets of the service sector are excluded, as are small mining, wholesaling, and retailing firms because the value of these assets is likely to be very small. The manufacturing sector, therefore, accounts for approximately three-fourths of the nation's assets (excluding financial institutions). Figure 1 shows asset percentages for all U.S. manufacturers in 1994.

**Figure 1. Assets of All U.S. Manufacturers, 1994.**



Food manufacturers accounted for \$359 billion in assets in 1994, or roughly 11.9 percent of all manufacturing assets. Food ranked second only to transportation equipment (\$398 billion) in the value of assets. Among nondurable goods industries, food ranked first overwhelmingly, with roughly 23 percent of all assets, slightly below the industry's stock of shipments (see Figure 2).

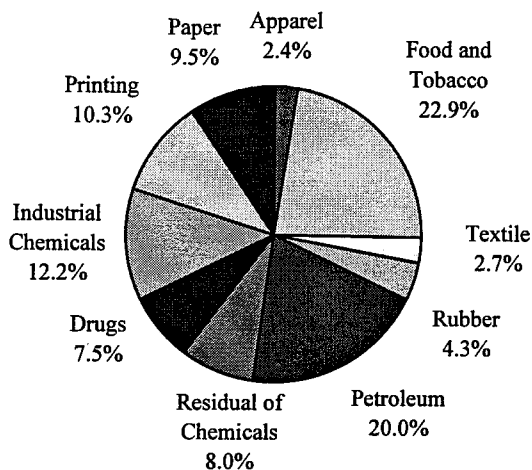
### Asset Allocation

Asset allocation for food processing differs from the aggregate average of all industries. Net plant and equipment accounted for about \$100 billion (or 28 percent) of the \$360 billion in assets

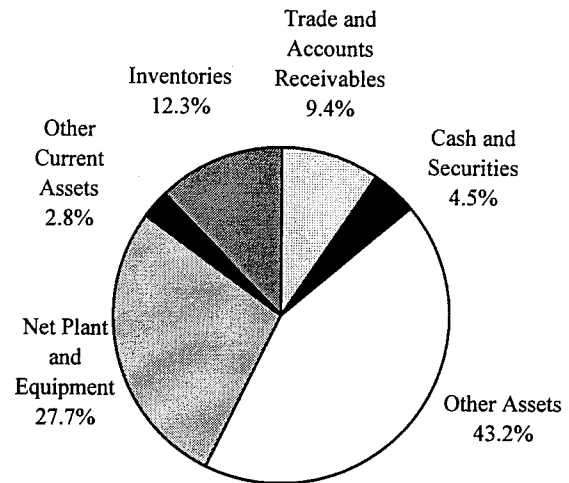
in 1994 (see Figure 3). Cash and securities, at roughly \$16 billion, accounted for less than 5 percent of total assets, while receivables and trade accounts amount to about \$34 billion, or less than 10 percent of the total. Inventories, at \$44 billion, in an industry where inventory control issues have been at the forefront of the Efficient Consumer Response, were the largest component of current assets.

Overwhelmingly, however, the largest portion of the food industry's assets are allocated to a category called all other noncurrent assets, including investment in nonconsolidated entities, long term investments, intangibles, etc. (see Table 1). Included in this category are patents, trademarks, and overseas investment. The Quarterly Financial Report (QFR) does not break this category down further. However, the overwhelming portion of this category, from an examination of stockholders' reports and Bureau of Economic Analysis data, is an estimated direct foreign investment position of \$70 billion. According to ERS, overseas sales of U.S. foreign subsidiaries amount to about a fourth of U.S. domestic sales. Moreover, the QFR has shown that remittances from foreign earnings normally account for about a fourth of U.S. food sector profits.

**Figure 2. Assets of Nondurable Goods Manufacturing, 1994.**



**Figure 3. U.S. Food Industry Assets, 1994.**



**Table 1. Food Processing Share of Nondurable Total Manufacturing Assets, 1994.**

Item	Share
Cash & Securities	28.7
Trade & Accounts Receivable	18.5
Inventories	27.8
Other Current Assets	18.0
Total Current Assets	23.0
Net Plant & Equip.	25.4
Other Assets	48.8
Long -Term Assets	32.0
All Assets	23.0
Sales	27.2

### Sales Return on Assets

Assets in the food industry generate a comparatively high volume of sales. The sales-to-assets turnover ratio measures what a dollar in assets generated in sales (Table 2). A dollar of assets in food generated approximately \$1.25 in sales compared with about \$1.09 in all manufacturing and 1.05 in nondurable manufacturing. Among nondurables, only textiles and apparel had higher turnover rates.

**Table 2. Sales-to-Assets Turnover Ratio: Food and Other Selected Industries.**

Sector	Ratio
Food and Tobacco	1.246
All Manufacturing	0.966
All Durable Manufacturing	1.125
All Nondurable Manufacturing	1.081
All Nondurable Less Food	0.984
Textile Mill Products	1.462
Apparel	1.838
Paper	0.990
Printing	0.979
Chemicals	0.820
Drugs	0.767
Petroleum	0.915

**Profit Return on Assets**

The profit return on assets for food is also extremely high (Table 3). Food's before-tax profit return at 10 percent is considerably above the average of all manufacturing (8.1 percent) and nondurable manufacture (8.7 percent). Only drugs (15 percent), and apparel (10.6 percent) were above food. Food's return on stockholders' equity at 29 percent is also one of the highest, reflecting in large part the very high leveraging in the industry (see Table 4).

Tables 5 shows the leverage ratios (stockholders' equity to debt) for the various industries.

**Table 3. Annual Rate of Profit on Total Assets.**

Sector	Annual % Rate
Food and Tobacco	10.00
All Manufacturing	8.06
All Nondurable Manufacturing	8.73
Textile Mill Products	8.35
Apparel	10.60
Paper	5.22
Printing	7.74
Chemicals	10.20
Drugs	14.90
Petroleum	7.01

**Table 4. Annual Rate of Profit on Stockholders' Equity.**

Sector	Annual % Rate
Food and Tobacco	28.9
All Manufacturing	23.0
All Nondurable Manufacturing	23.4
Textile Mill Products	20.8
Apparel	26.1
Paper	16.4
Printing	19.2
Chemicals	27.9
Drugs	35.0
Petroleum	16.9

**Table 5. Leverage Ratio: Total Stockholders' Equity to Debt.**

Sector	Ratio
Food and Tobacco	0.95
All Manufacturing	1.38
All Nondurable Manufacturing	1.18
Textile Mill Products	1.06
Apparel	1.28
Paper	0.75
Printing	1.25
Chemicals	1.37
Drugs	1.98
Petroleum	1.62

**Investor Perception**

Investors' perceptions of industry asset use is particularly reflected in the investors' stock appraisal. Table 6 shows the performance of the Dow Jones market index. Investors' appreciation in the food and beverage industry considerably outperformed both the overall market indicator or consumer noncyclical.

**Table 6. Dow Jones Market Index of Stock Prices - year end 1994 (1982 = 100).**

Sector	Index
Food	900
Beverages	1,045
Consumer Noncyclical	740
Dow Jones Total Index	430

## Conclusions

In summary, an examination of the food processing sector shows:

1. The assets of all U.S. food manufacturers, at about \$360 billion, accounts for about 12 percent of all U.S. manufacturing, considerably below food manufacturing's share of total manufacturing shipments.
2. Foreign holdings of U.S. food processors comprise a significant portion of their assets.
3. Current assets, trade accounts, and inventories account for about a fourth of all assets, considerably below most other manufacturing industries.
4. The sales-to-assets turnover ratio for food manufacturers is above the average for all industries, even nondurable industries.
5. Returns on assets compare well with all other industries. The return on stockholders' equity is considerably above the return on assets because of high leverage in food processing.

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