

The Restructuring of Frier Manufacturing

Frier Manufacturing is a producer of components for industrial ovens and also offers industrial oven repair and maintenance services. Linking components and services appeared to make economic sense, because Frier could both sell components to industrial oven OEMs and supply them to their services subsidiary. Its major clients are restaurants and fast-food chains, with virtually all of its business located in the United States. The founders, who no longer run day-to-day operations, have a controlling interest in Frier, with the remainder of ownership split among 20 minority shareholders, several of whom have large interests and are members of the board of directors. These owners, in their early sixties, were hoping to monetize their interests in Frier through either selling their shares outright or growing the firm to the point where an IPO would be a possibility. The board of directors recently appointed Richard Fox, a major shareholder, as CEO, with the charge to develop and implement a plan that will achieve the owners' financial objectives over the next several years.

To date, the financial performance of Frier Manufacturing has been disappointing. The weak economy and a customer base that increasingly depended on OEMs, rather than third-party suppliers, for repair and maintenance services forced Frier to reduce prices to remain competitive. Profit margins suffered as a result. Since the demand for industrial ovens remained depressed, the derived demand for components was also weak, resulting in a significant drag on sales and earnings. The one bright spot was that the demand for replacement components was increasing at a healthy clip, because end users, facing a weak economy, were inclined to repair old industrial ovens rather than replace them with new equipment. Since the volume of components per order is less for replacement orders than when new ovens are produced, Frier was not reaping the economies of scale that would normally accrue when the business was driven by the demand for industrial ovens.

Although Richard Fox knew the industrial oven business very well, he was concerned about suffering from the myopia that accompanies the

strategic vision of CEOs who are too close to the businesses they run. He knew he needed a brainstorming partner to help him think through the critical strategic, operational, and valuation issues that were sure to emerge as he embarked on his journey to stoke Frier's growth engine. The consulting firm Fox hired proposed to use the value circle framework as the point of departure.

INITIATING THE VALUE CIRCLE FRAMEWORK

To begin the evaluation process, the consulting firm first reviewed Frier's basic business structure. Figure 3.1 shows that Frier Manufacturing reported \$20 million in revenue, a before-tax profit of \$1.75 million and a before-tax profit margin of 8.75 percent. Its two strategic business units (SBUs), components and services, reported profit margins of 10 percent and 5 percent, respectively. On first pass, Fox was surprised that the margins in the service business were so low, but after further thought he realized that Frier did not have service contracts in place, and thus Frier was incurring marketing costs that its OEM competitors, for the most part, did not have to absorb. Clearly, this was an area that required further exploration, and as the analysis proceeded, it became a central focus of the consulting team. While the components business was carrying the firm, and its margins were comparable with other firms in the industry, Fox wondered whether production and perhaps distribution efficiencies were possible beyond those that had already been put in place by the previous CEO.

To understand the valuation implications of Frier's past financial performance, he asked the consulting team to value Frier's equity at the end of each month between 1998 and 2002.¹ These equity valuations were equivalent to common stock prices of public firms. Hence, Fox reasoned, and the

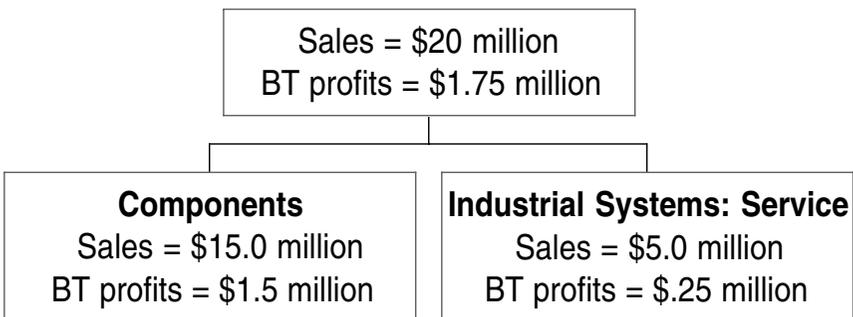


FIGURE 3.1 Financial Overview: Frier Manufacturing

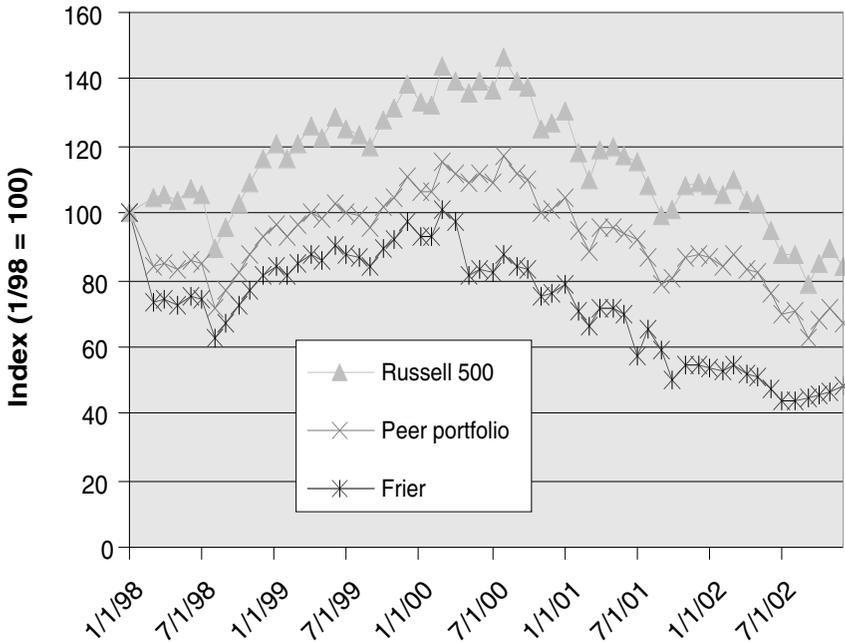


FIGURE 3.2 Comparative Stock Performance: Monthly

consulting firm concurred, that Frier’s month-end equity values could be compared to both the broad stock market, measured by the performance of the Russell 5000, and a selected public firm peer group. This would answer a nagging question posed by the board: Would they have been better off investing in the public market than hoping to hit a home run by investing in Frier? Remember, these board members were owners, albeit minority shareholders, but they intuitively believed that they had made a mistake, and they wanted to know how much it cost them. Figure 3.2 shows the comparative equity analysis.

Richard Fox noted that over the past five years, Frier’s equity performance lagged behind that of a portfolio of peer firms and the broader market index. These findings confirmed the worst fears of the board. Although they knew that Frier had underperformed, which was the stimulus for hiring Richard Fox in the first place, they had no idea how bad things really were. The valuation snapshots provided by their accounting firm at each year-end meeting belied the significance of the firm’s poor performance.

To say the board was shocked by this analysis was an understatement. The question was how to proceed from there and, more important, how to

meet the ultimate objective of monetizing their ownership. How might they get the business to a point that would make this objective a reality? The analysis made it clear to the board that reported earnings offered not only an incomplete picture of firm performance, but often a highly inaccurate one, particularly when the firm's earnings, as in Frier's case, had actually shown an increase, albeit a modest one. They became convinced that whatever the direction of earnings, if Frier's equity valuation was not increasing, Frier's performance was not only unacceptable, but worse, Frier was not on a path to meet its central objective of maximizing the value of ownership equity.

Before Richard Fox began to explore a restructuring plan, he wanted to know the valuation implications of three scenarios. The first assumed no growth and no debt. The second adopted the no-growth assumption and assumed that the assets would be financed partially with debt. The debt level determined by the consulting team analysis was the one that maximized Frier's equity value or its optimal capital structure. The third valuation scenario estimated the value of the firm if the strategic plans of Fox's predecessor were carried out and financed at the optimal capital structure. The initial results are shown in Table 3.1.

The consultant team summarized the results of their analysis and presented them to Richard Fox:

- The optimal or target capital structure for Frier Manufacturing is 78 percent equity and 22 percent debt.
- Although each business unit has some investment opportunities that can be expected to increase Frier's value above its cash cow value, in

TABLE 3.1 Cash Cow, Adjusted Cash Cow, and Going-Concern Value of Frier Manufacturing (\$ Millions)

SBU	Cash Cow Value	Adjusted Cash Cow Value	Going-Concern Value: Investment and Sales Grow at Historical Rates
Components	\$18.00	\$26.00	\$27.00
Service	\$6.00	\$9.00	\$10.00
Total value of units	\$24.00	\$35.00	\$37.00
Size premium*	2.50	2.50	2.50
Total firm value	\$26.50	\$37.50	\$39.50
Mkt. value of debt	0	\$8.25	\$8.69
Equity value	\$26.50	\$29.25	\$30.81

*Since Frier is larger than each SBU, it is accorded a lower cost of capital than each unit individually. This means that Frier is worth more than the aggregation of each SBU's value. The difference is the value created simply due to size.

terms of the total firm, the investment strategy outlined by Fox's predecessor adds a little less than 6 percent in value relative to Frier's adjusted cash cow value.

Richard Fox was intrigued and at the same time puzzled by the fact that historical investment rates generated such small increases in value. It was clear that the firm was earning rates of return that were only marginally greater than the firm's cost of capital, and therefore his focus turned to what could be done internally to improve the firm's cash flow prospects.

INTERNAL OPPORTUNITIES

The consultant team worked with Fox to determine how best to develop estimates for the four critical determinants of firm cash flow and their impact on the values of each of the business units. These four determinants, or value drivers, are:

1. Sales volume growth.
2. Productivity growth.
3. Change in the ratio of output price to input price.
4. Change in fixed and working capital requirements.

Sales

Sales volume increases depend on four critical factors: (1) growth of new and existing customer markets for each SBU's products and/or services, (2) sensitivity of customer demand to changing output prices (i.e., elasticity of demand), (3) changing quality standards of product/service performance, and (4) timing of introduction of new products and services.

Margin Improvements

Margins increase when productivity increases and when output prices rise relative to input prices. The relationship of both to margin improvement is shown in Equation 3.1. Increases in productivity or efficiency allow the firm to produce the same volume of goods with a lower resource base or increase volume with no increase in the level of resources. In either case, output per unit of input rises.

Determinants of the Margin Ratio

$$\begin{aligned} \text{Margin ratio} &= \text{operating profits (\$)} / \text{sales (\$)} \\ \text{Margin ratio} &= 1 - (Q_I/Q_O)(P_I/P_O) \end{aligned} \tag{3.1}$$

where Q_I = weighted average input
 Q_O = weighted average output
 P_I = weighted average input price
 P_O = weighted average output price

The ratio of Q_I/Q_O is the inverse of productivity. Thus, when productivity increases, this ratio is lowered and the margin is thereby increased, all else remaining unchanged. This new margin is applied to each dollar of sales, thereby permanently raising the firm's cash flow. Again, whether firm value increases depends on the incremental capital expenditures that the productivity improvement requires. In those cases where the measured efficiency improvement is entirely the result of management deciding to downsize, the amount of additional capital required is likely to be small. Thus, to the extent such downsizing does not result in any deterioration in the benefits customers expect from the firm's products or services, this strategy will create a significant increase in firm value.

In general, however, productivity improvement requires an increase in fixed capital. Such outlays might include expenditures for redesigning a factory floor, retraining workers, implementing just-in-time inventory procedures, and updating the firm's computer systems. Feldman and Sullivan have shown that because productivity increases have a long-lasting impact on firm cash flow, investors tend to place a large value on such increments relative to the value created by other value drivers.²

In addition to productivity increases, margin improvements can also result from a decrease in relative prices, or the ratio of an input price index to an output price index. Since a firm uses many inputs to produce its product or service, one can think of the firm's input price as a weighted average of prices of each of the individual inputs used by the firm in its production process relative to that at a base year. For example, if 50 percent of a firm's total cost were labor and the remainder represented the purchase of metal, the firm's weighted average input price index can be approximated as $0.5 \times (1.20) + 0.5 \times (1.10) = 1.15$. The 1.15 means that the total weighted average input price is 15 percent higher than in a predetermined base year. If one assumes that the output price index for this firm is 1.30, then the ratio of 1.15 to 1.30 is the inverse of the unit price margin. In this example, the firm's unit price margin is 13 percent per unit.

Table 3.2 provides an example of how changes in productivity and relative prices are likely to impact a firm's margin. Using the formula in Equation 3.1 and base case data, Table 3.2 shows that the firm's base case margin is 20 percent. If either relative prices or the inverse of productivity decrease by 10 percent, the margin will increase by 8 percentage points above its base case value. If both increase by 10 percent, the margin increases by 15 percentage points.

TABLE 3.2 Impact of Increase in Productivity and Relative Price on a Firm’s Profit Margin

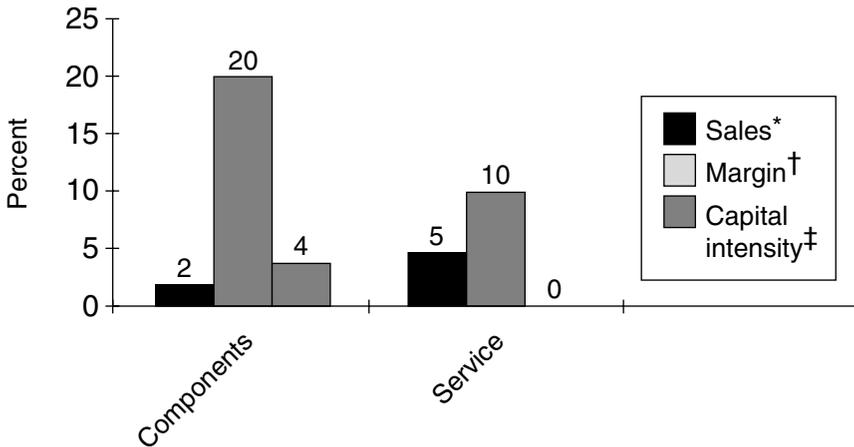
Base Case:	Revenues = \$1,000		
	Total costs = \$800		
	Output price index value = 1.30		
	Input price index value = 1.15		
	Margin = 20%		
Relative Price Productivity	Base Case		10% Increase
Base case	20%		28%
10% increase	28%		35%

RESTRUCTURING FRIER MANUFACTURING

While Richard Fox was familiar with the various value-driver concepts, he was still unclear about the relationship between various strategic options and what each implied for the assumed values of the value drivers. To help management better understand the relationship between alternative strategies, the calibration of value drivers, and the value of each SBU, the consultant team performed a scenario analysis. This exercise offered insights into which of the value drivers created the most value for Frier, and what their magnitude needed to be to generate the desired effect on the value of Frier. Fox understood that, strategically, Frier needed to confront the business issue that customers were purchasing service contracts from industrial oven OEMs rather than from firms like Frier. Thus, having an OEM SBU would strategically leverage both the components and service divisions. He therefore instructed the consultant team to explore ways that would yield more cash flow from his predecessor’s plan, and, in addition, he suggested to the team that they consider the option of investing internally to create an OEM manufacturer of industrial ovens. The first-stage results of this exercise are shown in Figure 3.3

The results of this analysis, shown in Table 3.1, suggest the following conclusions:

- Relative to other value drivers, margins improvements created the most value. Because Frier had little product pricing power and little leverage with its suppliers, productivity increases were the only source for these margin improvements.
- Reducing the amount of capital needed to increase output adds value to the component business, suggesting that a less capital-intensive production process would not compromise quality, and thus would not hurt future sales.



*Sales = 1% increase in sales growth.

†Margin increases by one percentage point (e.g., from 12% to 13%).

‡Capital intensity declines by 0.10 (e.g., from 0.25 times the change in sales to 0.15 times the change in sales).

FIGURE 3.3 Scenario Analysis: Percent Increase from Going-Concern Value Resulting from Changes in Value Drivers

- The service business had relatively little fixed capital requirements, although it does have working capital needs. The analysis indicated that working capital improvements would not yield any additional value indicating that Frier has reached its optimal efficiency level in this area.
- The sales volume-induced valuation increase for both SBUs was small because each dollar of sales required additional investment that did not generate a sufficient return relative to Frier's cost of financial capital.

Table 3.3 shows the valuation implications of the preceding analysis, revealing that Frier's value can be increased significantly through margin improvement. In addition, creating an industrial oven division, despite the hefty investment required, could add value to the overall operation. Richard Fox, delighted by this outcome because it validated his gut feeling about the firm's direction, was nevertheless surprised that creating an industrial oven SBU did not create additional value. The consulting team suggested that creating a business from scratch has start-up costs that buying a business in the industry would not have. The most daunting costs were those associated with creating name recognition. Surprisingly, Frier was known as a components shop; it was thought of as a low-cost provider of components, not as

a high-value integrated manufacturer of industrial ovens. For Frier to earn the confidence of customers that it could deliver a high-quality, low-cost, industrial oven came at a price that Fox had not bargained for. He asked the consulting team to explore acquisition alternatives and to identify several candidates. The targets could be U.S. or foreign; however, because most of Frier’s business was in the United States, an American target would be preferred (but not required).

At the time the consulting team was initiating its acquisition analysis, representatives of HP, a wholly owned industrial oven subsidiary of a large public firm, contacted Fox about a possible buyout. HP needed to expand its components business, since purchasing from contract shops like Frier was costly in terms of long delivery times as well as receiving products of poor quality that could not be used in the industrial oven production process. Having control of the upstream operations was critical to HP improving its competitive position in the marketplace. Relative to other businesses owned by its parent, HP made a small value contribution, in part because it was small relative to the other businesses owned by the parent, but more important, its management had not been successful in transforming the business into a market leader. HP’s management convinced its parent that a successful acquisition strategy would allow HP to establish market dominance and thus create the value that the parent was looking for. Discussions began in earnest. As the parties began to address the terms of a sale and this information was communicated to parent management, it became clear that divesting HP was in the best interest of the parent. Fox, not totally shocked by the change of direction, realized that acquiring HP at the right price would be a good deal for Frier.

TABLE 3.3 Internal Growth Value: Frier Manufacturing (\$ Millions)

	Going-Concern Value	Internal Growth Value Strategies (Sources)
Components	\$27.00	\$32.40 [margin]
Service	\$10.00	\$11.50 [sales + margin]
Industrial systems		Value created = \$10.00
		Investment cost = \$10.00
		Net value = \$0
Total value of units	\$37.00	\$43.90
□ Size premium	\$2.50	\$3.50
Total firm value	\$39.50	\$47.40
Market value of debt	8.69	\$10.43
Equity value	\$30.81	\$36.97

Before Fox moved forward on the acquisition, he needed to know whether Frier could purchase HP's subsidiary at a price that was below the cost of Frier creating the business on its own. The consulting team had determined that the investment cost to create the oven division would be \$12 million, which was about equal to the value of cash flows the division was expected to create. Creating the oven division did not appear to be a wise investment. HP's parent realized that the performance of the subsidiary would never meet the financial objectives set for it by the parent; managing the operation would require a great deal of management time with very little payoff, and it would prevent management from taking advantage of other activities that would create value for the parent's shareholders. HP's management knew that Frier needed an industrial oven division as a catalyst for its other businesses, and, given this need, they believed they could extract a relatively high price for its oven business.

In the end, Frier paid \$10 million for HP's industrial oven division. The present value of the expected cash flows was \$12 million, so the net value created by the acquisition was \$2 million. The value created by internal improvements and the acquisition resulted in Frier being worth \$49.40 million.

THE FINAL DEAL STRUCTURE

The acquisition was a cash transaction and therefore taxable. Taxable acquisitions of subsidiaries can be structured in one of three ways. The structure chosen is always the one that minimizes the after-tax cost of the transaction to both the buyer and the seller. The consulting team reviewed the various options with Fox in some detail. The three basic taxable structures in which a corporation can sell a subsidiary are:

1. A taxable asset sale.
2. A taxable stock sale.
3. A taxable stock sale with a 338(h)(10) election.

In an asset sale, the net assets are transferred to the buyer, and the seller receives cash. In this case, the selling entity does not disappear, but rather its balance sheet reflects that its net assets have been exchanged for cash. In a stock sale, the acquirer purchases the stock of the target. The acquirer effectively purchases all the assets and liabilities of the target, and the target becomes a subsidiary of the acquirer post acquisition.

An acquirer and a divesting parent can structure the sale to be a stock sale while treating the transaction as an asset sale for tax purposes. Section 338(h)(10) provides a way to retain the favorable tax treatment of an asset sale without incurring the nontax costs of an asset sale. Under 338(h)(10), a sale of subsidiary stock can be taxed as an asset sale if both the buyer and

seller agree to structure the transaction in this way. In a qualifying stock purchase with at least 80 percent of the target's stock obtained during a 12-month period, the divesting parent and the acquirer can jointly make a 338(h)(10) election. The taxable gain or loss on the transaction is calculated as the acquisition price less the divesting parent's basis in the net assets of the target. No tax is assessed on the difference between the purchase price and the divesting parent's book value basis in the stock.

The consultant team advised Fox that an asset transaction rather than a stock transaction was preferred and a 338(h)(10) was not optimal. There are two advantages to an asset sale. The first relates to the present value of tax benefits that result from enhanced depreciation and amortization write-offs. These emerge because the lower book value of purchased assets on the seller's balance sheet can now be stepped up to their fair market value on the acquirer's balance sheet, and depreciation and amortization schedules can now be applied to these higher values. Second, by purchasing assets rather than stock, the acquirer is not liable for past transgressions of the target's management that might emerge during the postacquisition period and that due diligence could never be expected to identify, let alone value. An asset sale severs the legal connection between the buyer and seller, whereas a stock sale does not.

In contrast, a 338(h)(10) election preserves the former advantage of an asset purchase, but not the latter. Generally, a 338(h)(10) election will be demanded by the seller when the seller's basis in stock exceeds its basis in the net assets of the divested entity. This typically occurs when the divested subsidiary was not developed organically but was developed and expanded after it was acquired. In cases where the divesting parent internally generates a subsidiary, as was the case with HP, the seller is typically indifferent about how the deal is structured.

The deal was finalized as an asset transaction. Frier paid \$10 million for HP's subsidiary. Frier purchased both tangible and intangible assets. Purchased tangible assets included equipment, material inventory, and receivables. Frier leased HP's manufacturing plant. Intangibles included patents, trade name, and HP's customer list.

THE CONTROL VALUE

Richard Fox was very successful in integrating HP into Frier's operations. Frier's cash flow grew at a rapid rate, and the hoped-for economies of scale in the component business emerged when management aligned the production needs of the industrial oven division with component production schedules. In addition, cash flow from Frier's industrial oven service business began to grow rapidly, since Frier was now an OEM. Two years after the acquisition, Fox

engaged a consulting firm to determine whether a larger firm would have some interest in purchasing a restructured Frier. Frier's financials had not only shown marked improvement since the acquisition of the HP subsidiary, but the firm's cash flow was far more certain. In short, the valuation-creation strategy employed by Frier set the stage for the ultimate liquidity event that the board and the other owners were hoping for when Fox was appointed CEO.

The size of the control gap depends on three critical factors. The first is the nature of the buyer, as noted earlier in this chapter. The second is the competitive atmosphere of the buyout market. The third is the amount of liquidity available in the marketplace. During the mid-1980s and for most of the 1990s, each of the factors contributed to a thriving mergers and acquisitions (M&A) market. At the turn of the twenty-first century, these factors were not nearly as positive, as both a weak domestic economy and a high-risk global economic and political environment reduced the willingness of investors, particularly angel investors, private equity groups, and venture capitalists, from committing capital. This unwillingness spilled over to the established private business transaction market and influenced both the demand and the timing of the interest in Frier. However, in late 2002, several European firms expressed an interest in acquiring Frier. They each wanted a larger share of the U.S. market, and while several had a U.S. presence, they were not leading competitors to Frier in the U.S. market. After in-depth discussions with several potential acquirers, the consulting team suggested that Frier request all interested parties to submit closed bids by a fixed date. Frier would then negotiate with the winning bidder. The winner was willing to pay Frier a 30 percent premium above its fair market value. In large measure, this premium reflected the obvious synergies between the acquirer and Frier. The deal closed on March 30, 2003.