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# Do Your Business Units Create Shareholder Value?

Enrique R. Arzac



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*Burdened with a division that has been losing money for five years, what does a top manager do? As the head of a business unit that is just breaking even and that could go either way in the coming decade, how does a middle manager judge in which strategic direction to take it? These are among the most important issues that an executive faces in his or her business life. More often than not, a decision is reached only after years of “getting by,” years in which the parent company either ignores complex ways to revamp the troublesome division or the reality that the division should be divested.*

*In his clear extension of the work of William E. Fruhan, Jr. and others, the author has developed a formula to help managers evaluate the potential for value creation or destruction at the level of business units, rather than the whole corporation. Using basic business and accounting terminology, he provides managers with a new way to look at their business units that allows them to judge their performance early, rather than too late, in the business cycle.*

Some companies consistently enjoy share prices that exceed book value. Such value creators range

from giants like Coca-Cola, IBM, and Procter & Gamble to less-known small and medium-sized companies like Pall and Shoney's. Other enterprises trade below book value year after year, in both bear and bull markets.

Many managers believe that these differences in price to book ratio do not stem from real differences in competitive performance but rather from the capriciousness of the stock market. I do not hold that view. I believe that, over the long term, the stock market responds rationally to the adoption of business strategies that change the level and quality of a company's future cash flows. Most important, evidence shows that—given some exceptions—the stock market processes available strategic information efficiently.<sup>1</sup>

Accepting this premise has two important implications for managers. The first is that they should not waste their time blaming a share price below book value on the perversity of investors. The second is that they should expect the stock market to look beyond the short term and to recognize strategies that create value.

Even if they acknowledge the long-term rationality of the stock market, however, many managers say that believing in the goal of value creation and

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*Mr. Arzac is professor of finance, Graduate School of Business, Columbia University. A former management consultant for Ernst and Ernst and chief economist of the Latin American Economic Research Foundation, Arzac has been consultant to several multinational corporations as well as vice dean for academic affairs at Columbia University and director of the Adams Express Company. His current research is in the valuation of companies and the structure of share prices.*

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*Editor's note:* All references are listed at the end of the article.

acting on it are two entirely different things. Increasing shareholder value requires knowledge about the sources of value creation and destruction within the corporate organization as well as the value implication of any new strategy contemplated. That knowledge is not easy to come by.

Executives in a typical corporation must evaluate and compare the performance of a number of dissimilar business units, for it is at the business unit level that value is ultimately created or destroyed. The tobacco business of Philip Morris, for example, has consistently created value for the company, while the performance of its beverage units has fallen short of expectations. The company's choice of strategy depends in part on its interpretation of the nature of Seven-Up's losses. Are they temporary and necessary while building market share and future profits? Will losses persist without a drastic strategic change like divestment? Or should Philip Morris continue trying to build competitive advantage in that sector by acquiring another well-established soft drink manufacturer?

Trying to answer these questions on a purely qualitative basis can sometimes drive executives to distraction. I have developed a method of value creation analysis that can help managers decide how to deal with possible "cash traps" like Seven-Up. Although managers may easily identify such a trap, they may often underestimate its cost to shareholders. Managers may also avoid making decisions because they can't estimate the impact on their companies' share prices if they decide to pursue alternative strategic directions.

In many cases managers overcome their fear of the impact of disinvestment from a company's original business only after a very large and unrecoverable loss of shareholder value. SCM's management of its typewriter business is a well-known example. Only recently did the company announce it would halve its investment in typewriters—following years of value destruction from persistent losses and the shrinking of its market share.

The strategic choices that Philip Morris and SCM face typify those of many companies in today's competitive markets. Here I will outline a procedure that measures the performance of business units and helps assess the value contribution of alternative strategies.<sup>2</sup> While grounded in the principles of modern finance, the technique uses generally available accounting and market data and yields results in terms familiar to management that have direct practical applicability.

## Creating Value

A simple value creation model (see *Exhibit I*) synthesizes the link between strategy and shareholder

value. Value creation is expressed in terms of the key determinants of free cash flows and their present value—the expected return on equity (ROE), the cost of equity capital, the expected growth of the company, and the period during which the company is expected to maintain a positive spread between its ROE and its cost of equity.

The sources of shareholder value are two. The company creates value by maintaining a positive spread between its ROE and its cost of equity capital (that is, it generates profits that exceed what investors require from companies in the same class of risk). The company also creates value from growth opportunities (investment in new assets) at a positive spread. On the other hand, the company destroys value when the spread is negative. If the ROE is expected to remain below the cost of equity capital, faster growth will simply accelerate destruction of shareholder value.<sup>3</sup>

*Exhibit II* provides a simple illustration. In 1983, the spread between Philip Morris's ROE and its cost of equity was 7.4%. At the end of 1983, the stock market expected the company to maintain its superior performance and rewarded it with a share-price-to-book ratio of 2.22. Theoretically, the company had created value equal to 122% of book equity for its shareholders. The spread between SCM's 1983 ROE and its cost of equity was, however, -14.4%, and its end-of-1983 price-to-book ratio was only 0.68, which means that the company had dissipated shareholder value equal to 32% of book equity.

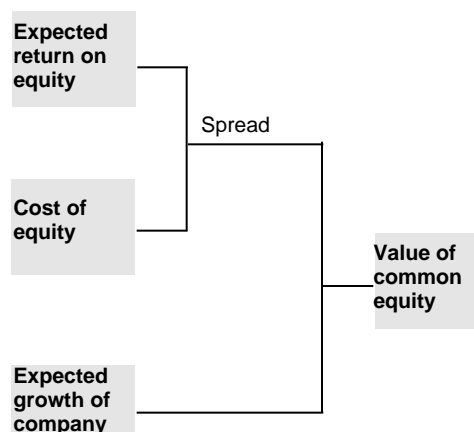
To formulate its strategy, a company must trace the source of its aggregate performance to the operating unit level. Because most companies evaluate business units in terms of return on investment and pretax margin on sales rather than ROE, I first determine the minimum margin on sales and ROI that a business unit must have to create shareholder value. You can look more closely at the case of Philip Morris to see this point. Although it seems clear in *Exhibit II* that the tobacco business of Philip Morris creates substantial shareholder value while the soft drink business loses money, you cannot ascertain the contribution of the beer unit. Return on investment by itself is not sufficient to decide its value contribution.

## Setting Business Unit Performance Standards

The company's strategic plan will usually provide data on each business unit's projected pretax margin on sales and ROI. I have arrayed such projections for a hypothetical company, the TTW Corporation, in *Exhibit III*.

To evaluate the projections, you must know above which ROI level each unit will create shareholder value. I define ROI as the return on the total investment in the business unit after income taxes but

## EXHIBIT I The Value Creation Model



## EXHIBIT II Company and Segment Data for Philip Morris and SCM 1983

	Philip Morris	SCM
Return on equity	23.5%	4.9%
Estimated cost of equity	16.1%	19.3%
Share price to book value ratio	2.22	0.68
Pretax return on investment	Company 19.0%	Company 6.1%
	Tobacco 32.3	Chemicals 5.6
	Beer 10.7	Coatings and resins 13.4
	Soft drinks and others - 1.1	Paper products 9.9
		Foods 19.7
		Typewriters - 8.1
		Other businesses 6.2

## EXHIBIT III Projected Performance of TTW's Business Units

	Machine tools	Electronics	Metal products
Pretax margin on sales	19.0%	15.0%	14.0%
Turnover*	1.30	1.68	0.80
Return on investment†	14.8%	15.1%	6.7%
Asset growth	8.0%	12.0%	4.0%

\*Turnover = Sales/assets.

†Return on investment = (1 - tax rate) × pretax margin × turnover; tax rate = 40%.

before the tax savings produced by financial leverage. That is,

$$ROI = \frac{(1-t) EBIT}{Assets}$$

where  $t$  is the effective tax rate applicable to the business unit and EBIT, its earnings before income and taxes. Value creation requires a positive spread between ROE and the cost of equity or a positive spread between ROI and a unit's weighted average cost of equity and debt capital (WACC). I define WACC in the usual way:

$$WACC = \frac{kE + (1-t)rD}{D+E}$$

where symbols  $E$ ,  $D$ ,  $k$ , and  $r$  denote equity, debt, the cost of equity, and the interest rate on debt. In other words, the unit's break-even ROI equals its WACC.

In this analysis the business unit's WACC thus plays a central role. The WACC often varies from unit to unit because of differences in business risk and debt capacity. The debt capacity of a business unit depends on such factors as the behavior of the unit's cash flow, its sales volatility, its profitability, the financial practices of its industry (for example, the extent of supplier credit), the marketability of its assets, its need for a strategic borrowing reserve, and the target bond rating of the corporation.<sup>4</sup>

I have calculated the WACC of TTW's units in *Exhibit IV*. The figures for the cost of equity differ across units because of differences in business risk. In practice, a manager can estimate the cost of equity of each unit by using the capital asset pricing model methodology and stock market information for companies specializing in the same business as the unit.<sup>5</sup> Because the cost of debt is the weighted cost of interest-bearing and non-interest-bearing liabilities incurred in order to finance the business unit's assets, it differs across units, even though the interest rate the company pays is the same no matter what it uses the funds for. The effective income tax rate can also vary across business units.

In TTW's case (see *Exhibit III* and *Exhibit IV*), machine tools' ROI exceeds its WACC by 3.2%, while electronics just breaks even and metal products performs at 2.6% below its break-even ROI. Restating the results in terms of sales margins produces a more intuitive and operational evaluation of performance. A function of the unit's WACC, tax rate, and asset turnover, the break-even margin on sales increases with its WACC and tax rate and decreases with its asset turnover:

$$\frac{EBIT}{Sales} = \frac{WACC}{(1-t) \text{Turnover}}$$

where turnover = sales/assets.

Faced with the break-even sales margins shown in *Exhibit V*, TTW's management has to decide

whether it can ever eliminate the negative spread of metal products and whether it can go beyond the break-even performance of electronics.

A company can justify the consistently negative performance of a unit such as metal products only if the company expects that performance to turn positive in the future. Otherwise, it should divest. The analysis of the disinvestment option helps test the validity of value creation analysis based on book value. If the proceeds from disinvestment are different from the book value of the unit's assets, management should recalculate the unit's ROI and its break-even margin on sales by using liquidation rather than book value. When liquidation value is below book value, recalculation may show that the unit actually creates value in excess of its liquidation value and should be held rather than liquidated.

### Unit Value Creation

Although top management can use its evaluation of the required ROI and margin on sales for each business unit to discriminate between those that create value and those that destroy it, the analysis will not provide dollar estimates of the unit's contribution to the company's composite value or to its price per share. Management will need such estimates to decide whether to maintain or revise its strategic plan. Fortunately, the elements needed for this kind of evaluation at the business unit level are readily available. Managers can use the projections of ROI and debt ratios to estimate the unit's return on equity. While you can estimate ROE by drawing up pro forma income statements for each unit, you can also use the following formula:

$$ROE = ROI + [ROI - (1 - t) r] D/E$$

The second term of this expression is the contribution of debt leverage to ROE and equals the spread between ROI and the after-tax cost of debt multiplied by the debt-equity ratio. *Exhibit VI* shows the contribution of leverage to the ROE of TTW's units, while *Exhibit VII* shows the unit's contribution to shareholder value by matching the computed ROE with the unit's cost of equity. I have assumed that machine tools will maintain its positive spread for 20 years, electronics will continue to break even in the future, and metal products will eliminate its negative spread in five years. The growth rate for each unit comes from the strategic plan. I obtained each entry in the "Economic value/book value" column by calculating the free cash flow generated by the unit, discounting it to its present value at the unit's cost of equity, and dividing the present value by the initial book value of the unit's equity. The results show that the machine tool unit created

### EXHIBIT IV Debt Capacity and Cost of Capital of Business Units

	Machine tools	Electronics	Metal products
Cost of equity	19%	22%	17%
Cost of debt	7	8	7
Tax rate	40	40	40
Debt ratio*	50	40	60
WACC break-even return on investment	11.6	15.1	9.3

\*Debt ratio = Total liabilities/total assets, expressed here as a percent.

### EXHIBIT V Projected and Break-Even Sales Margins

	Machine tools	Electronics	Metal products
Projected margin	19.0%	15.0%	14.0%
Break-even margin	14.9	15.0	19.4

### EXHIBIT VI Projected Return on Equity for Business Units

	Machine tools	Electronics	Metal products
Return on investment	14.8%	15.1%	6.7%
Cost of debt (r)	7.0	8.0	7.0
Tax rate (t)	40.0	40.0	40.0
ROI - (1 - t)r	10.6	10.3	2.5
Debt equity	100.0	67.0	150.0
Financial leverage	10.6	6.9	3.8
Return on			

value equal to 50% of its equity and that metal products destroyed value equal to 22% of its equity. The impact on TTW's consolidated position brings the potential stock price premium over book value down from \$4.33 (if the company consists solely of the machine tools unit) to \$2.87 per share. In other words, metal products has dissipated \$1.47 per share.

The case of TTW embodies the spectrum of divisional performance typically found in diversified companies. For example, machine tools represents value creators such as tobacco in Philip Morris and coatings and resins in SCM. Electronics represents

## EXHIBIT VII Value Creation by Business Units

	Return on equity	Cost of equity	Duration of spread	Growth	Economic value Book value	Book equity*	Economic value	Valued created or destroyed	
								Total	Per share <sup>†</sup>
Machine tools	25.4%	19.0%	20 years	8%	1.50	\$ 26.0 million	\$ 39.0 million	\$ 13.0 million	\$ 4.33
Electronics	22.0	22.0	0	12	1.00	5.7	5.7	0	0
Metal products	10.5	17.0	5	4	0.78	20.0	15.6	-4.4	-1.47
TTW consolidated numbers						51.7	60.3	8.6	2.87

\*Book equity = (1 - debt ratio) × unit's assets.

<sup>†</sup>Number of shares = 3 million.

mediocre units such as beer in Philip Morris and paper in SCM. Finally, metal products represents value destroyers such as Seven-Up and the typewriter unit of SCM.

### Evaluating Strategic Decisions

The approach used to evaluate the effect of current strategies can also be used to evaluate potential strategies toward each business unit. For example, consider the following four potential strategies for TTW's metal products division:

1. *Invest to modernize and gain market share.* An additional capital investment of \$5 million, 60% financed by debt, will develop better technology and result in cost reduction, improved quality, and increased ability to compete for market share. The value creation analysis shows that although the unit's average ROE during the next four years would be only 15%, it will increase to 20% once the division has consolidated its market position. Assets and sales will grow at 5% per year.

2. *Stop asset growth.* Under this strategy, metal products will forgo market share in order to limit value destruction. The unit will buy no more assets, limit investment to maintaining productive capacity, and drive down costs. Average ROE will be 12% during the next five years and will match the cost of equity (17%) in the years afterward.

3. *Harvest.* The unit will maximize its cash flow by eliminating investment for growth and replacement of productive capacity. The unit will curtail maintenance expenses and R&D and reduce production of lower margin product lines as capacity shrinks. After

five years of harvesting, TTW will redeploy the unit's remaining assets, including real estate, to other divisions or liquidate them. Management expects harvesting to recoup the book value of those assets and to increase ROE to 15%. Because the cash flow from depreciation will be 10% of the book value of assets, the unit's assets will shrink 10% each year.

4. *Sell out.* TTW's remaining alternative is to sell metal products at a 10% discount on the book value of its assets.

I have arrayed the value implications of each strategy in *Exhibit VIII*, which shows that modernization is clearly preferred. That strategy will take a unit that destroyed \$4.4 million of stockholder value and turn it around to produce an equity value \$2.2 million above book value (a \$6.6 million improvement equivalent to \$2.20 per share). Next best is harvesting, which minimizes value destruction by recouping \$49 million of the \$50 million investment.

The strategies to be evaluated in each case depend on the nature of the business unit under consideration. For example, in the case of Philip Morris's soft drink unit, a possible investment strategy is acquiring a company synergistic with Seven-Up. On the other hand, SCM seems to be much more restricted in terms of feasible strategies for its typewriter unit. Given the rapid technological change that has swept the industry, investment for modernization is likely to be out of SCM's reach at this point. Moreover, it might be too late to implement a sustainable harvesting strategy. The only possibilities open to SCM seem to be selling the unit or perhaps entering into a partnership with an efficient, technologically capable manufacturer.

## EXHIBIT VIII Value Implications of Strategies for Metal Products in Millions of Dollars

Strategy	$\frac{\text{Economic value}}{\text{Book value}}$	Book equity	Value of equity	Value created	Book assets	Value of assets	Impact per share*
Modernize	\$ 1.10	\$ 22	\$24.2	\$ 2.2	\$ 55	\$ 57.2	\$ 2.20
Stop growth	0.84	20	16.8	-3.2	50	46.8	0.40
Harvest	0.95	20	19.0	-1.0	50	49.0	1.13
Sell out	0.75	20	15.0	-5.0	50	45.0	-0.20

\*Change in economic value per share with respect to current strategy.

Management should evaluate the outcome of strategic decisions for all business units, including those that create shareholder value. Such an evaluation either confirms the current strategy's validity or points out better alternatives. At the very least, evaluating the implications for shareholder value contributes to a better understanding of the assumptions on which current strategy is predicated and prepares top management to respond strategically to future developments.

My technique for evaluating the performance of business units and the impact of strategic decisions on them consists of four steps:

1. Estimate basic data for each unit—cost of equity and debt, debt capacity and tax rate, and the turnover, sales margin, ROI, and asset growth expected.

2. Set performance standards (required sales margin and ROI) and compare them against projected performance.

3. Estimate the value creation implications of the current strategy. Use ROI and financial leverage data to express the unit's performance in terms of ROE and cost of equity and to estimate the unit's contribution to the value of stockholder equity.

4. Evaluate strategic decisions having to do with the units, such as changes in production and marketing, alternative investment and growth rates, and harvest and liquidation options.

The implementation of value creation analysis can be facilitated by carrying out the computations associated with the above steps on an electronic spreadsheet. The potential user is, however, cautioned against relying on mechanical applications of the approach. Value creation analysis has been designed to complement rather than to substitute for managerial creativity and good judgment.

### References

1. For a discussion of market efficiency, see Thomas R. Piper and William E. Fruhan, Jr., "Is Your Stock Worth Its Market Price?" HBR May-June 1981, p. 124. The standard reference on the relationship between strategy and shareholder value is William E. Fruhan, Jr., *Financial Strategy: Studies in the Creation, Transfer and Destruction of Shareholder Value* (Homewood, Ill.: Richard D. Irwin, 1979).
2. An important earlier contribution to this subject was made by William W. Alberts and James M. McTaggart, "The Divestiture Decision: An Introduction," *Mergers & Acquisitions*, Fall 1979, p. 18. See also their "Value Based Strategic Investment Planning," *Interfaces*, January-February 1984, p. 138, and Alfred Rappaport, "Selecting Strategies That Create Shareholder Value," HBR May-June 1981, p. 139.
3. For discussions of the value creation model and its empirical foundation, see Fruhan, *Financial Strategy*. The relationship between growth and value is analyzed by Fruhan in "How Fast Should Your Company Grow?" HBR January-February 1984, p. 84.
4. For a recent discussion of debt policy, see Thomas R. Piper and Wolf A. Weinhold, "How Much Debt Is Right for Your Company?" HBR July-August 1982, p. 106.
5. See, for example, James C. Van Horne, "An Application of the Capital Asset Pricing Model to Divisional Required Returns," *Financial Management*, Spring 1980, p. 14, and Diana R. Harrington, "Stock Prices, Beta, and Strategic Planning," HBR May-June 1983, p. 157. This technique is evaluated in Russell I. Fuller and Halbert S. Kerr, "Estimating the Divisional Cost of Capital: An Analysis of the Pure-Play Technique," *Journal of Finance*, December 1981, p. 997.