

Module 14

MANAGING FOR VALUE CREATION

Background

- After reading this Module students should understand:
 - Meaning of managing for value creation
 - How to measure value creation at the firm level using the concept of market value added (MVA)
 - Why maximizing MVA is consistent with maximizing shareholder value
 - When and why growth may not lead to value creation
 - How to implement a management system based on a value-creation objective
 - How to measure a firm's capacity to create value using the concept of economic value added (EVA)
 - How to design management compensation schemes that induce managers to make value-creating decisions

Measuring Value Creation

- To find out whether management has created or destroyed value as of a particular point in time, the firm's MVA is employed
 - $MVA = \text{Market value of capital} - \text{Capital employed}$
 - To measure the value created or destroyed during a period of time, the change in MVA during the period should be computed

Estimating Market Value Added

- To estimate a firm's MVA, we need to know
 - Market value of its equity and debt
 - Amount of capital that shareholders and debtholders have invested in the firm
- Estimating the market value of capital
 - Market value of capital can be obtained from the financial markets
 - If the firm is not publicly traded, its market value is unobservable and its MVA cannot be calculated
- Estimating the amount of capital employed
 - The amount of capital employed by the firm can be extracted from the firm's balance sheet
 - The upper part of Exhibit 14.1 presents InfoSoft's standard (unadjusted) balance sheets
 - The lower part of Exhibit 14.1 shows InfoSoft's managerial (adjusted) balance sheets

EXHIBIT 14.1a:

InfoSoft's Managerial Balance Sheets on December 31, 1999 and 2000.

Figures in millions of dollars

UNADJUSTED MANAGERIAL BALANCE SHEETS

| | DEC. 31, 1999 | DEC. 31, 2000 |
|--|---------------|---------------|
| <u>Invested capital</u> | | |
| Cash | \$5 | \$10 |
| Working capital requirement ¹ (net) | 100 | 100 |
| <i>Gross working capital requirement</i> | \$105 | \$110 |
| <i>Accumulated bad debt allowance</i> | (5) | (10) |
| Net fixed assets | 185 | 190 |
| Property, plant, & equipment (net) | 95 | 110 |
| Goodwill (net) | 90 | 80 |
| <i>Gross goodwill</i> | \$100 | \$100 |
| <i>Accumulated amortization</i> | (10) | (20) |
| Total | \$290 | \$300 |

¹ Working capital requirement = (Accounts receivable + Inventories + Prepaid expenses) – (Accounts payable + Accrued expenses).

EXHIBIT 14.1b:

InfoSoft's Managerial Balance Sheets on December 31, 1999 and 2000.

Figures in millions of dollars

UNADJUSTED MANAGERIAL BALANCE SHEETS

| | DEC. 31, 1999 | DEC. 31, 2000 |
|-------------------------|---------------|---------------|
| <u>Capital employed</u> | | |
| Short-term debt | \$40 | \$20 |
| Long-term debt | 40 | 40 |
| Lease obligations | 40 | 40 |
| Owners' equity | 170 | 200 |
| Total | \$290 | \$300 |

EXHIBIT 14.1c:

InfoSoft's Managerial Balance Sheets on December 31, 1999 and 2000.

Figures in millions of dollars

ADJUSTED MANAGERIAL BALANCE SHEETS

| | DEC. 31, 1999 | DEC. 31, 2000 |
|------------------------------------|---------------|---------------|
| <u>Invested capital</u> | | |
| Cash | \$5 | \$10 |
| Gross working capital requirement | 105 | 110 |
| Net fixed assets | 235 | 260 |
| Property, plant, & equipment (net) | \$95 | \$110 |
| Gross goodwill | 100 | 100 |
| Capitalized R&D | 40 | 50 |
| Total | \$345 | \$380 |

EXHIBIT 14.1d:

InfoSoft's Managerial Balance Sheets on December 31, 1999 and 2000.

Figures in millions of dollars

| ADJUSTED MANAGERIAL BALANCE SHEETS | | |
|------------------------------------|---------------|---------------|
| | DEC. 31, 1999 | DEC. 31, 2000 |
| <u>Capital employed</u> | | |
| Total debt capital | \$120 | \$100 |
| Short-term debt | \$40 | \$20 |
| Long-term debt | 40 | 40 |
| Lease obligations | 40 | 40 |
| Adjusted equity capital | 225 | 280 |
| Book value of equity | 170 | 200 |
| Accumulated bad debt allowance | 5 | 10 |
| Accumulated goodwill amortization | 10 | 20 |
| Capitalized R&D | 40 | 50 |
| Total | \$345 | \$380 |

Interpreting Market Value Added

- Maximizing MVA is consistent with maximizing shareholder value
 - Shareholder value creation should be measured by
 - Difference between the market value of the firm's equity and the amount of equity capital shareholders have invested in the firm
 - However, MVA is the difference between the market value of total capital and total capital employed
 - $MVA = \text{Equity MVA} + \text{Debt MVA}$
 - If we assume that debt MVA is different from zero only because of changes in the level of interest rates, then, for a given level of interest rates, maximizing MVA is equivalent to maximizing shareholder value (equity MVA)

Interpreting Market Value Added

- MVA is sensitive to variables that cannot be attributed to the performance of managers
- Maximizing the market value of the firm's capital does not necessarily imply value creation
- MVA increases when the firm undertakes positive net present value projects

Identifying The Drivers Of Value Creation

- A firm's capacity to create value is driven by a combination of three key factors:
 - The firm's operating profitability, measured by ROIC
 - $ROIC = NOPAT \div Invested\ Capital$
 - The firm's cost of capital, measured by the WACC
 - $WACC = [Aftertax\ cost\ of\ debt \times percentage\ of\ debt\ capital] + [cost\ of\ equity \times percent\ of\ equity\ capital]$
 - The firm's ability to grow

Linking Value Creation To Operating Profitability, The Cost Of Capital, And Growth Opportunities

- The MVA of a firm that is expected to grow forever at a constant rate is given by the following valuation formula

$$\text{MVA} = \frac{(\text{ROIC} - \text{WACC}) \times \text{Invested capital}}{\text{WACC} - \text{Constant growth rate}}$$

To create value, expected ROIC must exceed the firm's WACC.

- Thus, the objective of managers should not be the maximization of their firm's operating profitability (ROIC)
 - But the maximization of the firm's return spread
 - Rewarding a manager's performance on the basis of ROIC may lead to a behavior that is inconsistent with value creation
- Only value-creating growth matters

Linking Value Creation To Operating Profitability, The Cost Of Capital, And Growth Opportunities

- Another general implication of the valuation formula shown above is that growth alone does not necessarily create value
 - There are high-growth firms that are value destroyers and low-growth firms that are value creators. Exhibit 14.3 provides an illustration by comparing firms A and B

EXHIBIT 14.4a:

Comparison of Value Creation for Two Firms with Different Growth Rates.

Dollar figures in millions

| FIRM | EXPECTED GROWTH RATE | EXPECTED ROIC | ESTIMATED WACC | MARKET VALUE ADDED ACCORDING TO EQUATION 14.3 | IS VALUE CREATED? |
|------|------------------------|-----------------------------|----------------|---|-------------------|
| A | 7% | 10% | 13% | $\frac{-3\% \times \$100}{13\% - 7\%}$ | No |
| | EXPECTED RETURN SPREAD | INVESTED CAPITAL (MILLIONS) | | $= \frac{-\$30}{0.06} = -\500 | |
| | -3% | \$100 | | | |
| B | 4% | 13% | 10% | $\frac{+3\% \times \$100}{10\% - 4\%}$ | Yes |
| | EXPECTED RETURN SPREAD | INVESTED CAPITAL (MILLIONS) | | $= \frac{+\$30}{0.06} = +\500 | |
| | +3% | \$100 | | | |

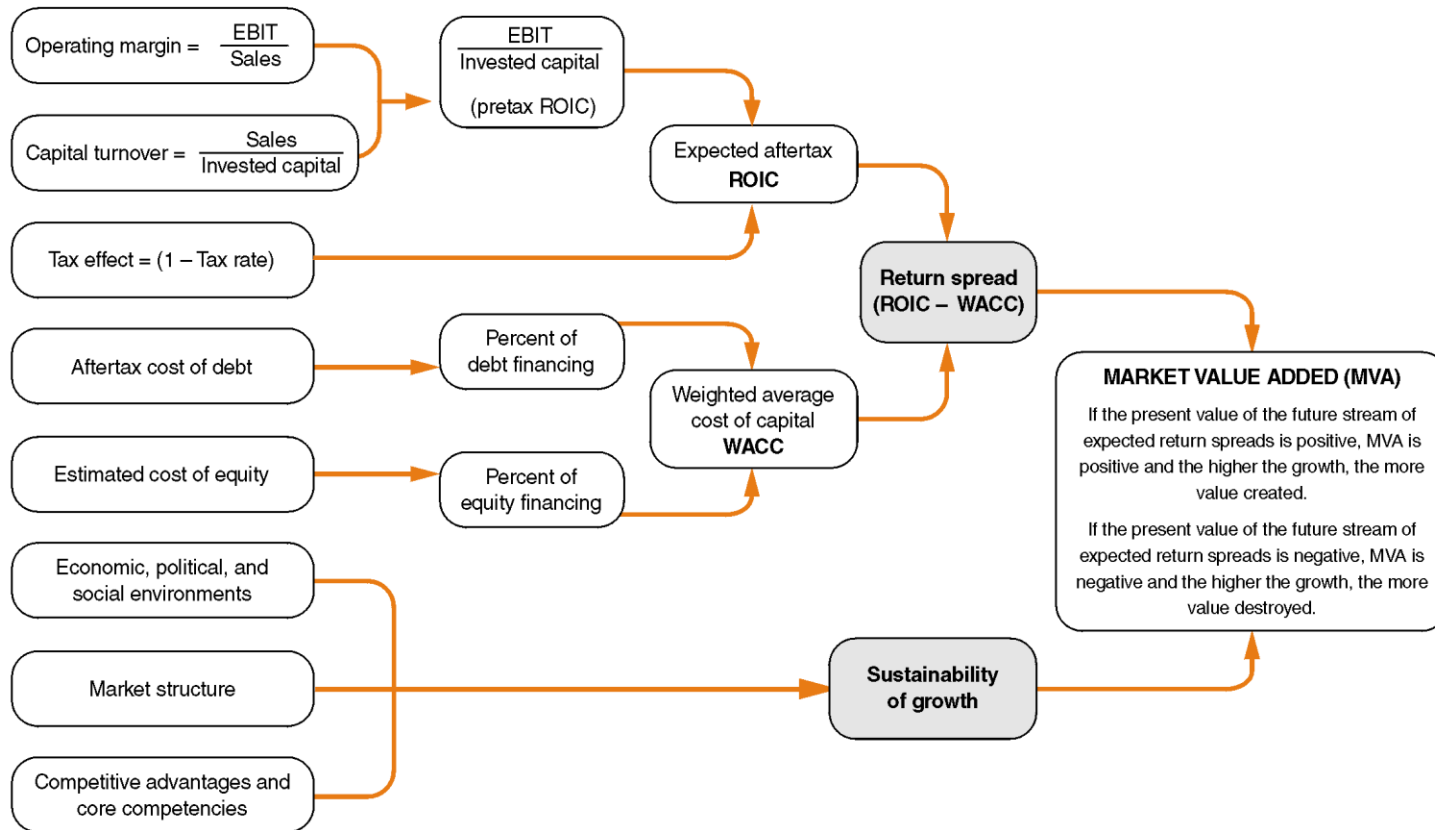
Linking Value Creation To Its Fundamental Determinants

- If the firm's expected ROIC is separated into its fundamental components

$$\begin{aligned} \text{ROIC} &= \frac{\text{EBIT}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Invested Capital}} \times (1 - \text{tax rate}) \\ &= [\text{Operating Profit Margin}] \times [\text{Capital Turnover}] \times (1 - \text{tax rate}) \end{aligned}$$

- It becomes clear that management can increase the firm's ROIC through a combination of the following actions
 - An improvement of operating profit margin
 - An increase in capital turnover
 - A reduction of the effective tax rate
- The various drivers of value creation are summarized in Exhibit 14.5

EXHIBIT 14.5: The Drivers of Value Creation.



EBIT = Earnings before interest and taxes (operating profit before tax);
 Invested capital = Cash + Working capital requirement + Net fixed assets;
 WACC = [% Debt][Aftertax cost of debt] + [% Equity][Cost of equity].

Linking Operating Performance And Remuneration To Value Creation

- A short case study is used in this section to explain how a manager's operating performance, his remuneration package, and his ability to create value can be linked
- Mr. Thomas hires a general manager
 - Mr. Thomas, the sole owner of a toy distribution company called Kiddy Wonder World (KWW), is concerned about his firm's recent lackluster performance
 - In January 2000, he hires Mr. Bobson to run the company
 - Exhibit 14.6 shows the firm's financial statements for 2011 and its anticipated financial statements for 2012 submitted by Mr. Bobson

EXHIBIT 14.6a:

Financial Statements for Kiddy Wonder World.

BALANCE SHEETS ON DECEMBER 31

| | <u>2011</u> <u>Actual</u> | <u>2012</u> <u>Expected</u> |
|--|------------------------------|--------------------------------|
| <u>Invested capital</u> | | |
| Cash | \$100 | \$60 |
| Working capital requirement ¹ | 600 | 780 |
| Net fixed assets | 300 | 360 |
| Total | \$1,000 | \$1,200 |
| <u>Capital employed</u> | | |
| Short-term debt | \$200 | \$300 |
| Long-term debt | 300 | 300 |
| Owners' equity | 500 | 600 |
| Total | \$1,000 | \$1,200 |

¹ Working capital requirement = (Accounts receivable + Inventories + Prepaid expenses) – (Accounts payable + Accrued expenses).

EXHIBIT 14.6b: Financial Statements for Kiddy Wonder World.

INCOME STATEMENTS FOR THE YEAR

| | 2011 <u>Actual</u> | 2012 <u>Expected</u> |
|--|-----------------------|-------------------------|
| Sales | \$2,000 | \$2,200 |
| less operating expenses | (1,780) | (1,920) |
| less depreciation expenses | (20) | (50) |
| Earnings before interest and tax (EBIT) | <u>\$200</u> | <u>\$230</u> |
| less interest expenses (10% of debt) | (50) | (60) |
| Earnings before tax (EBT) | \$150 | \$170 |
| less tax expenses (40% of EBT) | (60) | (68) |
| Earnings after tax (net profit) | <u>\$90</u> | <u>\$102</u> |

Linking Operating Performance And Remuneration To Value Creation

- Has the general manager achieved his objectives?
 - A close look at Exhibit 14.7 reveals that Mr. Bobson was successful in increasing sales and profits
 - But grew the company's WCR much faster than sales and profits
 - The result was an operating profitability that fell short of the firm's WACC and an inability to create value

EXHIBIT 14.7a: Comparative Performance of Kiddy Wonder World.

| PERFORMANCE INDICATOR | 2011 | 2012 | PERFORMANCE OF LEADING COMPETITORS |
|---|------|-------|------------------------------------|
| <u>Growth in sales</u> | | | |
| % change from previous year | 5% | 10% | 9% |
| <u>Growth in earnings (net profit)</u> | | | |
| % change from previous year | 5% | 13.3% | 10% |
| <u>Growth in operating expenses</u> | | | |
| % change from previous year | 6% | 7.9% | 8.8% |
| <u>Growth in invested capital</u> | | | |
| % change from previous year | 8% | 20% | 10% |
| <u>Growth in WCR</u> | | | |
| % change from previous year | 8% | 30% | 25% |

EXHIBIT 14.7b: Comparative Performance of Kiddy Wonder World.

| PERFORMANCE INDICATOR | Before Mr. Bobson 2011 | With Mr. Bobson 2012 | PERFORMANCE OF LEADING COMPETITORS |
|---|--------------------------------------|--|--|
| <u>Liquidity position</u> | | | |
| Short-term borrowing WCR | $\frac{200}{600} = 33.3\%$ | $\frac{300}{780} = 38.5\%$ | 25% |
| <u>Operating profitability</u> | | | |
| ROIC = $\frac{\text{Aftertax EBIT}}{\text{Average invested capital}}$ | $\frac{200(1 - 40\%)}{980} = 12.2\%$ | $\frac{230(1 - 40\%)}{1,100} = 12.5\%$ | 14% |

Linking Operating Performance And Remuneration To Value Creation

- Economic profits versus accounting profits
 - Because the growth of working capital does not affect Mr. Bobson's bonus, he may have been pushing sales and boosting profits while neglecting the management of working capital
 - Although KWW is "profitable" when profits are measured according to accounting conventions (NOPAT and net profit are positive)
 - It is not profitable when performance is measured with economic profits (EVA is negative)
 - EVA can be expressed as follows:
 - $EVA = NOPAT - WACC \times \text{Invested Capital}$
 - Which shows that a positive return spread implies a positive EVA, which in turn, implies value creation
 - Linking Mr. Bobson's performance and bonus to EVA rather than to accounting profits would have induced him to pay more attention to the growth of WCR

Designing Compensation Plans That Induce Managers To Behave Like Owners

- KWW case study shows that managers do not always behave according to the value creation principle
 - Possible solutions to the problem include
 - Turning managers into owners
 - Remunerating them partly with a bonus linked to their ability to increase EVA

Designing Compensation Plans That Induce Managers To Behave Like Owners

- For an EVA-related compensation system to be effective, a number of conditions must be met:
 - Bonus should be related to the managers' ability to generate higher EVA for a period of several years
 - After the compensation plan has been established, it should not be modified
 - Reward related to superior EVA performance must present a relatively large portion of the manager's total remuneration
 - As many managers as possible should be on the EVA-related bonus plan
 - If an EVA bonus plan is adopted, the book value of capital and the operating profit used to estimate EVA should be restated to correct for the distortions due to accounting conventions

Linking The Capital Budgeting Process To Value Creation

- By connecting the measures of performance that are the concerns of the corporate finance function
 - We can provide an integrated financial management system that integrates the value-creation objective with the firm's
 - Value
 - Operating performance
 - Remuneration and incentive plans
 - Capital budgeting process

Linking The Capital Budgeting Process To Value Creation

- The present value of an investment's future EVAs is equal to its MVA
 - Since the correct measure of a manager's ability to create value is EVA and most managerial decisions generate benefits over a number of years
 - Need to measure the present value of the entire stream of future expected EVAs
 - The potential value of a business decision is the MVA of the decision
 - Then, using the definition of EVA, MVA can be expressed as follows:

$$\text{MVA} = \frac{\text{EVA}}{\text{WACC} - \text{Constant growth rate}}$$

This valuation formula shows that the present value of the future stream of EVAs from a proposal is the MVA of that proposal.

Linking The Capital Budgeting Process To Value Creation

- Maximizing MVA is the same as maximizing NPV
 - Major advantage of the NPV approach
 - Takes into account any non-financial transactions related to the project that either reduce or add to the firm's cash holding
 - Major advantage of the MVA approach
 - Direct relation to EVA

EXHIBIT 14.9: The Financial Strategy Matrix.

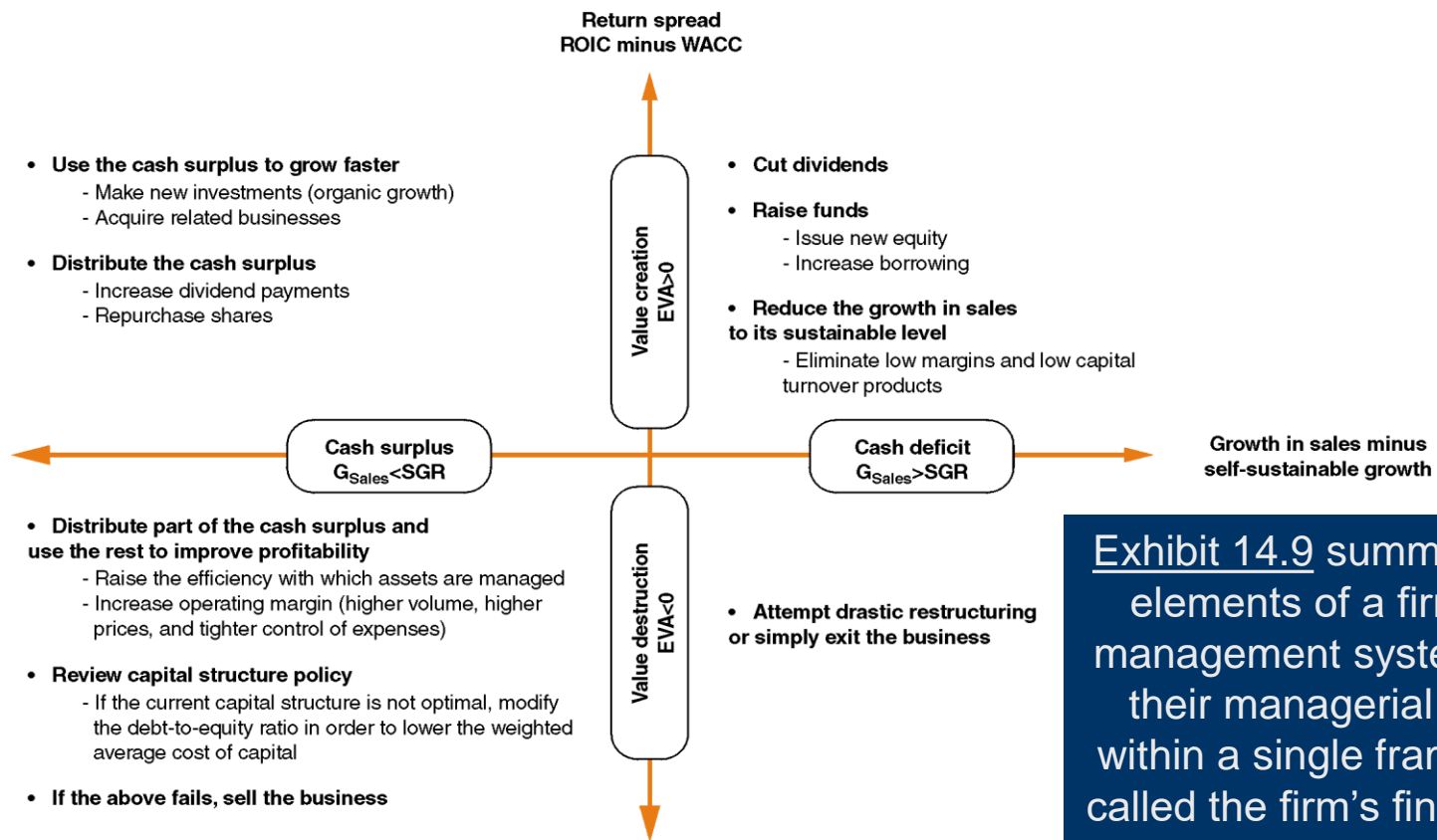


Exhibit 14.9 summarizes the key elements of a firm's financial management system and shows their managerial implications within a single framework that is called the firm's financial strategy matrix.

ROIC = Return on invested capital
WACC = Weighted average cost of capital
 G_{Sales} = Growth in sales
SGR = Self-sustainable growth rate

Putting It All Together: The Financial Strategy Matrix

- The matrix indicates that there are four possible situations a business can face
 - The business is a value creator but is short of cash
 - Management has two options in this case:
 - To reduce or eliminate any dividend payments
 - To inject fresh equity capital from the parent company into the business

Putting It All Together: The Financial Strategy Matrix

- The business is a value creator with a cash surplus
 - This is a preferred situation—management has two options:
 - Use the cash surplus to accelerate the business' growth
 - Return the cash surplus to the shareholders
- The business is a value destroyer with a cash surplus
 - This type of a situation should be fixed quickly; part of the excess cash should be returned to shareholders and the rest used to restructure the business as rapidly as possible
- The business is a value destroyer that is short of cash
 - If the business cannot be quickly restructured, it should be sold as soon as possible