Decentralization in Organizations

**Benefits of Decentralization**
- Top management freed to concentrate on strategy.
- Lower-level managers gain experience in decision-making.
- Decision-making authority leads to job satisfaction.
- Lower-level decisions often based on better information.
- Lower level managers can respond quickly to customers.

**Disadvantages of Decentralization**
- May be a lack of coordination among autonomous managers.
- May be difficult to spread innovative ideas in the organization.
- Lower-level manager’s objectives may not be those of the organization.

**Cost, Profit, and Investments Centers**
- Cost Center
- Profit Center
- Investment Center

Cost, profit, and investment centers are all known as responsibility centers.

Return on Investment (ROI) Formula

\[
\text{ROI} = \frac{\text{Net operating income}}{\text{Average operating assets}}
\]

Income before interest and taxes (EBIT)

Cash, accounts receivable, inventory, plant and equipment, and other productive assets.

Understanding ROI

Increasing ROI

There are three ways to increase ROI:
- Increase Sales
- Reduce Expenses
- Reduce Assets
ROI and the Balanced Scorecard

It may not be obvious to managers how to increase sales, decrease costs, and decrease investments in a way that is consistent with the company's strategy. A well-constructed balanced scorecard can provide managers with a road map that indicates how the company intends to increase ROI.

Which internal business process should be improved?

Which customers should be targeted and how will they be attracted and retained at a profit?

Criticisms of ROI

- In the absence of the balanced scorecard, management may not know how to increase ROI.
- Managers often inherit many committed costs over which they have no control.
- Managers evaluated on ROI may reject profitable investment opportunities.

Residual Income - Another Measure of Performance

Net operating income above some minimum return on operating assets

Calculating Residual Income

$$\text{Residual income} = \text{Net operating income} - (\frac{\text{Average operating assets}}{\text{Minimum required rate of return}})$$

This computation differs from ROI.

ROI measures net operating income earned relative to the investment in average operating assets.

Residual income measures net operating income earned less the minimum required return on average operating assets.

Residual Income – An Example

- The Retail Division of Zephyr, Inc. has average operating assets of $100,000 and is required to earn a return of 20% on these assets.
- In the current period, the division earns $30,000.

Motivation and Residual Income

Economic Value Added

- Economic value added (EVA®) is a specific type of residual income calculation that has recently attracted considerable attention.
- Economic value added (EVA®)
  $$= \text{After-tax operating income} - (\text{Weighted-average cost of capital}) \times (\text{Long-term assets} + \text{Working capital})$$
Economic Value Added

- Why Long-term assets + Working capital?
- Can also be computed as Total assets minus current liabilities
- That is, the investment base is reduced by current liabilities—largely Accounts Payable!
- Management should utilize this “free” source of funds.

EVA® (Stern Stewart) substitutes the following specific numbers in the RI calculations:
1. Income equal to after-tax operating income
2. A required rate of return equal to the weighted-average cost of capital
3. Investment equal to total assets minus current liabilities
   - But use of this definition of investment base is not new to EVA.

EVA Example

- Assume that Resorts Inns has two sources of long-term funds:
  - Long-term debt with a market value and book value of $4,800,000 issued at an interest rate of 10%
  - Equity capital that also has a market value of $4,800,000 and a book value of $2,200,000
- Tax rate is 30%.

What is the after-tax cost of capital?
- For debt, 10% × (1 – 30%Tax rate) = 7%
- The cost of equity capital is the opportunity cost to investors of not investing their capital in another investment that is similar in risk to Resorts Inns.
- Assume that Resorts Inns’ cost of equity capital is 14%.

What is the weighted-average cost of capital?
- WACC = [(7% × Market value of debt) + (14% × Market value of equity)] / (Market value of debt + Market value of equity)
- WACC = [(7% × 4,800,000) + (14% × 4,800,000)] / $9,600,000
- WACC = ($336,000 + $672,000) / $9,600,000
- WACC = 10.5%

For three of their hotels, assume these values for the after-tax operating income (NOPAT) and Investment base for each hotel:

<table>
<thead>
<tr>
<th>Location</th>
<th>NOPAT</th>
<th>Investment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chicago</td>
<td>$116,200</td>
<td>$850,000</td>
</tr>
<tr>
<td>Dallas</td>
<td>$168,000</td>
<td>$850,000</td>
</tr>
<tr>
<td>Miami</td>
<td>$806,400</td>
<td>$5,300,000</td>
</tr>
</tbody>
</table>

What is the economic value added?
- Chicago: $116,200 – $89,250 = $26,950
- Dallas: $168,000 – $89,250 = $78,750
- Miami: $806,400 – $556,500 = $249,900
- Thus EVA charges managers for the cost of their investments in long-term assets and working capital.

Companies that use EVA

- Mostly large corporations
  - Costly to implement
  - Requires consultants
Economic Value Added
Small Manufacturer Example
from Roztocki et al.

Steps to implement

1. Review company's financial data
2. Identify company's capital (C)
3. Determine company's capital cost rate (CCR)
4. Calculate net operating profit after tax (NOPAT)
5. Calculate eva [their version of EVA®]

Review company’s financial data

- Nearly all for their method is available from company BS & IS
  - Details in notes
  - Maybe just 2 years’ data enough

Identify company’s capital (C)

- GAAP often “misleading”
  - Not reflective of economic effects
  - Stewart consultants propose 164 adjustments!
- Some accounting items expenses under GAAP are considered capitalized
  - R&D, restructuring charges, marketing outlays

Determine co’s capital cost rate (CCR)

- Hardest part for a small company
  - Not publicly traded (stock price & return unclear)
  - CAPM not easy to apply
- The authors’ simplified approach
  - Cost of capital rates
    - For debt, CCR = Prime + bank charge [of 1 or 2 %]
    - For equity, CCR = risk-free bond rate + table amount...

Capital cost rate (CCR) continued...

Table 1. Suggested Range for Risk Premium RP

<table>
<thead>
<tr>
<th>RP Ratings</th>
<th>Investment Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 % and less</td>
<td>Extremely low risk, established profitable company with extremely stable cash flows</td>
</tr>
<tr>
<td>6 % - 12 %</td>
<td>Low risk, established profitable company with relative low fluctuation in cash flow</td>
</tr>
<tr>
<td>12 % - 18 %</td>
<td>Moderate risk, established profitable company with moderate fluctuation in cash flow</td>
</tr>
<tr>
<td>18 % and more</td>
<td>High business risk</td>
</tr>
</tbody>
</table>

Calc. net oper. profit after tax (NOPAT)

- NOPAT = Net profit after tax (GAAP) + Total adjustments -Tax savings on adjustments
Calculate eva

- eva = NOAPT - Capital Charge
  - = NOPAT - C * CCR

Adjustments to income in “Pitt Products”

Interest savings ($42,000) less the tax shield on interest expenses. Tax shield, or tax savings, on interest expenses can be enhanced by multiplying the interest expenses by the tax rate.

In addition, owner managers stated that they regard approximately $90,000 of their salaries as a kind of compensation for their involvement in the company.

\[
\text{NOPAT} = \text{Net Profit after Tax} + \text{Total Adjustments} + \text{Tax Savings on Adjustments} \\
= \text{NPAT} \times (1 - \text{Tax Rate}) + \text{Adjustments} + \text{Tax Savings on Adjustments}
\]

I.e., after-tax cost gets added back

Other adjustments appropriate?

- Operating profit after depreciation and amortization
- Implied interest expense on operating leases
- Increase in LIFO reserve
- Goodwill amortization
- Increase in bad debt reserve + Increase in net capitalized research and development
- Cash operating taxes

\[
\text{NOPAT} = \text{Net Operating Profit After Taxes} + \text{Other Adjustments} + \text{Tax Savings on Adjustments}
\]

Final calculation of eva

- eva = NOPAT - Capital Charge
  - = NOPAT - C * CCR
  - $248.4 - 1200 * 0.087
  - $248.4 - 104.4
  - $144,000 thousand