Accrual Accounting Process

15.501/516 Accounting
Spring 2004

Professor S. Roychowdhury
Sloan School of Management
Massachusetts Institute of Technology

Feb 17/18, 2004
What is Cost of Goods Sold?

- Q Mart buys $10,000 worth of cereals from Special Foods for cash.
- Assets = L + OE
- Cash       Inventory
- -10,000   +10,000

- Exchange of one asset for another asset
- Operating outflow = $10,000
What is Cost of Goods Sold?

- Q Mart sold one-half of the cereals for $8,000 cash
- Assets = L + Owners’ Equity
- Cash
  - +8,000
  - +8,000

- What is the most significant matching expense?
What is Cost of Goods Sold?

- The cost to Q Mart of buying the cereal that was sold for $8,000
- one-half of $10,000 = $5,000
- = Cost of Goods Sold or Cost of Sales
- Assets = L + Owners’ Equity
- Inventory Retained Earnings
- -5,000 -5,000
What is Gross Profit or Margin?

- Assets = L + Owners’ Equity
- Cash    Inventory    Retained Earnings
- -10,000  +10,000
- +8,000          +8,000
- -5,000          -5,000
- Increase in retained earnings  +3,000
- Gross Profit or Margin = Sales Revenue (-) Cost of Goods Sold = $3,000
- GM rate = $3,000/$8,000 = 37.5%
Components of Income

- Sales or Service Revenue
- (-) Cost of Goods Sold
- (-) Operating Expenses
- (-) Unusual or Infrequent items
- (-) Income Tax Expense

= Income from Continuing Operations (ICO)

All items disclosed below ICO are referred to as “below the line” items.

The below-the-line items are each shown net of income tax.
## Components of Income - Staples

<table>
<thead>
<tr>
<th>Component</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sales</strong></td>
<td>11,596,075</td>
</tr>
<tr>
<td><strong>Cost of goods sold</strong></td>
<td></td>
</tr>
<tr>
<td>- Occupancy costs</td>
<td>8,652,593</td>
</tr>
<tr>
<td><strong>Gross Profit</strong></td>
<td>2,943,482</td>
</tr>
<tr>
<td><strong>Operating expenses</strong></td>
<td></td>
</tr>
<tr>
<td>- Operating &amp; selling</td>
<td>1,795,428</td>
</tr>
<tr>
<td>- Pre-opening</td>
<td>8,746</td>
</tr>
<tr>
<td>- General &amp; administrative</td>
<td>454,501</td>
</tr>
<tr>
<td>- Amortization on intangibles</td>
<td>2,135</td>
</tr>
<tr>
<td>- Amortization on goodwill</td>
<td>0</td>
</tr>
<tr>
<td>- Asset impairment charges</td>
<td>0</td>
</tr>
<tr>
<td>- Store closure charge</td>
<td>0</td>
</tr>
<tr>
<td>- Interest &amp; other expenses</td>
<td>20,609</td>
</tr>
<tr>
<td><strong>Total operating &amp; other expenses</strong></td>
<td>2,281,419</td>
</tr>
<tr>
<td><strong>Income before taxes</strong></td>
<td>662,063</td>
</tr>
<tr>
<td><strong>Income taxes</strong></td>
<td>215,963</td>
</tr>
<tr>
<td><strong>Net income</strong></td>
<td>446,100</td>
</tr>
</tbody>
</table>
Cash Flow Statement

- **Operating Activities**
  - Net income: 0,446,100
  - Adjustments,
    - Depreciation and amortization(+) 0,267,209
  - ------
  - Cash flow from operating: 0,468,250

- **Investing activities**
  - Acquisition of property & equip (-) (0,264,692)
  - Acquisitions of businesses (-) (1,171,187)
  - ------
  - Net cash from investing: (1,436,226)

- **Financing activities**
  - Proceeds from sale of capital stock (+) 0,078,895
  - Proceeds from borrowings (+) 0,730,897
  - Payments on borrowings (-) (0,95,235)
  - ------?
  - Net cash from financing: 0,714,083

- **Net increase/(decrease)**: 0,201,240
Cash Flow Versus Accrual Accounting

- Cash flow accounting
  - Measures performance by comparing the cash inflows of a certain time period to the cash outflows of that period (e.g., cash flow from operations).

- Accrual accounting
  - Measures performance by comparing revenues (which are recognized when the earning process is complete) with expenses (which are recognized when assets are consumed or liabilities are created).
  - Geared toward periodic performance measurement that is not skewed by investment, financing, and long-horizon operational activities.
Accrual accounting

- Based not only on cash transactions but also on credit transactions, barter exchanges, changes in prices, changes in form of assets or liabilities, and other transactions.
- records events that have cash consequences for an enterprise
- but does not require a concurrent cash movement in order to record a transaction.
Cash Flow Versus Accrual Accounting

- Over the entire life of a corporation, total “income” under cash flow and accrual accounting is the same.
- However, cash receipts in a particular period may largely reflect the effects of activities of the enterprise in earlier periods.
- Similarly, many of the cash outlays may relate to activities and efforts to be undertaken in future periods.
- The matching principle in accrual accounting addresses this limitation of cash flow accounting.
Cash Flow Versus Accrual Accounting

- Stock price = Present value of \textit{expected} future cash flows.
- Changes in stock prices = f(changes in expectations about future cash flows).
- Isn’t cash flow more important than earnings?
Cash Flow Versus Accrual Accounting

- What cash flows are important?
  - Future cash flows!

- When compared to current cash flows, current earnings more highly associated with future cash flows

- When compared to cash flows, earnings have a stronger association with stock prices.

- Earnings are superior indicators of expected future cash flows.
Accounting Earnings versus Stock Prices

- Top management’s incentive compensation is usually linked to stock prices and accounting earnings.
- Why not link it to stock prices alone?
  - Stock prices are affected by economic factors that are outside of a manager’s control (e.g., macroeconomic, political factors).
  - Consequently, stock prices may be a poor indicator of managerial performance.
  - Combining both mitigates this problem
Accounting Earnings versus Stock Prices

- A second reason for using accounting earnings
- Expected versus delivered performance
  - Firm X hires manager Y on December 31, 1997.
  - Stock price of X jumps by 10%! Why?
  - Market’s expectations regarding the company’s future performance improve.
  - Accounting earnings of 1998 increases by 10%!
    - Why?
    - Manager Y’s actions produce an actual improvement in the financial performance of X in 1998. Stock prices anticipated this improvement in 1997 at the time of the earnings announcement.
Accounting Earnings versus Stock Prices

- By combining stock prices and earnings to reward managers, a firm can reward a manager for his/her strategic planning and operational execution.

- Of course, stock prices do reflect the delivered performance of the manager as well.
  - But if payment is on the basis of expected performance, then what do you do if the manager shirks subsequently? (Moral hazard problem)
  - Earnings provide a straightforward measure of delivered performance.
Accrual Accounting and Periodic Adjustments

- Accountants record exchange transactions.
- But this does not capture all economic activities.
- Periodic adjusting
  - Required to record activities that have taken place, but which have not yet been recorded.
  - To reduce accounting costs
    - Some economic activities may be continuous in nature. The effect of such activities are accumulated over a period and then recorded periodically rather than continuously, e.g., consumption of stationary.
Recall Joe’s Landscaping Service

- **Company pays $9,000 for expenses (wages, interest, and maintenance)**

- **Assets = Liabilities + Owners’ Equity**

- **Cash**

- **Retained Earnings**

- **-|$9,000**

- **-|$9,000**
Recall Blockbuster - Matching

Estimate: \( \frac{50x}{67} \) \( \frac{17x}{67} \)

How much does Blockbuster recognize as an expense each year?

\( \frac{50}{67} \) \( \frac{17}{67} \) ($20) ($20)

Yearly Expenses

$15 $5
## Recording video expenses

<table>
<thead>
<tr>
<th></th>
<th>Cash</th>
<th>Video Asset</th>
<th>Retained Earn.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Buy Video</strong></td>
<td>(20)</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td><strong>Rent 50x @$3 each</strong></td>
<td>150</td>
<td></td>
<td>150</td>
</tr>
<tr>
<td><strong>End of Y1</strong></td>
<td></td>
<td>(15)</td>
<td>(15)</td>
</tr>
<tr>
<td><strong>Rent 17x @$3 each</strong></td>
<td>51</td>
<td></td>
<td>51</td>
</tr>
<tr>
<td><strong>End of Y2</strong></td>
<td></td>
<td>(5)</td>
<td>(5)</td>
</tr>
</tbody>
</table>

**Total video expenses = $20**
Accrual Accounting and Periodic Adjustments

- In many cases, assets and liabilities are created or discharged without the occurrence of a visible documentable exchange transaction.
  - Interest is earned continually on a bank savings account as **time passes**
  - Machinery depreciates **as it is used** in a company's operations.
- Periodically, adjusting journal entries are made to record these effects.
- Recall Blockbuster example
Accrual Accounting and Periodic Adjustments

- Adjusting entries
  - Made whenever financial statements are prepared. Why?
  - Adjusting entries are designed to
    - Correctly compute periodic income
    - Correctly show balances of assets and liabilities at the end of the period
Periodic Adjustments

Characteristics of an adjusting journal entry:
- matching of expenses and revenues
- involves at least one temporary (revenue, expense, or dividend) account and at least one permanent (asset or liability) account.
- never involves the cash account
Four ways that recognition and cash do not coincide

- Pay Cash before Recognize Expense before Balance Sheet Date
- Recognize Expense before Pay Cash before Balance Sheet Date
Four ways that recognition and cash do not coincide
Types of Periodic Adjustments

- **Expense or Revenue before Cash**
  - Expense *incurred* today, but cash paid tomorrow.
    - Salary earned by employees but not paid at the end of accounting period.
    - Employees earn salary when they perform their duties, not when they receive payment.
    - Unpaid salary is a Salary Payable liability
  - Revenue *earned* today, but cash received tomorrow
    - Interest earned today, but cash received tomorrow.
    - Interest is a reward for lending money, so it is earned with passage of time
    - Interest receivable asset
Types of Periodic Adjustments

- **Cash before accruing Revenue or Expense (Cost Expirations or Revenue Expirations)**
  - Cash paid yesterday, Expense **incurred** today.
    - 1998 rent paid in advance in 1997
    - Rent paid in advance asset
  - Cash received yesterday, revenue **earned** today
    - Cash advance from customer for services not yet performed
    - Cash advance is Unearned Revenue liability
- **Matching** is the guiding principle in periodic adjustments.
  - Objective: To match the revenue earned in a period (whether received **in that period** in cash or not) with all the expenses incurred to earn that revenue (whether paid **in that period** in cash or not).