Analyzing Operating Activities

5

Lecture

Lecture 5: Agenda

Analyzing operating activities

- **Income measurement**
  - Concepts
  - Measurement
  - Alternatives
  - Analysis
- **Nonrecurring Items**
  - Extraordinary
  - Discontinued
  - Accounting changes
  - Special items
- **Other operating items**
  - Deferred Charges
  - Interests & Taxes

Income Measurement

Concepts

Income*:

- Summarize in financial terms the operating activities of a business
- provides a measure of the <u>change in shareholders' wealth for a period</u> and an estimate of a company's future earning power.
- ACCOUNTING differs from ECONOMIC income
- Both differ from the cash flow measures

*Also called earnings or profit

Income Measurement

Concepts

Illustration Facts:

- Company with $100,000 in cash
- Buys building for $100,000
- Rents building for $12,000 per year
- End of the first year: building valued at $125,000

Income Measurement

Concepts

Illustration Facts:

- Net (free) cash flow = $(88,000)
- Operating cash flow = $12,000
- Economic income = $37,000
- ($12,000 rental income + $25,000 holding gain)
- Accounting income = $11,500 ($12,000 rental income - $500 depreciation*)

*Building's useful life is 50 years and its salvage value is $75,000—yearly straight-line depreciation is $500

Income Measurement

Concepts

Economic Income:

Two measures reflect the economic concept

- economic income
- permanent income

Income Measurement

Concepts

Economic Income:

- Equals net cash flows + the change in the fair value of net assets
- Measures change in shareholder value—reflecting the financial effects of all events in a comprehensive manner
- Includes both recurring and nonrecurring components—rendering it less useful for forecasting future earnings potential

- Related to Hicksian concept of income—income includes both realized (cash flow) and unrealized (holding gain or loss) components

Income Measurement

Concepts

Permanent Income*

- Equals stable average income that a company is expected to earn over its life
- Reflects a long-term focus
- Directly proportional to company value
- Often expressed by dividing permanent income by cost of capital

*Also called sustainable earning power, or sustainable or normalized earnings

Income Measurement

Concepts

Economic Income and Permanent Income

Income Measurement

Concepts

Accounting Concept of Income:

- Based on <u>accrual</u> accounting
- Capture aspects of <u>both economic</u> income and <u>permanent</u> income

- Suffers from <u>measurement problems</u>—yields accounting analysis

Income Measurement

Concepts

Revenue Recognition and Expense Matching :

Revenue recognition

Revenues must be

(1) realized or realizable, and

(2) earned

Costs/Expenses matched with recognized revenues

Product costs—recognized when product or service sold

Period costs--recognized when incurred

Income Measurement

Concepts

Economic Income vs. Accounting Income:

Economic Income and Accounting Income reflect similar concepts

BUT:

Accounting income is a product of the financial reporting environment—accounting standards, enforcement mechanisms, managers' incentives, etc.

HENCE:

Accounting income can diverge from economic income (yielding accounting distortions)

Income Measurement

Concepts

Accounting Income consists of:

- **Permanent Component**--the recurring component expected to persist indefinitely
- **Transitory Component**--the transitory (or non-recurring) component not expected to persist (Note: The concept of economic income includes both permanent and transitory components.)
- **Value Irrelevant Component**--value irrelevant components have no economic content; they are accounting distortions

Income Measurement

Concepts

Analysis Implications :

- **Adjusting** accounting income is important task
- Necessary to specify **analysis objectives**--e.g., determining economic income or permanent income or sustainable earning power
- Adopt an inclusive approach—including **recurring** and **non-recurring** components

Income Measurement

Measurement

Two main components of accounting income:

Revenues (gains)
Expenses (losses)

Income Measurement

Measurement

Revenues and Gains

- **Revenues** are earned inflows or prospective inflows of cash from operations*
- **Gains** are recognized inflows or prospective inflows of cash from non-operations**

* Revenues are expected to recur
**Gains are non-recurring

Income Measurement

Measurement

Expenses and Losses

- **Expenses** are incurred outflows, prospective outflows, or allocations of past outflows of cash from operations
- **Losses** are decreases in a company's net assets arising from non-operations

Expenses and losses are resource consumed, spent, or lost in pursuing revenues and gains

Income Measurement

Alternatives

Two major income dimensions:

1. operating versus non-operating
2. recurring versus non-recurring*

*Motivated by need to separate permanent and transitory components

Income Measurement

Alternatives

Operating vs. Non-Operating and Recurring vs. Non-Recurring

Income Measurement

Alternatives

Alternative Measures of Accounting Income

- **Net income**—widely regarded as "bottom line" measure of income
- **Comprehensive income**--includes most changes to equity that result from non-owner sources; it is actually the bottom line measure of income; is the accountant's proxy for economic income
- **Continuing income**--excludes extraordinary items, cumulative effects of accounting changes, and the effects of discontinued operations from net income (often erroneously referred to as "operating income")

Income Measurement

Analysis

Determination of Comprehensive Income—sample company

Net income
Other comprehensive income:
+/- Unrealized holding gain or loss on marketable securities
+/- Foreign currency translation adjustment
+/- Additional minimum pension liability adjustment
+/- Unrealized holding gain or loss on derivative instruments
Comprehensive income

Income Measurement

Measurement

Sample Income Statement

Amber Corp. and Subsidiaries

	2001	2000	1999
Sales	**$14,314**	$12,716	$13,033
Equity income	**51**	39	43
Interest income	**12**	74	15
Cost of goods sold	**(8,333)**	(7,567)	(8,001)
Gross profit	**$ 6,044**	$5,262	$ 5,090
Expenses:			
Selling and administrative	**$(2,964)**	$(2,478)	$(2,396)
Research and development	**(1234)**	(899)	(855)
Restructuring charge	**--**	(1016)	--
Interest expense	**(725)**	(715)	(654)
Income before taxes	**$ 1,121**	$ 154	$ 1,185
Income taxes	**(336)**	(351)	(356)
Income from continuing operations	**$ 785**	$ (197)	$ 830
Gain from extinguishment of debt	**38**	--	--
Loss from operating discontinued segment	**--**	0	(23)
Gain from sale of discontinued segment	**--**	--	66
Net income	**$ 823**	$ (197)	$ 873
Foreign currency translation adjustments	**82**	(54)	(31)
Unrealized holding gains on available-for-sale securities	**24**	22	6
Additional minimum pension liability adjustment	**0**	(4)	--
Comprehensive income	**$ 929**	$ (233)	$ 848

Income Measurement

Analysis

Operating versus Non-Operating Income

Operating income--measure of company income as generated from operating activities

Three important aspects of operating income

- Pertains only to income generated from operations
- Focuses on income for the company, not simply for equity holders (means financing revenues and expenses are excluded)
- Pertains only to ongoing business activities (i.e., results from discontinued operations is excluded)

Non-operating income--includes all components of net income excluded from operating income

Useful to separate non-operating components pertaining to financing and investing

Non-Recurring Items

- Extraordinary items
- Discontinued segments
- Accounting changes
- Restructuring charges
- Special items

Non-Recurring Items

Extraordinary Items

Criteria

- Unusual in nature
- Infrequent in occurrence

Examples

Uninsured losses from a major casualty (earthquake,hurricane, tornado), losses from expropriation, and gains and losses from early retirement of debt

Disclosure

Classified separately in income statement

Non-Recurring Items

Extraordinary Items

Analyzing Extraordinary items:

- Are non-recurring in nature
- Excluded when computing permanent income
- Included when computing economic income
- Can reveal risk exposures
- Can impact computation of sustainable earning power
- Often Excluded when making comparisons over time or across firms

Non-Recurring Items

Discontinued Operations

Concept and accounting

- Are related to the dispose of entire divisions or product lines.
- Assets and business activities of the divested segment must be clearly distinguishable from those of the remaining entity
- Income statements for the current and prior two years are restated after excluding the effects of discontinued operations
- Gains or losses from the discontinued operations are reported separately, net of tax

Non-Recurring Items

Accounting Changes

Accounting changes are of 3 types:

1. Accounting principle change
2. Accounting estimate change
3. Reporting entity change

Non-Recurring Items

Accounting Changes

Analyzing Accounting Changes

- Are cosmetic and yield no cash flows
- Can better reflect economic reality
- Can reflect earnings management (or even manipulation)
- Impact comparative analysis (apples-to-apples)
- Effect both economic and permanent income
  - *For permanent income, use the new method and ignore the cumulative effect*
  - *For economic income, evaluate the change to assess whether it reflects reality*

Non-Recurring Items

Special Items

Special Items--transactions and events that are unusual or infrequent (not both)

These items are typically reported as separate line items on the income statement before continuing income

Two major types

- Asset impairments (write-offs)
- Restructuring charges

Non-Recurring Items

Special Items

Asset Impairment—when asset fair value is below carrying (book) value

Some reasons for impairments

- Decline in demand for asset output
- Technological obsolescence
- Changes in company strategy

Accounting for impairments

- Report at the lower of market or cost
- No disclosure about determination of amount
- No disclosure about probable impairments
- Flexibility in determining when and how much to write-off
- No plan required for asset disposal
- Conservative presentation of assets

Non-Recurring Items

Special Items

Restructuring Charges—costs usually <u>related to major changes in company business</u>

Examples of these major changes include

- Extensive reorganization
- Divesting business units
- Terminating contracts and joint ventures
- Discontinuing product lines
- Worker retrenchment
- Management turnover
- Write-offs combined with investments in assets, technology or manpower

Accounting for estimated costs of restructuring program

- Establish a provision (liability) for estimated costs
- Charge estimated costs to current income
- Actual costs involve adjustments against the provision when incurred

Revenue Recognition

Guidelines

Revenue Recognition Criteria

- Earning activities are substantially complete and no significant added effort is necessary
- Risk of ownership is effectively passed to the buyer
- Revenue, and related expense, are measured or estimated with accuracy
- Revenue recognized normally yields an increase in cash, receivables or securities
- Revenue transactions are at arm's length with independent parties
- Transaction is not subject to revocation

Deferred Charges

Costs incurred but deferred because they are expected to benefit future periods

Consider three categories of deferred costs

- Research and development
- Computer software costs
- Costs in extractive industries

Deferred Charges

Research and Development

Accounting for R&D is problematic due to:

- High uncertainty of any potential benefits
- Time period between R&D activities and determination of success
- Intangible nature of most R&D activities
- Difficulty in estimating future benefit periods

Hence:

- Accounting requires expensing R&D when incurred
- Only costs of materials, equipment, and facilities with alternative future uses are capitalized as tangible assets
- Intangibles purchased from others for R&D activities with alternative future uses are capitalized

Deferred Charges

Costs in Extractive Industries

Search and development costs for natural resources is important to extractive industries including oil, gas, metals, coal, and nonmetallic minerals

Two basic accounting viewpoints:

- "Full-cost" view—all costs, productive and nonproductive, incurred in the search for resources are capitalized and amortized to income as resources are produced and sold

- "Successful efforts" view—all costs that do not result directly in discovery of resources have no future benefit and should be expensed as incurred

Interest and Taxes

Interest Defined

Interest

Compensation for use of money

Excess cash paid beyond the money (principal) borrowed

Interest rate

Determined by risk characteristics of borrower

Interest expense

Determined by interest rate, principal, and time

Interest and Taxes

Interest Capitalization

Accounting requires interest capitalization when asset

- constructed or produced for a company's own use
- constructed or produced for a company by others where deposits or progress payments are made

Aims of interest capitalization

(1) Better measure asset acquisition cost

(2) Better amortize acquisition cost against revenues generated

Interest and Taxes

Income Taxes

- Substantial cost of business
- Important to analysis of financial statements
- Analysis focus on periodic income tax expense

Interest and Taxes

Income Tax Accounting

- Identifying types and amounts of temporary differences and the nature and amount of each type of operating loss and tax credit carryforward
- Measuring total deferred tax liability for taxable temporary differences
- Computing total deferred tax asset for deductible temporary differences and operating loss carryforwards
- Measuring deferred tax assets for each type of tax credit carryforward
- Reducing deferred tax assets by a valuation allowance

Interest and Taxes

Income Tax Differences

Taxable Income

1

Financial Statement Income
(book income)

1) Permanent differences

2) Temporary (or timing) differences

Interest and Taxes

Permanent Income Tax Differences

Permanent differences result from tax regulations where:

- Items are nontaxable
- Deductions are not allowed
- Special deductions are granted by law (i.e. dividends)

Effective tax rate can vary from statutory rate due to:

- Basis of property differs for financial and tax accounting
- Special tax privileges
- Lower corporate income tax rate up to a certain level
- Tax credits
- Different tax rates on foreign income
- Tax expense includes both state and local income taxes
- Tax loss carryforward benefits

Interest and Taxes

Temporary Income Tax Differences

Taxable Income

1

Financial Statement Income

1) Revenue or gain recognized in financial reporting but deferred for tax purposes
2) Expenses deducted for tax purposes *exceed* these expenses for financial reporting
3) Revenue or gain recognized or tax but *deferred* for financial reporting
4) Expenses deducted for financial reporting *exceed* these expenses for tax.

Interest and Taxes

Income Tax Analysis

Taxable Income

1

Financial Statement Income

- Tax loss carrybacks yield tax refunds in the loss year and are an asset
- Tax loss carryforwards yield deferred assets
- Tax accounting ignores the time value of money
- Income tax disclosures explain why effective tax differs from statutory tax
- Effective tax rate reconciliation is useful for forecasting
- Components of deferred income tax reveal future cash flow effects

Earnings Per Share - EPS

- **Simple Capital Structure**

$$\text{Basic EPS} = \frac{\text{Net Income} - \text{Preferred Dividends}}{\text{Weighted-average \# of common shares outstanding}}$$

- **Complex Capital Structure**

$$\text{EPS} = \frac{\text{Net income less preferred dividends}}{\text{Weighted average Common shares}} - \text{EPS impact of dilutive options \& warrants} - \text{EPS impact of dilutive convertibles}$$

Basic EPS

Diluted EPS

Earnings Per Share - EPS

Sources of Potential Dilution

Earnings Per Share - EPS

Computations

Earnings Per Share - EPS

Computations

To illustrate the computation of EPS, consider a company with the following securities outstanding:

-Common Stock:	1,000,000 shares outstanding for the entire year.
-Preferred stock:	500,000 shares outstanding for the entire year.
-Convertible bonds:	$5,000,000 6% bonds, sold at par, convertible into 200,000 shares of common stock
-Employee stock options:	options to purchase 100,000 shares at $30 have been outstading for the entire year. The average market price of the company's common stock during the year is $40.
-Net Income:	$3,000,000
-Preferred dividends:	$50,000
-Marginal tax rate:	35%

$$\text{Basic EPS} = \frac{\$3{,}000{,}000 - \$50{,}000}{1{,}000{,}000} = \$2.95$$

$$\text{Diluted EPS} = \frac{\$3{,}000{,}000 - \$50{,}000 + [(\$5{,}000{,}000 \times 6\%)(1-.35)]}{1{,}000{,}000 + 200{,}000 + 25{,}000} = \$2.57$$