Income Statement: Results of Operating Performance

15.501/516 **Accounting**

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Some administrative matters again (sigh!)

- Assignments 1 and 2: due next Wednesday, Feb 18th

- Next class: as per MIT schedule, Tuesday Feb 17th

Should we recognize the asset?

Assets arise from transactions and events

- A firm issues a $12m check to an insurance company for liability insurance over the next year.
- A firm issues a check for $500K as a deposit on a custom-built machine.
- A firm buys stock in another firm for $325K
- A firm acquires chemicals to be used as raw materials for $800K.

Should we recognize the asset?

Assets arise from transactions and events

- A well-known scientist is hired to manage the R&D function for 480K a year. Employment starts next month.
- The firm receives an order for $15K in products.
- The firm writes a check for $1M to obtain an option to purchase a tract of land.
- A firm receives notice from a supplier that it has shipped raw materials of $200K. The firm has title to the goods while in transit.
- The firm purchases a patent from its creator for $1.2M

Should we recognize the liability?

Liabilities arise from transactions and events

- The firm owes its attorneys $50K in legal expenses.
- The firm provides warranties on its products.
- The firm borrows $60K from the bank for a 90-day period.

Accounting Transactions

- What business transactions are recorded in the financial accounting system?
  - Exchange of assets and liabilities with other entities
  - As opposed to “executory” transactions
    - Supplier: I will supply 5,000 units six months from now.
    - Customer: I will pay when I receive the goods
    - Exchange of promises
- How do transactions affect the accounting equation?
  - The accounting identity is always maintained

Joe's Landscaping Service

(1) Joe contributes $10,000 in cash

- Assets = Liabilities + Owners' Equity
- Cash Contributed Capital
- +$10,000 +$10,000

Transactions and the Accounting Equation

Cash	+	A/R	+	Equip.	=	L/P	+	C. Cap.	+	R/E
+10,000								+10,000		

(2) **The** company **borrows $3,000 from a bank**

- Assets = Liabilities + Owners' Equity
- Cash Loans Payable
- +$3,000 +$3,000

Transactions and the Accounting Equation

Cash	+	A/R	+	Equip. =	L/P	+	C. Cap.+	R/E
+10,000							+10,000	
+ 3,000					+ 3,000			

(3) Company purchases equipment for $5,000 cash

- Assets = L + OE
- Cash Equipment
- -$5,000 +$5,000

Transactions and the Accounting Equation

Cash	+	A/R	+	Equip.	=	L/P	+	C. Cap.	+	R/E
+10,000								+10,000		
+ 3,000						+ 3,000				
- 5,000				+ 5,000						

(4) Company performs service for $12,000. The customer pays $8,000 in cash and promises to pay the balance at a later date.

Assets		=	L	+	Owners' Equity
Cash	Receivables				Retained Earnings
+$8,000	+4,000				+$12,000

Transactions and the Accounting Equation

Cash +	A/R +	Equip. =	L/P +	C. Cap.+	R/E
+10,000				+10,000	
+ 3,000			+ 3,000		
- 5,000		+ 5,000			
+ 8,000	+ 4,000				+12,000

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

- Assets = Liabilities + Owners' Equity
- Cash Retained Earnings
- -$9,000 -$9,000

Transactions and the Accounting Equation

Cash +	A/R +	Equip. =	L/P +	C. Cap.+	R/E
+10,000				+10,000	
+ 3,000			+ 3,000		
- 5,000		+ 5,000			
+ 8,000	+ 4,000				+12,000
- 9,000					- 9,000

(6) Company pays dividend of $1,000

- Assets = Liabilities + Owners' Equity
- Cash Retained Earnings
- -$1,000 -$1,000

Transactions and the Accounting Equation

Cash	+	A/R	+	Equip.	=	L/P	+	C. Cap.	+	R/E
+10,000								+10,000		
+ 3,000						+ 3,000				
- 5,000				+ 5,000						
+ 8,000		+ 4,000								+12,000
- 9,000										- 9,000
- 1,000										- 1,000
6,000		***4,000***		***5,000***		***3,000***		***10,000***	***+***	***2,000***

Balance Sheet as at December 31, 1997

Assets	Amount	Liabilities and Owners' Equity	Amount
Cash	6,000	Loans Payable	3,000
Receivables	4,000	Contributed Capital	10,000
Equipment	5,000	Retained Earnings	2,000
Total Assests	**$15,000**	**Total Liabilities and Owners' Equity**	**$15,000**

Transactions and Accounting Equation

Cash	+	A/R	+	Equip.	=	L/P	+	C. Cap.	+	R/E
+10,000								+10,000		
+ 3,000						+ 3,000				
- 5,000				+ 5,000						
+ 8,000		+ 4,000								***+12,000***
- 9,000										***- 9,000***
- 1,000										***- 1,000***
6,000		4,000		5,000		3,000		10,000		+ 2,000

Income Statement
For the year ended December 31, 1997

Revenues:	**Fees earned for service**	**$12,000**
Expenses:	**Wages, interest, maintenance**	**$ 9,000**
Net income		**$ 3,000**

Transactions and Accounting Equation

Cash	+ A/R	+ Equip.	= L/P	+ C. Cap.	+ R/E
+10,000				+10,000	
+ 3,000			+ 3,000		
- 5,000		+ 5,000			
+ 8,000	+ 4,000				+12,000
- 9,000					- 9,000
- 1,000					- 1,000
6,000	4,000	5,000	3,000	10,000	+ 2,000

Statement of Cash Flows
For the year ended December 31, 1997
[To be revisited later in the course]

Operating activities:		
Sale of a service (4)	8,000	
Payments for expenses (5)	(9,000)	
Net cash from operating activities		(1,000)
Investing activities:		
Purchase of equipment (3)	(5,000)	
Net cash from investing activities		(5,000)
Financing activities:		
Borrowings (2)	3,000	
Owner contributions (1)	10,000	
Payment of dividends (6)	(1,000)	12,000
Increase in cash balance		6,000
Cash balance at the beginning of the year		0
Cash balance at the end of the year		6,000

Statement of Retained Earnings
For the year ended December 31, 1997

Beginning retained earnings balance	**0**
Plus: Net income	**3,000**
Less: Dividend to stockholder	**1,000**
Ending retained earnings balance	**$ 2,000**

Summary

- Balance sheet
  - Listing of
    - Resources owned by a firm (assets or investments)
    - Financing of the assets through obligations to external parties (liabilities)
    - Financing of the investments through residual claimants (shareholders’ equity)
  - Preparing a balance sheet (and other financial statements) using transaction history

Chapter 3: Income Statement

Accounting in a "one-period" world

- Cash Invested — + Cash Returned

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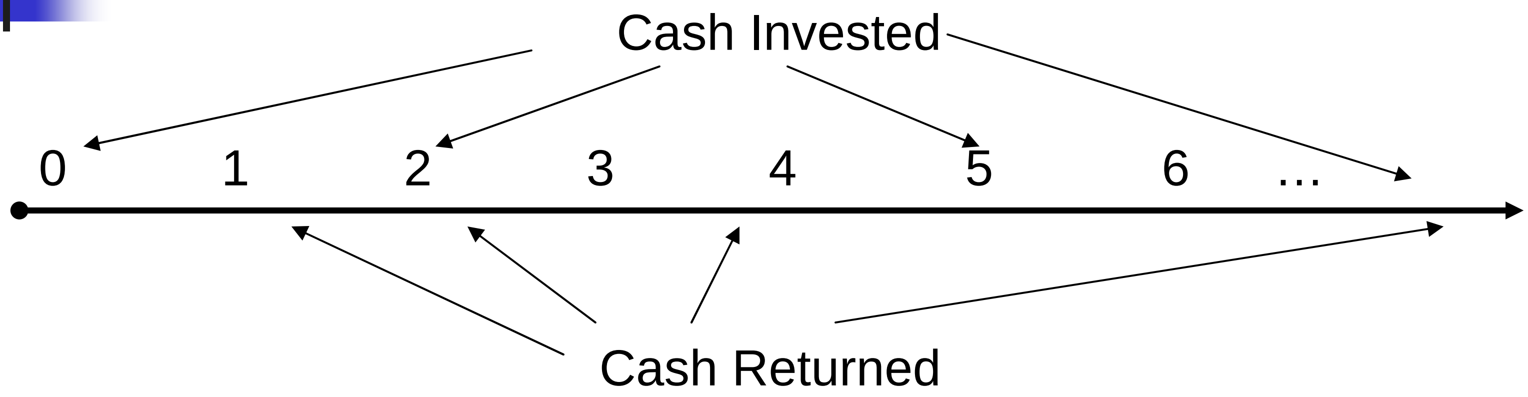
- Example: Shipping Expeditions in the 15th Century
- Ship sold at the end of a voyage: Finite project life
- No information flow from time ship left port until it returned
- Performance: Discounted Cash Flow (DCF)

Accounting in a "multi-period" world



- No pre-determined end to a firm's life - going concern
- Cash invested and generated at multiple points in time
- Subsequent actions affected by prior results - feedback

Principles in Preparing Financial Statements: Fiscal Period

- Artificially divide the life of an organization into annual periods for the purpose of financial reporting.
  - SEC requires quarterly reporting.
  - Internationally, trend toward quarterly reporting
- Why is there a demand for periodic performance measures?
  - Valuation
  - Evaluate management performance
    - Reward management
    - Decide whether to continue to trust the firm’s assets with the current management
- Ideally, all the relevant information with respect to a firm’s performance should be in the quarterly report on a timely basis. Is that the case?

Financial Accounting Principles: Objectivity and Conservatism

- **Objectivity**: financial accounting information must be verifiable and reliable.
- **Conservatism**
  - Asymmetry in the treatment of gains and losses
  - Greater degree of verification for gains than for losses
  - Required by GAAP, but arose voluntarily. Why?
    - Management's incentive to report good information, hide bad information
    - Asymmetric payoff to bondholders
    - Credibility of information in valuation
  - Conservatism **does not** suggest that financial statements should **arbitrarily** understate assets and overstate liabilities.

Income Statement: Results of Operating Performance

- Revenues -- Sales or service revenue
- Gains -- e.g., selling an equipment for cash greater than its net book value
- Expenses -- Cost of goods sold, operating expenses, etc.
- Losses
- Other revenues and expenses
  - Interest revenue, dividend income, interest expense for a manufacturing or merchandising firm.

Income Statement: Results of Operating Performance

- The income statement measures **firm performance** regardless of when cash is exchanged. Toward this end, two key principles are

- Revenue Recognition:
  - Earnings process substantially complete
  - Cash collection reasonably assured
    - Conservatism principle is applicable

- The Matching Principle for Expenses:
  - Match *efforts* to the benefits generated
  - Capitalize expenditures that will benefit future periods, expense as benefits are realized
  - Recognize liabilities when efforts benefiting the current period require cash payment in the future
  - Produces a difference between cash flows and earnings

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Matching Example

- Blockbuster video buys a copy of the Matrix Reloaded video for $20.

- Experience indicates that video will be rented:

Year1	Year2
50x	17x

- How much should Blockbuster recognize as an expense each year?

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Matching Example

	Year1	Year2
Estimate:	50x	17x

How much should Blockbuster recognize as an expense each year?

$$\frac{50}{67} \qquad \frac{17}{67}$$

(50+17)

Matching Example

	Year1	Year2
Estimate:	50x	17x

How much does Blockbuster recognize as an expense each year?

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

Yearly Expenses	**$15**	**$5**

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Matching Example

	Year1	Year2	Year3
Estimate 2:	50%	25%	25%

Matching Example

	Year1	Year2	Year3
Estimate 2:	50%	25%	25%
Yearly Expenses	**$10**	**$5**	**$5**

Recording video expenses

	Cash	**Video Asset**	**Retained Earn.**
Buy Video			

Recording video expenses

	Cash	Video Asset	Retained Earn.
Buy Video	(20)	20	

Recording video expenses

	Cash	Video Asset	Retained Earn.
Buy Video	(20)	20	
Rent 50x @$3each			

Recording video expenses

	Cash	Video Asset	Retained Earn.
Buy Video	(20)	20	
Rent 50x @$3each	150		150

Recording video expenses

	Cash	Video Asset	Retained Earn.
Buy Video	(20)	20	
Rent 50x @$3each	150		150
End of Y1			

Recording video expenses

	Cash	Video Asset	Retained Earn.
Buy Video	(20)	20	
Rent 50x @$3each	150		150
End of Y1		(15)	(15)

Recording video expenses

	Cash	Video Asset	Retained Earn.
Buy Video	(20)	20	
Rent 50x @$3each	150		150
End of Y1		(15)	(15)
Rent 17x @$3each			

Recording video expenses

	Cash	Video Asset	Retained Earn.
Buy Video	(20)	20	
Rent 50x @$3each	150		150
End of Y1		(15)	(15)
Rent 17x @$3each	**51**		**51**

Recording video expenses

	Cash	Video Asset	Retained Earn.
Buy Video	(20)	20	
Rent 50x @$3each	150		150
End of Y1		(15)	(15)
Rent 17x @$3each	51		51
End of Y2			

Recording video expenses

	Cash	Video Asset	Retained Earn.
Buy Video	(20)	20	
Rent 50x @$3each	150		150
End of Y1		(15)	(15)
Rent 17x @$3each	51		51
End of Y2		**(5)**	**(5)**

Recording video expenses

	Cash	Video Asset	Retained Earn.
Buy Video	(20)	20	
Rent 50x @$3each	150		150
End of Y1		(15)	(15)
Rent 17x @$3each	51		51
End of Y2		(5)	(5)

Total video expenses = $20

Recording video expenses

Estimate 1 and Estimate 2

	Cash	Video Asset		Retained Earn.	
Buy Video	(20)	20			
Rent 50x @$3each	150			150	
End of Y1		(15)	(10)	(15)	(10)
Rent 17x @$3each	51			51	
End of Y2		(5)	(5)	(5)	(5)
End of Y3			(5)		(5)

Total video expenses = $20 $20

What is Cost of Goods Sold?

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

- 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
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- = Cost of Goods Sold or Cost of Sales
- Assets = L + Owners' Equity

What is Gross Profit or Margin?

- Assets = L + Owners' Equity
- Cash Inventory Retained Earnings

- Increase in retained earnings
- Gross Profit or Margin = Sales Revenue (-) Cost of Goods Sold =
- GM **rate** =

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

Sales	**11,596,075**
Cost of goods sold& Occupancy costs	**08,652,593**
Gross Profit	02,943,482
<u>Operating expenses</u>	
Operating &selling	01,795,428
Pre-opening	00,008,746
General & administrative	00,454,501
Amortization on intangibles	00,002,135
Amortization on goodwill	0
Asset impairment charges	0
Store closure charge	0
Interest & other expenses	00,020,609
Total operating & other expenses	**02,281,419**
Income before taxes	00,662,063
Income taxes	00,215,963
Net income	**00,446,100**

Components of Income

- Income from Continuing Operations
- Discontinued Operations
  - Income or Loss from Discontinued Operations
  - Gain or Loss on Disposal of Discontinued Operations
- Extraordinary Items (Unusual **and** Infrequent)
- Cumulative Effect of Change in Accounting Principles

Advantages of Income Statement Components

- Forecasting future performance
- Distinguish between **core operating performance** (recurring items) versus **transitory components** (unusual and/or infrequent items)
- Disclosure on Discontinued Operations
- An example: Firm A has two business segments, i.e., M & N.
- In 1997, A's total income was $100,000 (M earned $70,000 and N earned $ 30,000)
- All numbers are assumed after tax

Advantages of Income Statement Components

- 1997 Net Income (= ICO) = $100,000
- In 1998, the total income was $100,000 also.
- M earned $90,000 income whereas N earned only $10,000.
- **On December 31, 1998**, Firm A **decides** to discontinue the business segment N.
- It **expects to lose** $15,000 by disposing off the assets of N.
- i.e., it will generate $15,000 less cash compared to the net book value of the assets of segment N.

Advantages of Income Statement Components

- What would Firm A disclose in its 1998 financial statements?
- Usually comparative statements are provided

	1998	1997
Income from Cont. Ops.	$90,000	$70,000
Income from Disc. Ops.	10,000	30,000
Loss on sale of Disc. Ops.	(15,000)	
Net Income	85,000	100,000

Summary

- Key principles underlying financial statement preparation
  - Objectivity
  - Conservatism
  - Matching
  - Revenue recognition
- Income statement
  - Preparing an income statement from transaction history
  - Presentation
  - Information in components of income