Depreciation is the charge-off of historic cost as permitted by the IRC against annual revenues.

- Government can adjust depreciation schedules in the IRC to accomplish desired economic objective(s).
- Depreciation for tax purposes is determined using the MACRS, *modified accelerated cost recovery systems*.
- Depreciation for tax purposes can differ from depreciation for financial accounting.
- Depreciation is a *non-cash expense*, and thus it is added to the net income together with interest expense in estimating the operating cash flow, i.e.:

Operating CF = N.I. + Depreciation + Interest

- Interest expense is considered a *financing* expense, not an operating expense.

Depreciable value of an asset = full cost + installation cost

- Depreciable life of an asset is determined according to the IRC.
- In general, given financial managers’ preference for earlier receipt of CFs, a shorter depreciable life is preferred to a longer one.

The rounded depreciation percentages under MACRS, modified accelerated cost recovery system.

	Property class			
Recovery year	3 years	5 years	7 years	10 years
1	33%	20%	14%	10%
2	45	32	25	18
3	15	19	18	14
4	7	12	12	12
5		12	9	9
6		5	9	8
7			9	7
8			4	6
9				6
10				6
11				4
Total	100	100	100	100

Double-declining (200%) and half-year convention

For 3-year property class, we have:

6x = 200%

x = 33 1/3 %

For 7-year property class, we have:

14x = 200%

x = 14.285714…..%

CASH FLOW

From the balance sheet identity of:

assets = liability + equity

we've the CF identity as:

CF from assets = CF to creditors + CF to stockholders

- CF from assets = Operating CF - net capital expenditure - addition to NWC
- Operating CF = N.I. + Depreciation + Interest
- Net cap. Expenditure = (ending - beginning) net fixed assets + Depreciation
- Addition to NWC = (ending - beginning) NWC

- CF to creditors = interest paid - net new borrowing
- CF to stkholders = dividends - net new equity raised

<u>Example</u>: Tiger Paw Corporation had the following operating results for 200x: sales = \$4k; COGS = \$2k; depreciation = \$1k; interest expense = \$300, dividends paid = \$250. At the beginning of the year, net fixed assets were \$3k, current assets were \$2k, and current liabilities were \$1k. At the end of the year, net fixed assets were \$3,600, current assets were \$2,750, and current liabilities were \$1,250. The tax rate for 200x was 34%.

a. what is the net income for 200x?

b. what is the operating CF for 200x?

c. what is the CF from assets for 200x? Is this possible?

d. If no new debt were issued the year, what is the CF to bondholders? What is the CF to stockholders? Explain and interpret the positive and negative signs of your answers in (a) and (d) above.

Solutions:

a. Net income = (4k - 2k - 1k - 300)*(1-.34) = \$462.

b. Operating CF = 462 + 1k + 300 = \$1,762.

c. Capital expenditure = \$3,600 - \$3k + 1k = \$1,600

Ending NWC = 2,750 - 1250 = 1500

Beginning NWC = 2k - 1k = 1k

Hence, Δ in NWC = 1,500 - 1k = 500

Thus, CF from assets = 1,762 - 1,600 - 500 = -\$338.

d. CF to bondholders = \$300 + 0 = \$300.

CF to stkholders = -338 - 300 = -\$638

The negative sign in CF from assets negates the preposition “from” and makes it a net CF “to” assets meaning the firm made capital expenditure in the year that resulted in CF “to” instead of CF “from” assets.

The negative sign in CF to stkholders negates the preposition “to” and makes it a net CF “from” stkholders meaning the firm sold more stk in the year that resulted in net CF “from” stkholders instead of CF “to” them.

Supplementary Homework Problems

Use the following information for Flies Right Inc. to work the next two problems. The average tax rate is 34%.

	2002	2003
Sales	$1,745	$1,900
Depreciation	184	184
COGS	690	770
Other expenses	165	150
Interest	122	148
Cash	955	1,190
Receivable	1,444	1,555
Short-term notes payable	179	149
Long-term notes	3,475	4,300
Net fixed assets	8,106	8,315
Accounts payable	1,050	1,000
Inventory	2,188	2,275
Dividends	150	165

Q1. Draw up an income statement and balance sheet for this firm for 2002 and 2003.
Q2. For 2003, estimate the CF from assets, CF to bondholders, and CF to stockholders.
Answers: CF from assets = -$146.32; CF to bondholders = -$677; and CF to stockholders = $530.68

Sources and Uses of Cash

Sources	Uses
Decrease in any asset	Increase in any asset
Increase in any liability	Decrease in any liability
Net profits after taxes	Net loss
Depreciation and other non-cash charges	Dividends and interest paid
Sale of stock	Repurchase or retirement of stk

Let's defer financial planning and cash budgets to FIN6602, *Short-term financial management*.