

**Part I Capital Budgeting – Chapter 12**

**Capital Budgeting** is a process used for analysis and selection of the long-term investments of a business.

Obtain capital in three ways:

1. Retained Earnings (equity financing)
2. Selling stock (equity financing)
3. Issuing debt (debt financing)

Once the expenditure is identified, the firm has to generate a satisfactory rate of return for the company. A company's **cost of capital** is often calculated as the weighted average cost of its debt and equity financing.

Capital Structure:

Assets	=	Liabilities	+	Owner's Equity
\$4,000,000	=	\$1,000,000	+	\$3,000,000

Required Returns:

Liabilities	12%
Owner's Equity	16%

Financing Proportions:

Liabilities	\$1,000,000	1/4
Owner's Equity	<u>\$3,000,000</u>	3/4
Total	\$4,000,000	

Cost of Capital = Weighted average cost of financing

Cost of Capital = (Liability proportion X Liability required return) + (Owners' Equity Proportion X Owners' equity required return)

Cost of Capital =  $(1/4 \times 12\%) + (3/4 \times 16\%) = 15\%$

E12.1 (from text)

Russell Corporation's capital structure consists of \$2,690,000 of assets and \$1,600,000 of liabilities. Joe Russell, the corporation's CEO and largest shareholder, says that the debt has average interest rate of 9 percent and that shareholders want a 16 percent return.

**Part II Net Present Value – Chapter 12**

**Net Present Analysis** is a method of evaluating investments that uses the time value of money to assess whether the investment's expected rate of return is greater than the company's cost of capital.

Four Step Process:

1. Estimate the timing and amount of all cash inflows and outflows associated with the potential investment over its anticipated life.
2. Calculate the present value of the expected future cash flows using the company's cost of capital as the discount rate.
3. Compute the net present value by subtracting the initial cash outflows necessary to acquire the asset from the present value of the future cash flows.
4. Decide to make or reject the investment in the capital asset. If the net present value is zero or positive, the proposed investment is acceptable. If the NPV is negative, the company should reject the project.

**Even Cash Flow Example**

Example from text: A company wants to acquire equipment worth \$750,000. The equipment is going to save the firm \$250,000 per year over the next four years. The cost of capital (aka hurdle rate) is 10%. Should the firm purchase the equipment?

## 1. Identify Cash flows

	N=0	N=1	N=2	N=3	N=4
Cash Outflows (750,000)					
Cash Inflows		250,000	250,000	250,000	250,000

## 2. Find the present value of the future cash flows.

ANN= 250,000; c=1; n=4; FV=0; r=10; PV=792,466.36

## 3. Compute the net present value

Present value of future cash flows	792,466
Less: initial investment	<u>750,000</u>
Net present value	<u>\$42,466</u>

## 4. Accept or reject the proposal

Accept because the NPV is positive

**Uneven Cash Flow Example**

Assume that the \$750,000 equipment is expected to generate the following cash flows:

Year 1 \$300,000

Year 2 \$260,000

Year 3 \$240,000

Year 4 \$200,000

1. Cash inflows listed above with a cash outflow in year 0 of (\$750,000)

2. Find the present value of future cash flows

c	n	r	ANN	FV	PV
1	1	10	0	300,000	272,727
1	2	10	0	260,000	214,876
1	3	10	0	240,000	180,316
1	4	10	0	200,000	<u>136,603</u>
Total					804,522

3. Compute NPV

Present value of cash flows	804,522
Less: Initial investment	<u>750,000</u>
NPV	<u>54,522</u>

4. Accept or reject

Accept because the NPV is positive

E12.3 (from text)

Gerard, a not-for-profit entity, is considering the acquisition of a baseball winder that costs \$46,200. The baseball winder has an expected life of 10 years and is expected to reduce production costs by \$8,857 a year. Gerard's hurdle rate is 11 percent. What is the net present value of this project? Should Gerard undertake this investment? Why?

E12.6 (from text)

Murdock Company, a not-for-profit enterprise, is contemplating the acquisition of a new copier on December 30, 2007. The copier costs \$42,600, has an estimated life of six years, and is expected to save paper and time, as well as reduce repair cost. The cash Murdock expects to save as a result of buying the copier over the next six years is as follows:

2008	\$14,000
2009	\$12,000
2010	\$10,000
2011	\$8,000
2012	\$6,000
2013	\$4,000

What is the maximum price Murdock should pay for the copier if its hurdle rate is 15%? Calculate the net present value of the new copier using a 12 percent hurdle rate. Should Murdock Company buy the copier? Why?

**Part III Depreciation, depletion, and amortization – Chapter 16**

The three depreciation models that are used in this module are straight-line, units-of-production, and double declining balance. This section starts off with going over the difference between capital and revenue expenditures. A **capital expenditure** creates the expectation of future benefits that apply beyond the current accounting period. A **revenue expenditure** provides benefits exclusively during the current accounting period. Therefore we depreciate a capital expenditure over time whereas we expense a revenue expenditure during the current accounting period.

Discussion Question? Why might a company have an incentive to call an expenditure a capital expenditure rather than a revenue expenditure?

Other things to consider....

- When a company purchases land and a building together, the buyer must allocate the total purchase price between the two, because buildings and equipment are depreciable assets, whereas land is not.
- When we capitalize equipment, purchase price, freight charges, sales taxes paid, installation costs, assembly costs, and testing costs are added to the cost of the equipment. Discounts are deducted from the cost.
- When we purchase an insignificant amount of something like a screwdriver for \$5, the concept of materiality is used. If an item's dollar amount or its inherent nature is significant enough to influence a financial statement we capitalize it. For the screwdriver, the \$5 does not influence the financial statement so the Accountant will expense it for the current period even though we will use it in future periods.

For all depreciation models the following information is needed.

1. Cost of the asset.
2. Estimated useful life of the asset.
3. Estimated salvage value of the asset.
4. Method of depreciation.

Terms to cover: Carrying value (book value), salvage value, depreciable cost, useful life

Use a four column approach for each model.

Year	Annual Depreciation Expense	Accumulated Depreciation*	Carrying Value*
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\* denote year end

## M6 - NOTES AND SAMPLE PROBLEMS - CH 12 & 16

Purchase a delivery truck

Cost of asset: \$22,000

Useful life: 5 years

Salvage Value: \$2,000

Miles driven:

Year 1: 14,000

Year 2: 23,000

Year 3: 18,700

Year 4: 21,300

Year 5: 23,000

Calculate Straight Line

Year	Annual Depreciation Expense	Accumulated Depreciation*	Carrying Value*
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Calculate Units-of-Production

Year	Annual Depreciation Expense	Accumulated Depreciation*	Carrying Value*
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Calculate Double Declining Balance

Year	Annual Depreciation Expense	Accumulated Depreciation*	Carrying Value*
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**Depletion** uses units-of-production method to calculate depletion expense.

In 2010, Dan the hunter owns land in Western Kansas and uses it to hunt pheasants. One day while hunting, he shot his firearm striking the ground and oil shot into the air! Dan contacted a local oil company to survey his land and they estimated that there was over 200,000,000 barrels of oil that will take 10 years to pump out. The oil company paid Dan \$3,000,000 for the oil rights on his land. In 2010 no oil was produced from the land but in 2011, 200,000 barrels were produced.

Record the entry of the acquisition of the oil rights.

Oil Rights	
Cash	

What is the depletion rate?

What is the entry for depletion in 2011?

**Amortization** uses straight line to calculate amortization expense.

On January 1, 2008, Utica Corporation acquired a patent for \$500,000. Utica feels that it will use the patent for its legal life of 20 years.

What is the entry to record the amortization of the patent for 2008?

Amortization Expense	25,000	
Patent		25,000

On what financial statement will the patent be reported and how will its value appear on that statement at the end of 2009?

Reported on the Balance Sheet as an asset

Patent 450,000

**Part IV Disposal of PPE**

There are different ways to dispose of long term assets. Discard, sell, exchange with no cash, and exchange with cash payment. Losses and gains on sales can be incurred.

**Example 1**

PCs to Go is selling equipment for \$27,000. The original cost of the asset was \$80,000, and there was \$60,000 in Accumulated Depreciation account at the time of the sale. Record the journal entry below for the sale of equipment.

**Example 2**

PCs to Go is purchasing a new copier worth \$28,000. They are paying \$20,000 and exchanging an old copier which initially cost \$25,000 and has \$15,000 in Accumulated Depreciation account at the time of the sale. Record the journal entry below for the exchange.