

**MARR            12%**

<b>N</b>	<b>(F/P, i, N)</b>	<b>(P/F, i, N)</b>	<b>(F/A, i, N)</b>	<b>(A/F, i, N)</b>	<b>(P/A, i, N)</b>	<b>(A/P, i, N)</b>
<b>1</b>	1.1200	0.8929	1.0000	1.0000	0.8929	1.1200
<b>2</b>	1.2544	0.7972	2.1200	0.4717	1.6901	0.5917
<b>3</b>	1.4049	0.7118	3.3744	0.2963	2.4018	0.4163
<b>4</b>	1.5735	0.6355	4.7793	0.2092	3.0373	0.3292
<b>5</b>	1.7623	0.5674	6.3528	0.1574	3.6048	0.2774
<b>6</b>	1.9738	0.5066	8.1152	0.1232	4.1114	0.2432
<b>7</b>	2.2107	0.4523	10.0890	0.0991	4.5638	0.2191
<b>8</b>	2.4760	0.4039	12.2997	0.0813	4.9676	0.2013
<b>9</b>	2.7731	0.3606	14.7757	0.0677	5.3282	0.1877
<b>10</b>	3.1058	0.3220	17.5487	0.0570	5.6502	0.1770

<b>N</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
<b>(F/P, i, N)</b>	1.1200	1.2544	1.4049	1.5735	1.7623	1.9738
<b>(P/F, i, N)</b>	0.8929	0.7972	0.7118	0.6355	0.5674	0.5066
<b>(F/A, i, N)</b>	1.0000	2.1200	3.3744	4.7793	6.3528	8.1152
<b>(A/F, i, N)</b>	1.0000	0.4717	0.2963	0.2092	0.1574	0.1232
<b>(P/A, i, N)</b>	0.8929	1.6901	2.4018	3.0373	3.6048	4.1114
<b>(A/P, i, N)</b>	1.1200	0.5917	0.4163	0.3292	0.2774	0.2432

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2.2107	2.4760	2.7731	3.1058
0.4523	0.4039	0.3606	0.3220
10.0890	12.2997	14.7757	17.5487
0.0991	0.0813	0.0677	0.0570
4.5638	4.9676	5.3282	5.6502
0.2191	0.2013	0.1877	0.1770

Recovery Year	3-Year Property	5-Year Property	7-Year Property	10-Year Property	15-Year Property	20-Year Property
1	33.33%	20.00%	14.29%	10.00%	5.00%	3.75%
2	44.45%	32.00%	24.49%	18.00%	9.50%	7.22%
3	14.81%	19.20%	17.49%	14.40%	8.55%	6.68%
4	7.41%	11.52%	12.49%	11.52%	7.70%	6.18%
5		11.52%	8.93%	9.22%	6.93%	5.71%
6		5.76%	8.92%	7.37%	6.23%	5.29%
7			8.93%	6.55%	5.90%	4.89%
8			4.46%	6.55%	5.90%	4.52%
9				6.56%	5.91%	4.46%
10				6.55%	5.90%	4.46%
11				3.28%	5.91%	4.46%
12					5.90%	4.46%
13					5.91%	4.46%
14					5.90%	4.46%
15					5.91%	4.46%
16					2.95%	4.46%
17						4.46%
18						4.46%
19						4.46%
20						4.46%
21						2.23%

## LECTURE 12

Escobar Supplements has failed to meet FDA requirements and will need to  
 There are two mutually exclusive options under consideration by the compa  
 on track with meeting FDA requirements, but will take the company in two \  
 has the company making all of the necessary corrections to their manufactu  
 in order to continue producing their flu vaccine. Project 2 has the company  
 drugs that fight cancer. Each project has an economic service life of 1 year \  
 and the net-year-end revenue for each project are given in the following tab

Initial Cost	Project 1		Project 2	
	Probability	Revenue	Probability	Revenue
Net Revenue given in PW	0.35	\$40,000	0.25	\$36,000
	0.40	\$50,000	0.45	\$44,000
	0.25	\$56,000	0.30	\$50,000

Assuming both projects are statistically independent of each other,

- a. Calculate the expected value for each project. [4 points]

Option 1			Probability $p_j$
Probability $p_j$	Revenue $x_j$	$p_j x_j$	
0.35	\$40,000	\$14,000	0.25
0.4	\$50,000	\$20,000	0.45
0.25	\$56,000	\$14,000	0.3
First Cost:		\$44,000	
<b>E[NPW]</b>		<b>\$4,000</b>	

- b. Calculate the variance for each project. [4 points]

Option 1			Option 1 E[NPW]	$(x_j - \mu)^2$
Probability $p_j$	Revenue	$x_j$		
0.35	\$40,000	-\$4,000	\$4,000	\$64,000,000
0.4	\$50,000	\$6,000	\$4,000	\$4,000,000
0.25	\$56,000	\$12,000	\$4,000	\$64,000,000
			<b>Var[NPW]</b>	

Probability	Revenue		Option 2 E[NPW]	
$p_j$		$x_j$	$\mu$	$(x_j - \mu)^2$
0.25	\$36,000	-\$4,000	\$3,800	\$60,840,000
0.45	\$44,000	\$4,000	\$3,800	\$40,000
0.3	\$50,000	\$10,000	\$3,800	\$38,440,000
				<b>Var[NPW]</b>

c. Which project should be chosen? Why? [1 + 1 points]

Select Option 1

Expected value for Option 1 is larger than expected value for Option 2.

However, it is worth noting that variance for Option 2 less than variance for Option 1

It need to change the way it conducts its business.  
 the company which will get the company back  
 ny in two very different directions. Project 1  
 manufacturing processes to meet FDA requirements  
 company completely rerouting their direction by producing  
 of 1 year with no salvage value. The initial cost  
 following table:

<b>Option 2</b>	
<b>Revenue</b>	
<b><math>x_j</math></b>	<b><math>p_j x_j</math></b>
\$36,000	\$9,000
\$44,000	\$19,800
\$50,000	\$15,000
First Cost:	\$40,000
<b>E[NPW]</b>	<b>\$3,800</b>

<b><math>(x_j - \mu)^2(p_j)</math></b>
\$22,400,000
\$1,600,000
\$16,000,000
<b>\$40,000,000</b>

$(x_j - \mu)^2(p_j)$
\$15,210,000
\$18,000
\$11,532,000
<b>\$26,760,000</b>

for Option 1.

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way it conducts its business. There are two mutually exclusive options under consideration



1 by the company which will get the company back on track with meeting FDA requireme



nts, but will take the company in two very different directions. Project 1 has the company



making all of the necessary corrections to their manufacturing processes to meet FDA re





requirements in order to continue producing their flu vaccine. Project 2 has the company c



completely rerouting their direction by producing drugs that fight cancer. Each project has



an economic service life of 1 year with no salvage value. The initial cost and the net-yea



r-end revenue for each project are given in the following table:





**a. List four financial statements? [1+1+1+1 points]**

- a. Income Statement
- b. Balance Sheet
- c. Cash Flow Statement
- d. Statement of Retained Earnings or Stockholder's Equity

**b. What is the goal of T-accounts? [1 points]**

- a. The goal of T accounts is for debit entries to equal credit entries.

**c. What is the fundamental equation of accounting? [1 points]**

- a.  $\text{Assets} = \text{Liabilities} + \text{Owners' Equity}$

**d. Define what an Asset is and differentiate between the two different types of**

- a. Any item of economic value that is owned by an individual or corporation and could
- b. Current Asset: Assets that will, in the normal course of business, be converted into
- c. Non-current Asset: An Asset which is not easily convertible to cash or not expected

**e. With respect to time, what is the primary difference between the income st**

- a. The income statement always represent a period of time, unlike a single point of time

**f. What is a credit? [1 points]**

- a. A contractual agreement in which a borrower receives something of value now and i

**g. Define what a liability is and differentiate between the two different types of**

- a. A financial obligation incurred by an individual or an organization and therefore need
- b. Current Liability: Liabilities that must be paid off within the next twelve months.
- c. Non-current Liability: Any Liability (or Debt) that is not due to be paid within the ne

**h. List 3 limitations of financial ratios? [1+1+1 points]**

- a. Ratio analysis is useful, but analysts should aware of ever-changing market conditio
- b. It is difficult to generalize about whether a particular ratio is good or bad.
- c. Ratio analysis based on any one year may not represent the true business condition

**i. What is a debit? [1 points]**

- a. An accounting entry which results in either an increase in assets or a decrease in lia

**ent types of assets? [1+ 1 + 1 points]**

and could be converted to cash.  
verted into cash or used up within the next twelve months.  
t expected to become cash within the next twelve months.

**income statement and the balance sheet? [1 points]**

point of time that is represented by the balance sheet.

e now and agrees to repay later.

**ent types of liabilities? [1+ 1 + 1 points]**

efore needs to be paid off.

thin the next twelve months.

ns and make adjustments necessary.

s condition – a more effective indication is looking at ratios over a time range (say, 5 years)

crease in liabilities or net worth.