EMGT – 6225

ECONOMIC DECISION MAKING (SEC - 06)

TEAM NO. 05

CASE STUDY REPORT

Submitted to

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Submitted by

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Abstract

The team's goal is to dive deep into analyzing how we can bring a new product to market successfully. We consider material cost, investment in machines, and the number of products we make over nine years. We also discussed about workers pay, cover other costs, and taxes. To check the results, we need to figure out how much we should sell each product for. We looked at different alternatives of making our products, like working overtime instead of adding extra shifts, to meet demand without wasting resources considering the finances and taxes to be paid by the company.

Analysis

Question 1) What average selling price of the finished product would be required to yield a 20%. After-Tax rate of return (After-Tax IRR)?

Answer: Using Excel for analysis reveals that to attain a 20% After-Tax IRR, the end product's average selling price needs to be $10.5109791.

Costs, machine stats			Manufacturing operation			Labour cost		Other info		
Raw material/unit	$8.00		Normal operation (hours/shift.	8		Regular cost/h	50	After tax MARR	20%	
Machine cost	$1,500,000.00		Days/week	5		Overtime cost/l	65	Tax rate	35%	
MACRS	7 year		weeks/year	50				Maintainance cost	12%	of raw material
SV	$0.00		days/year	250				Overhead cost	2%	of raw material
Capacity units/hour	$175.00		Max overtime hours/week	8				planning horizon	9.00	years
									Max units	
								1 shift	350000	
								overtime	70000	
			Selling price/unit	10.5109791				1 shift + overtime	420000	
								2 shifts	700000	

EOY	ReqVol	Machine cost	Raw material cost	Labour cost - 1 shift	1 shift + overtime	2 shifts	Total labour cost	Maintainance	Overhead	Depriciation %	Dep amt	Sale	BTCF	Taxable income	Tax	ATCF
0		$1,500,000.00					$0.00						-$1,500,000.00	-$1,500,000.00		-$1,500,000.00
1	195000	$0.00	$1,560,000.00	$55,714.29	$0.00	$0.00	$55,714.29	$187,200.00	$31,200.00	14.29%	$214,350.00	$2,049,640.92	$215,526.63	$1,176.63	$411.82	$215,114.81
2	275000	$0.00	$2,200,000.00	$78,571.43	$0.00	$0.00	$78,571.43	$264,000.00	$44,000.00	24.49%	$367,350.00	$2,890,519.24	$303,947.81	-$63,402.19	-$22,190.77	$326,138.58
3	385000	$0.00	$3,080,000.00	$0.00	$113,000.00	$0.00	$113,000.00	$369,600.00	$61,600.00	17.49%	$262,350.00	$4,046,726.94	$422,526.94	$160,176.94	$56,061.93	$366,465.01
4	550000	$0.00	$4,400,000.00	$0.00	$0.00	$157,142.86	$157,142.86	$528,000.00	$88,000.00	12.49%	$187,350.00	$5,781,038.48	$607,895.62	$420,545.62	$147,190.97	$460,704.66
5	625000	$0.00	$5,000,000.00	$0.00	$0.00	$178,571.43	$178,571.43	$600,000.00	$100,000.00	8.93%	$133,950.00	$6,569,361.91	$690,790.48	$556,840.48	$194,894.17	$495,896.31
6	695000	$0.00	$5,560,000.00	$0.00	$0.00	$198,571.43	$198,571.43	$667,200.00	$111,200.00	8.92%	$133,800.00	$7,305,130.44	$768,159.01	$634,359.01	$222,025.66	$546,133.36
7	630000	$0.00	$5,040,000.00	$0.00	$0.00	$180,000.00	$180,000.00	$604,800.00	$100,800.00	8.93%	$133,950.00	$6,621,916.80	$696,316.80	$562,366.80	$196,828.38	$499,488.42
8	550000	$0.00	$4,400,000.00	$0.00	$0.00	$157,142.86	$157,142.86	$528,000.00	$88,000.00	4.46%	$66,900.00	$5,781,038.48	$607,895.62	$540,995.62	$189,348.47	$418,547.16
9	295000	$0.00	$2,360,000.00	$84,285.71	$0.00	$0.00	$84,285.71	$283,200.00	$47,200.00	0	$0.00	$3,100,738.82	$326,053.11	$326,053.11	$114,118.59	$211,934.52
										Book value after 9yrs	0				ATPW	0.00

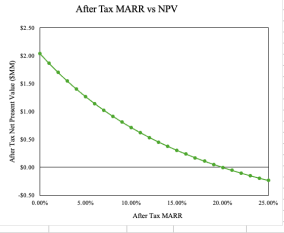
Question 2) How does the variation in After-Tax MARR impact After-Tax Net Present Value (ATNPV)? (To answer this question, calculate After-Tax Net Present Value for different values of After-Tax MARR (ATMARR) ranging from 0% to 25% (considering raw material cost per unit is $8 and selling price is $10.5 per unit) and plot After-Tax Net Present Value vs. MARR). Use “Data Table” in Excel.

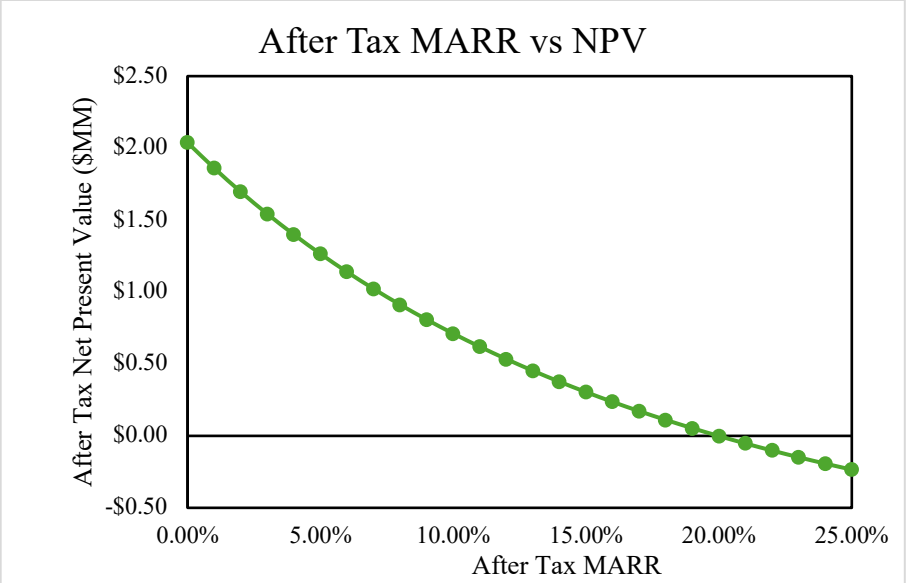
Answer: The chart below illustrates a negative correlation between the After-Tax Net Present Value (ATNPV) and the After-Tax MARR, showing that as the After-Tax MARR rises, the ATNPV decreases.

Costs, machine stats			Manufacturing operation		Labour cost		other info		
Raw material/unit	$8.00		Normal operation (hours/shift/day)	8	Regular cost/hour	50	After tax MARR	0%	
Machine cost	$1,500,000.00		Days/week	5	Overtime cost/hour	65	Tax rate	35%	
MACRS	7 year		weeks/year	50			Maintainance cost	12%	of raw material
SV	$0.00		days/year	250			Overhead cost	2%	of raw material
Capacity units/hour	$175.00		Max overtime hours/week	8			planning horizon	9.00	years
P1	0								
								Max units	
							1 shift	350000	
							overtime	70000	
			Selling price/unit	10.51			1 shift + overtime	420000	
							2 shifts	700000	

EOY	ReqVol	Machine cost	Raw material cost	Labour cost - 1 shift	1 shift + overtime	2 shifts	Total labour cost	Maintainance	Overhead	Depreciation %	Dep amt	Sale	BTCF	Taxable income	Tax	ATCF
0		$1,500,000.00					$0.00						-$1,500,000.00			-$1,500,000.00
1	195000	$0.00	$1,560,000.00	$55,714.29	$0.00	$0.00	$55,714.29	$187,200.00	$31,200.00	14.29%	$214,350.00	$2,049,450.00	$215,335.71	$985.71	$345.00	$214,990.71
2	275000	$0.00	$2,200,000.00	$78,571.43	$0.00	$0.00	$78,571.43	$264,000.00	$44,000.00	24.49%	$367,350.00	$2,890,250.00	$303,678.57	-$63,671.43	-$22,285.00	$325,963.57
3	385000	$0.00	$3,080,000.00	$0.00	$113,000.00	$0.00	$113,000.00	$369,600.00	$61,600.00	17.49%	$262,350.00	$4,046,350.00	$422,150.00	$159,800.00	$55,930.00	$366,220.00
4	550000	$0.00	$4,400,000.00	$0.00	$0.00	$157,142.86	$157,142.86	$528,000.00	$88,000.00	12.49%	$187,350.00	$5,780,500.00	$607,357.14	$420,007.14	$147,002.50	$460,354.64
5	625000	$0.00	$5,000,000.00	$0.00	$0.00	$178,571.43	$178,571.43	$600,000.00	$100,000.00	8.93%	$133,950.00	$6,568,750.00	$690,178.57	$556,228.57	$194,680.00	$495,498.57
6	695000	$0.00	$5,560,000.00	$0.00	$0.00	$198,571.43	$198,571.43	$667,200.00	$111,200.00	8.92%	$133,800.00	$7,304,450.00	$767,478.57	$633,678.57	$221,787.50	$545,691.07
7	630000	$0.00	$5,040,000.00	$0.00	$0.00	$180,000.00	$180,000.00	$604,800.00	$100,800.00	8.93%	$133,950.00	$6,621,300.00	$695,700.00	$561,750.00	$196,612.50	$499,087.50
8	550000	$0.00	$4,400,000.00	$0.00	$0.00	$157,142.86	$157,142.86	$528,000.00	$88,000.00	4.46%	$66,900.00	$5,780,500.00	$607,357.14	$540,457.14	$189,160.00	$418,197.14
9	295000	$0.00	$2,360,000.00	$84,285.71	$0.00	$0.00	$84,285.71	$283,200.00	$47,200.00	0	$0.00	$3,100,450.00	$325,764.29	$325,764.29	$114,017.50	$211,746.79
										Book value after 9yrs	0				ATPW	$2,037,750.00

MARR	ATPW
	$2,037,750.00
0.00%	$2,037,750.00
1.00%	$1,861,074.23
2.00%	$1,696,414.59
3.00%	$1,542,790.97
4.00%	$1,399,314.62
5.00%	$1,265,178.64
6.00%	$1,139,649.60
7.00%	$1,022,060.08
8.00%	$911,802.07
9.00%	$808,321.00
10.00%	$711,110.58
11.00%	$619,706.04
12.00%	$533,689.96
13.00%	$452,668.55
14.00%	$376,288.25
15.00%	$304,222.78
16.00%	$236,172.39
17.00%	$171,861.46
18.00%	$111,036.32
19.00%	$53,463.27
20.00%	-$1,073.17
21.00%	-$52,771.86
22.00%	-$101,816.49
23.00%	-$148,376.90
24.00%	-$192,610.22
25.00%	-$234,661.98





Question 3)

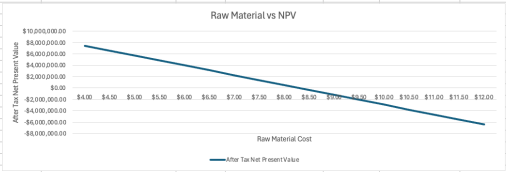
a. Is the After-Tax Net Present Value (ATNPV) more sensitive to changes in raw material cost or changes in selling price? To answer this question, follow the steps below: a. Considering selling price per unit as $10.50 and After-Tax MARR as 12%, calculate After-Tax Net Present Value (ATNPV) for raw material cost ranging from $4/unit to $12/unit. Then , plot After-Tax Net Present Value vs. raw material cost. Use "Data Table" in Excel.

Answer: Considering selling price per unit as $10.5 and After-Tax MARR as 12%, the After-Tax Net Present Value (ATNPV) for raw material cost ranging from $4/unit to $12/unit is:

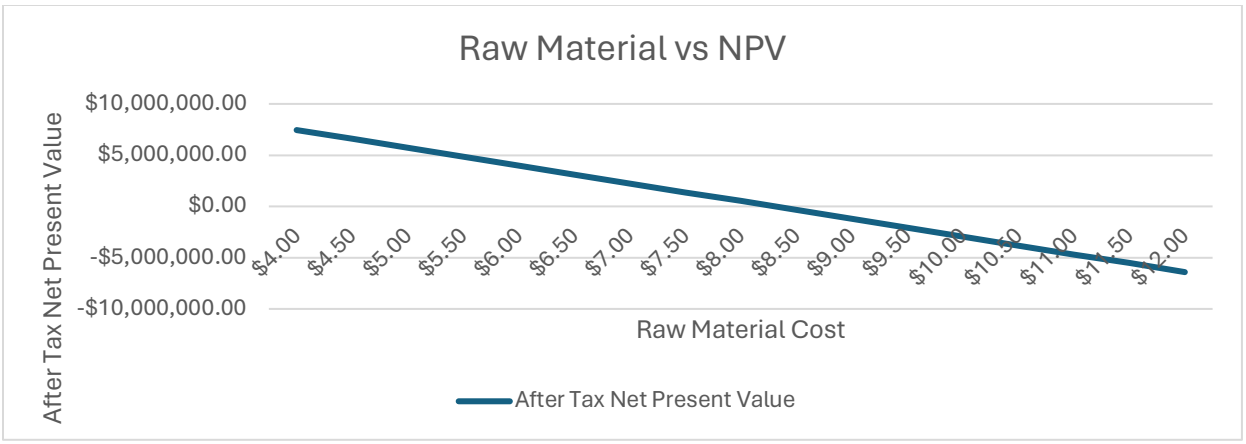
Costs, machine stats			Manufacturing operation		Labour cost		other info		
Raw material/unit	$0.00		Normal operation (hours/shift/day)	8	Regular cost/hour	50	After tax MARR	12%	
Machine cost	$1,500,000.00		Days/week	5	Overtime cost/hour	65	Tax rate	35%	
MACRS	7 year		weeks/year	50			Maintainance cost	12%	of raw material
SV	$0.00		days/year	250			Overhead cost	2%	of raw material
Capacity units/hour	$175.00		Max overtime hours/week	8			planning horizon	9.00	years
P1	0								
								Max units	
							1 shift	350000	
							overtime	70000	
			Selling price/unit	10.5			1 shift + overtime	420000	
							2 shifts	700000	

EOY	Req Vol	Machine cost	Raw material cost	Labour cost - 1 shift	1 shift + overtime	2 shifts	total labour cost	Maintainanc e	overhead	Depreciatio n %	Dep amt	Sale	BTCF	Taxable income	Tax	ATCF
0		$1,500,000.00					$0.00						-$1,500,000.00			-$1,500,000.00
1	195000	$0.00	$0.00	$55,714.29	$0.00	$0.00	$55,714.29	$0.00	$0.00	14.29%	$214,350.00	$2,047,500.00	$1,991,785.71	$1,777,435.71	$622,102.50	$1,369,683.21
2	275000	$0.00	$0.00	$78,571.43	$0.00	$0.00	$78,571.43	$0.00	$0.00	24.49%	$367,350.00	$2,887,500.00	$2,808,928.57	$2,441,578.57	$854,552.50	$1,954,376.07
3	385000	$0.00	$0.00	$0.00	$113,000.00	$0.00	$113,000.00	$0.00	$0.00	17.49%	$262,350.00	$4,042,500.00	$3,929,500.00	$3,667,150.00	$1,283,502.50	$2,645,997.50
4	550000	$0.00	$0.00	$0.00	$0.00	$157,142.86	$157,142.86	$0.00	$0.00	12.49%	$187,350.00	$5,775,000.00	$5,617,857.14	$5,430,507.14	$1,900,677.50	$3,717,179.64
5	625000	$0.00	$0.00	$0.00	$0.00	$178,571.43	$178,571.43	$0.00	$0.00	8.93%	$133,950.00	$6,562,500.00	$6,383,928.57	$6,249,978.57	$2,187,492.50	$4,196,436.07
6	695000	$0.00	$0.00	$0.00	$0.00	$198,571.43	$198,571.43	$0.00	$0.00	8.92%	$133,800.00	$7,297,500.00	$7,098,928.57	$6,965,128.57	$2,437,795.00	$4,661,133.57
7	630000	$0.00	$0.00	$0.00	$0.00	$180,000.00	$180,000.00	$0.00	$0.00	8.93%	$133,950.00	$6,615,000.00	$6,435,000.00	$6,301,050.00	$2,205,367.50	$4,229,632.50
8	550000	$0.00	$0.00	$0.00	$0.00	$157,142.86	$157,142.86	$0.00	$0.00	4.46%	$66,900.00	$5,775,000.00	$5,617,857.14	$5,550,957.14	$1,942,835.00	$3,675,022.14
9	295000	$0.00	$0.00	$84,285.71	$0.00	$0.00	$84,285.71	$0.00	$0.00	0	$0.00	$3,097,500.00	$3,013,214.29	$3,013,214.29	$1,054,625.00	$1,958,589.29
										Book value at	0				ATPW	$14,373,135.23

Raw Material Cost	ATPW
	$14,373,135.23
$4.00	$7,445,816.85
$4.50	$6,579,902.05
$5.00	$5,713,987.26
$5.50	$4,848,072.46
$6.00	$3,982,157.66
$6.50	$3,116,242.86
$7.00	$2,250,328.07
$7.50	$1,384,413.27
$8.00	$518,498.47
$8.50	-$347,416.33
$9.00	-$1,213,331.12
$9.50	-$2,079,245.92
$10.00	-$2,945,160.72
$10.50	-$3,811,075.52
$11.00	-$4,676,990.31
$11.50	-$5,542,905.11
$12.00	-$6,408,819.91
Slope	-$1,731,829.80



	-$9,355,968.52
	-$8,596,394.13
	-$7,836,819.75
	-$7,077,245.37
	-$6,317,670.98
	-$5,558,096.60
	-$4,798,522.22
	-$4,038,947.83
	-$3,279,373.45
	-$2,519,799.06
	-$1,760,224.68
	-$1,000,650.30
	-$241,075.91
	$518,498.47
	$1,278,072.86
	$2,037,647.24
	$2,797,221.62



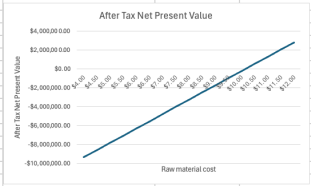
b. Considering raw material cost per unit as $8 and After-Tax MARR as 12%, calculate After-Tax Net Present Value (ATNPV) for selling price ranging from $4/unit to $12/unit. Then, plot After-Tax Net Present Value vs. selling price. Use "Data Table" in Excel.

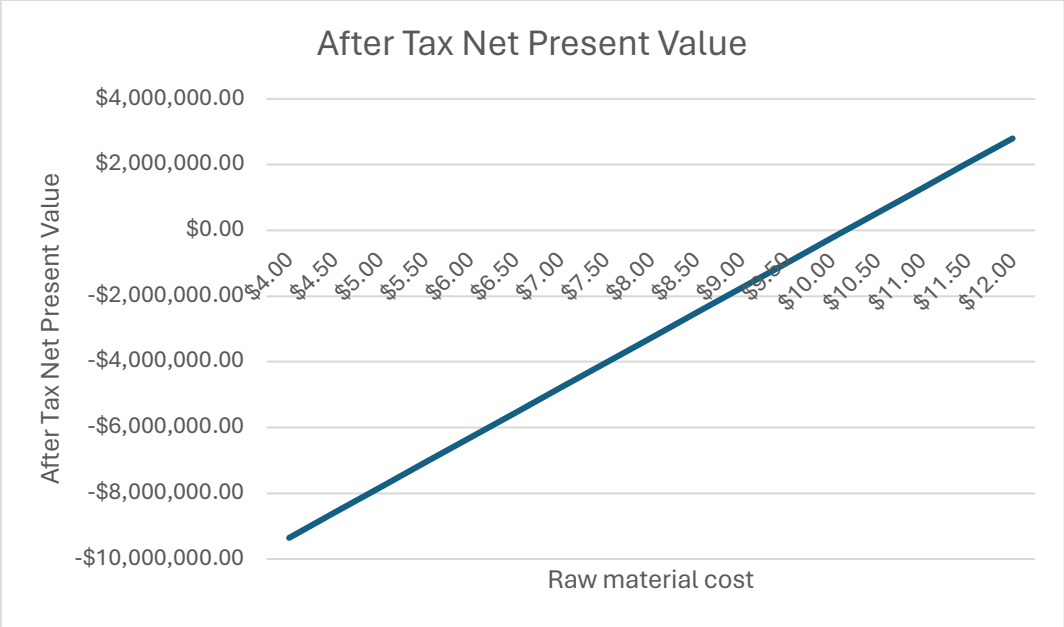
Answer: Considering selling price per unit as $8 and After-Tax MARR as 12%, the After-Tax Net Present Value (ATNPV) for raw material cost ranging from $4/unit to $12/unit is:

Costs, machine stats			Manufacturing operation		Labour cost		other info									
Raw material/unit	$8.00		Normal operation (hours/shift/day)	8	Regular cost/hour	50	After tax MARR	12%								
Machine cost	$1,500,000.00		Days/week	5	Overtime cost/hour	65	Tax rate	35%								
MACRS	7 year		weeks/year	50			Maintainance cost	12%	of raw material							
SV	$0.00		days/year	250			Overhead cost	2%	of raw material							
Capacity units/hour	$175.00		Max overtime hours/week	8			planning horizon	9.00	years							
P2	0															
								Max units								
							1 shift	350000								
							overtime	70000								
			Selling price/unit	0			1 shift + overtime	420000								
							2 shifts	700000								

EOY	Req Vol	Machine cost	Raw material cost	Labour cost - 1 shift	1 shift + overtime	2 shifts	total labour cost	Maintainance	overhead	Depreciation %	Dep amt	Sale	BTCF	Taxable income	Tax	ATCF
0		$1,500,000.00					$0.00						-$1,500,000.00			-$1,500,000.00
1	195000	$0.00	$1,560,000.00	$55,714.29	$0.00	$0.00	$55,714.29	$187,200.00	$31,200.00	14.29%	$214,350.00	$0.00	-$1,834,114.29	-$2,048,464.29	-$716,962.50	-$1,117,151.79
2	275000	$0.00	$2,200,000.00	$78,571.43	$0.00	$0.00	$78,571.43	$264,000.00	$44,000.00	24.49%	$367,350.00	$0.00	-$2,586,571.43	-$2,953,921.43	-$1,033,872.50	-$1,552,698.93
3	385000	$0.00	$3,080,000.00	$0.00	$113,000.00	$0.00	$113,000.00	$369,600.00	$61,600.00	17.49%	$262,350.00	$0.00	-$3,624,200.00	-$3,886,550.00	-$1,360,292.50	-$2,263,907.50
4	550000	$0.00	$4,400,000.00	$0.00	$0.00	$157,142.86	$157,142.86	$528,000.00	$88,000.00	12.49%	$187,350.00	$0.00	-$5,173,142.86	-$5,360,492.86	-$1,876,172.50	-$3,296,970.36
5	625000	$0.00	$5,000,000.00	$0.00	$0.00	$178,571.43	$178,571.43	$600,000.00	$100,000.00	8.93%	$133,950.00	$0.00	-$5,878,571.43	-$6,012,521.43	-$2,104,382.50	-$3,774,188.93
6	695000	$0.00	$5,560,000.00	$0.00	$0.00	$198,571.43	$198,571.43	$667,200.00	$111,200.00	8.92%	$133,800.00	$0.00	-$6,536,971.43	-$6,670,771.43	-$2,334,770.00	-$4,202,201.43
7	630000	$0.00	$5,040,000.00	$0.00	$0.00	$180,000.00	$180,000.00	$604,800.00	$100,800.00	8.93%	$133,950.00	$0.00	-$5,925,600.00	-$6,059,550.00	-$2,120,842.50	-$3,804,757.50
8	550000	$0.00	$4,400,000.00	$0.00	$0.00	$157,142.86	$157,142.86	$528,000.00	$88,000.00	4.46%	$66,900.00	$0.00	-$5,173,142.86	-$5,240,042.86	-$1,834,015.00	-$3,339,127.86
9	295000	$0.00	$2,360,000.00	$84,285.71	$0.00	$0.00	$84,285.71	$283,200.00	$47,200.00	0	$0.00	$0.00	-$2,774,685.71	-$2,774,685.71	-$971,140.00	-$1,803,545.71
										Book value after 9yrs	0				ATPW	-$15,432,563.59

Selling Price	ATPW
	-$15,432,563.59
$4.00	-$9,355,968.52
$4.50	-$8,596,394.13
$5.00	-$7,836,819.75
$5.50	-$7,077,245.37
$6.00	-$6,317,670.98
$6.50	-$5,558,096.60
$7.00	-$4,798,522.22
$7.50	-$4,038,947.83
$8.00	-$3,279,373.45
$8.50	-$2,519,799.06
$9.00	-$1,760,224.68
$9.50	-$1,000,650.30
$10.00	-$241,075.91
$10.50	$518,498.47
$11.00	$1,278,072.86
$11.50	$2,037,647.24
$12.00	$2,797,221.62
Sope	$1,519,148.77





c. Find the slope of line in both plots (of a and b) and compare the absolute value of the slopes.

Answer: Comparing the absolute value of the slopes and the plot for slope is as follows:

Parameter	Absolute Value of Slope
Raw Material Cost (3a)	-1731829.595
Selling price (3b)	1519148.768
Max Value	1519148.768

Question 4) If variability of selling price per unit (consider current selling price is $10.50 per unit) may range from -15% to +15% (i.e. selling price per unit cannot decrease by less than 15% of the current selling price and cannot increase by more that 15% of the current selling price) and variability of raw material cost per unit (consider raw material cost per unit as $8) may range from -15% to +15%, find After-Tax Net Present Value (ATNPV) for simultaneous change in selling price and raw material cost to fill the table below (consider After-Tax MARR is 12%): Use "Data Table" in Excel.

Answer: After-tax net Present Value (ATNPV) for simultaneous change in selling price and raw material is as follows:

Costs, machine stats		Manufacturing operation		Labour cost		other info		
Raw material/unit	8.00	Normal operation (hours/shift	8	Regular cost/hour	50	After tax MARR	12%	
Machine cost	1500000	Days/week	5	Overtime cost/hour	65	Tax rate	35%	
MACRS	7 year	weeks/year	50			Maintainance cost	12%	of raw material
SV	0	days/year	250			Overhead cost	2%	of raw material
Capacity units/hour	175	Max overtime hours/week	8			planning horizon	9.00	years
P1	0%							
P2	0%						Max units	
						1 shift	350000	
						overtime	70000	
		Selling price/unit	10.5			1 shift + overtime	420000	
						2 shifts	700000	

EOY	ReqVol	Machine cost	Rawmaterial cost	Labour cost - 1 shift	1 shift + overtime	2 shifts	total labour cost	Maintainance	overhead	Depreciation %	Dep amt	Sale	BTCF	Taxable income	Tax	ATCF
0		$1,500,000.00					$0.00						-$1,500,000.00			-$1,500,000.00
1	195000	$0.00	$1,560,000.00	$55,714.29	$0.00	$0.00	$55,714.29	$187,200.00	$31,200.00	14.29%	$214,350.00	$2,047,500.00	$213,385.71	-$964.29	-$337.50	$213,723.21
2	275000	$0.00	$2,200,000.00	$78,571.43	$0.00	$0.00	$78,571.43	$264,000.00	$44,000.00	24.49%	$367,350.00	$2,887,500.00	$300,928.57	-$66,421.43	-$23,247.50	$324,176.07
3	385000	$0.00	$3,080,000.00	$0.00	$113,000.00	$0.00	$113,000.00	$369,600.00	$61,600.00	17.49%	$262,350.00	$4,042,500.00	$418,300.00	$155,950.00	$54,582.50	$363,717.50
4	550000	$0.00	$4,400,000.00	$0.00	$0.00	$157,142.86	$157,142.86	$528,000.00	$88,000.00	12.49%	$187,350.00	$5,775,000.00	$601,857.14	$414,507.14	$145,077.50	$456,779.64
5	625000	$0.00	$5,000,000.00	$0.00	$0.00	$178,571.43	$178,571.43	$600,000.00	$100,000.00	8.93%	$133,950.00	$6,562,500.00	$683,928.57	$549,978.57	$192,492.50	$491,436.07
6	695000	$0.00	$5,560,000.00	$0.00	$0.00	$198,571.43	$198,571.43	$667,200.00	$111,200.00	8.92%	$133,800.00	$7,297,500.00	$760,528.57	$626,728.57	$219,355.00	$541,173.57
7	630000	$0.00	$5,040,000.00	$0.00	$0.00	$180,000.00	$180,000.00	$604,800.00	$100,800.00	8.93%	$133,950.00	$6,615,000.00	$689,400.00	$555,450.00	$194,407.50	$494,992.50
8	550000	$0.00	$4,400,000.00	$0.00	$0.00	$157,142.86	$157,142.86	$528,000.00	$88,000.00	4.46%	$66,900.00	$5,775,000.00	$601,857.14	$534,957.14	$187,235.00	$414,622.14
9	295000	$0.00	$2,360,000.00	$84,285.71	$0.00	$0.00	$84,285.71	$283,200.00	$47,200.00	0	$0.00	$3,097,500.00	$322,814.29	$322,814.29	$112,985.00	$209,829.29
										Bookvalue after 9yrs	0				ATPW	$518,498.47

		Selling Price						
ATNPV		-15%	-10%	-5%	0%	5%	10%	15%
	$518,498.47	-15%	-10%	-5%	0%	5%	10%	15%
-15%	-15%	204034.6766	1001587.78	1799140.883	2596693.986	3394247.09	4191800.192	4989353.29
-10%	-10%	-488697.1615	308855.9415	1106409.045	1903962.148	2701515.25	3499068.354	4296621.46
-5%	-5%	-1181429	-383875.8965	413677.2065	1211230.309	2008783.41	2806336.515	3603889.62
0%	0%	-1874160.838	-1076607.735	-279054.6315	518498.4715	1316051.57	2113604.677	2911157.78
5%	5%	-2566892.676	-1769339.573	-971786.4696	-174233.3666	623319.736	1420872.839	2218425.94
10%	10%	-3259624.514	-2462071.411	-1664518.308	-866965.2046	-69412.102	728141.0014	1525694.1
15%	15%	-3952356.352	-3154803.249	-2357250.146	-1559697.043	-762143.94	35409.16335	832962.266

Raw Material Cost

Question 5) If required Annual production volume is Y units, raw material cost per unit is $8, selling price is $10.5 per unit and After-Tax MARR is 12%, what is the value of Y at which After-Tax Net Present Value (ATNPV) is 0 ?

Answer: Excel's Goal Seek feature establishes that producing 301457.55 units annually (Y) results in an After-Tax Net Present Value (ATNPV) of zero.

Costs, machine stats		Manufacturing operation		Labour cost		other info		
Raw material/unit	8.00	Normal operation (hours/shift/day)	8	Regular cost/hour	50	After tax MARR	12%	
Machine cost	1500000	Days/week	5	Overtime cost/hour	65	Tax rate	35%	
MACRS	7 year	weeks/year	50			Maintainance cost	12%	of raw material
SV	0	days/year	250			Overhead cost	2%	of raw material
Capacity units/hour	175	Max overtime hours/week	8			planning horizon	9.00	years
							Max units	
						1 shift	350000	
						overtime	70000	
		Selling price/unit	10.5			1 shift + overtime	420000	
						2 shifts	700000	

Production Volume	301457.55

EOY	ReqVol	Machine cost	Rawmaterial cost	Labour cost - 1 shift	1 shift + overtime	2 shifts	total labour cost	Maintainance	overhead	Depreciation %	Dep amt	Sale	BTCF	Taxable income	Tax	ATCF
0		$1,500,000.00					$0.00						-$1,500,000.00			-$1,500,000.00
1	301457.5	$0.00	$2,411,660.36	$86,130.73	$0.00	$0.00	$86,130.73	$289,399.24	$48,233.21	14.29%	$214,350.00	$3,165,304.23	$329,880.69	$115,530.69	$40,435.74	$289,444.95
2	301457.5	$0.00	$2,411,660.36	$86,130.73	$0.00	$0.00	$86,130.73	$289,399.24	$48,233.21	24.49%	$367,350.00	$3,165,304.23	$329,880.69	-$37,469.31	-$13,114.26	$342,994.95
3	301457.5	$0.00	$2,411,660.36	$86,130.73	$0.00	$0.00	$86,130.73	$289,399.24	$48,233.21	17.49%	$262,350.00	$3,165,304.23	$329,880.69	$67,530.69	$23,635.74	$306,244.95
4	301457.5	$0.00	$2,411,660.36	$86,130.73	$0.00	$0.00	$86,130.73	$289,399.24	$48,233.21	12.49%	$187,350.00	$3,165,304.23	$329,880.69	$142,530.69	$49,885.74	$279,994.95
5	301457.5	$0.00	$2,411,660.36	$86,130.73	$0.00	$0.00	$86,130.73	$289,399.24	$48,233.21	8.93%	$133,950.00	$3,165,304.23	$329,880.69	$195,930.69	$68,575.74	$261,304.95
6	301457.5	$0.00	$2,411,660.36	$86,130.73	$0.00	$0.00	$86,130.73	$289,399.24	$48,233.21	8.92%	$133,800.00	$3,165,304.23	$329,880.69	$196,080.69	$68,628.24	$261,252.45
7	301457.5	$0.00	$2,411,660.36	$86,130.73	$0.00	$0.00	$86,130.73	$289,399.24	$48,233.21	8.93%	$133,950.00	$3,165,304.23	$329,880.69	$195,930.69	$68,575.74	$261,304.95
8	301457.5	$0.00	$2,411,660.36	$86,130.73	$0.00	$0.00	$86,130.73	$289,399.24	$48,233.21	4.46%	$66,900.00	$3,165,304.23	$329,880.69	$262,980.69	$92,043.24	$237,837.45
9	301457.5	$0.00	$2,411,660.36	$86,130.73	$0.00	$0.00	$86,130.73	$289,399.24	$48,233.21	0	$0.00	$3,165,304.23	$329,880.69	$329,880.69	$115,458.24	$214,422.45
										Bookvalue after 9yrs	0				ATPW	$0.00
															Sales Price	10.5
															Rawmaterial cost	8
															Labor hours	$1,722.61