QUESTION 1.

1. How much is the firm's net working capital and what is the debt ratio?

Net Working Capital= current assets- current liabilities
→Net working capital = 138000 - 75000 =63000
Debt ratio = (total debt)/ (total assets) →Debt Ratio = 150000/ (138000) = 1.087

b. Complete a Statement of Cash Flows for the period. Interpret your results.

T.P. Jarmon Statement of Cashflows
Operating activities:
Net income $42,900
Depreciation expense 30,000
Profits before depreciation 72,900
Decrease in accounts receivable 9,000
Increase in inventories (33,000)
Prepaid rent 100
Increase in accounts payable 9,000
Accrual (1,000)
Notes Payable (2,000)
Market securities (200)
Cash flows from operations $54,800
Investment activities:
Increase in net fixed assets $(16,000)
Financing activities**:**
Increase in common stock $11,100
Dividends (31,800)
Total financing cash flows $ (20,700)
Increase in cash $18,100
Beginning cash 15,000
Ending Cash $33,100

c. Compute the changes in the balance sheets from 2014 to 2015. What do you learn about T.P. Jarmon from these computations? How do these numbers relate to the statement of cash flows?

Balance Sheet changes from 2014 to 2015:

ASSETS			
Cash	**$1,000**		**Decrease**
Marketable Securities	**$200**		**Increase**
Accounts Receivable	**$9,000**		**Decrease**
Inventory	**$33,000**		**Increase**
Prepaid Rent	**$100**		**Decrease**
Total Current Assets	**$23,100**		**Increase**
Net Plant And Equip.	**$16,000**		**Decrease**
Total Assets	**$7,100**		**Increase**
Liabilities And Equity			
Accounts Payable	**$9,000**		**Increase**
Accruals	**$1,000**		**Decrease**
Notes Payable	**$2,000**		**Decrease**
Total Current Liabilities	**$6,000**		**Increase**
Long-Term Debt	**$10,000**		**Decrease**
Common S.E.	**$11,100**		**Increase**
Total Liabilities And Equity	**$7,100**		
Increase			

*The outflows of cash were for accounts receivable, note payables, accruals and notes payable showing that the company decreased the outstanding debt it had. *Dividends were paid showing that the company had a profit.

QUESTION 2

Its WACC is 10%, and the projects' after-tax cash flows (in millions of dollars) would be as follows.

	Project A				Project B			
Time	*Expected CF*	*Cum. CF*	*Disc. CF*	*Disc. Cum. CF*	*Expected CF*	*Cum. CF*	*Disc. CF*	*Disc. Cum. CF*
0	30	30	30	30	30	30	30	30
1	5	25	4.55	25.45	20	10	18.18	11.82
2	10	15	8.26	17.19	10	0	8.26	3.56
3	15	0	11.27	5.92	8	-8	6.01	-2.45
4	20	-20	13.66	-7.74	6	-14	4.1	-6.55

NPV

$$NPV = \sum_{t=0}^{n} \frac{CF_t}{(1+r)^t}$$

Project A

years	A	PVF@10	PVF@10	
0	-30	1	-30	
1	$5	0.9091	$4.55	
2	$10	0.8265	$8.26	
3	$15	0.7513	$11.27	
4	$20	0.683	$13.66	
Net Present Value			$8	

Project B

Years	B	PVF@10	PVF@10
0	-30	1	-30
1	$20	0.9091	$18.18
2	$10	0.8265	$8.26
3	$8	0.7513	$6.01
4	$6	0.683	$4.10
Net Present Value			$6.55

IRR

$$0 = \sum_{t=0}^{n} \frac{CF_t}{(1 + IRR)^t}$$

Project A

Calculating Internal Rate of Return				
		(IRR) using Ms-Excel "Spread sheet"		
A	B			
Year	Cash flows	Year	Cash flows	
0	-30	0	-30	
1	$5	1	$20	
2	$10	2	$10	
3	$15	3	$8	
4	$20	4	$6	
IRR =	IRR =			
19%	23%			

Regular Paybacks

Pay back				
years	A		Years	B
0	-30		0	-30
1	$5		1	$20
2	$10		2	$10
3	$15		3	$8
4	$20		4	$6
	5+10+15 = 30		20+10 = 30	
	So payback is 3 years		So payback is 2 years	

X

Discounted Paybacks

Project A

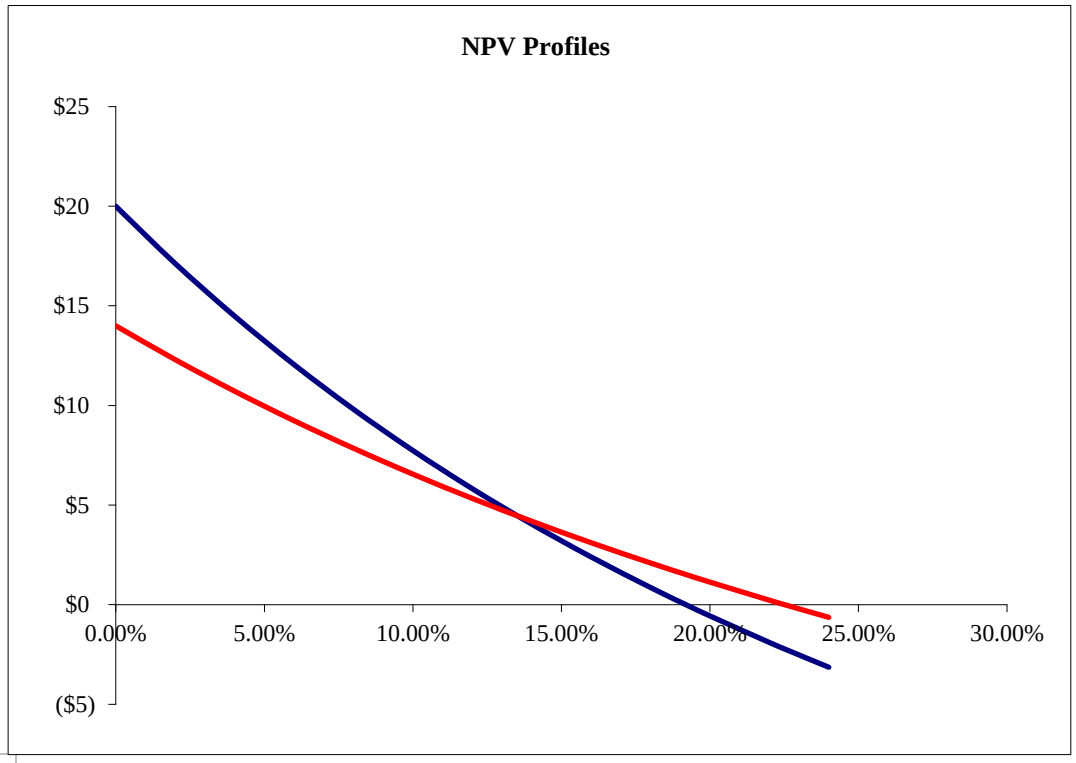
Discounted pay back			
years	**A**	PVF@10	PVF@10
0	-30	1	-30
1	$5	0.9091	$4.55
2	$10	0.8265	$8.26
3	$15	0.7513	$11.27
4	$20	0.683	$13.66
4.55+8.26+11.27 = 24.08			
So we need 5.94 in next year			
Now we take 5.94 in 4th year			
13.66---12months			
5.94-----?			
so = 5.94/13.66*12			
so = 5.21 months			
ANSWAR is 3 years 5.21 months			

Project B

Years	B	PVF@10	PVF@10
0	-30	1	-30
1	$20	0.9091	$18.18
2	$10	0.8265	$8.26
3	$8	0.7513	$6.01
4	$6	0.683	$4.10
	18.18 + 8.26 = 26.44		
	So we need 3.56 in next year		
	Now we take 3.56 in 3 rd year		
	6.01---12months		
	3.56-----?		
	so = 3.56/6.01*12		
	so = 7.10 months		
	ANSWAR is 2 years 7.10 months		

Both projects will be accepted because their NPVs > 0

C . Plot NPV profiles for the two projects. Identify the projects' IRRs on the graph.



	Project A	Project B
	$7.74	$6.55
	$20.00	$14.00
2.00%	$17.13	$12.30
4.00%	$14.48	$10.72
6.00%	$12.05	$9.24
8.00%	$9.81	$7.85
10.00%	$7.74	$6.55
12.00%	$5.82	$5.34
14.00%	$4.05	$4.19
16.00%	$2.40	$3.11
18.00%	$0.86	$2.09
19.19%	$0.00	$1.52
20.00%	-$0.56	$1.13
22.00%	-$1.89	$0.23
22.52%	-$2.23	$0.00
24.00%	-$3.14	-$0.63

D) At WACC of 5%, Project A would still be chosen. At WACC of 15%, Project B would be chosen since its NPV would be greater than NPV of A as is evident from table above.

e). The crossover rate is nothing but the discount rate at which two projects have the same Net Present Value (NPV). This rate is mainly used in capital budgeting to show when one project becomes superior/lower than the other project (while comparing two projects). Like in the above case, if the rate of return is less than 13.5252% then Project 1 ($5, $10, $15, $20) would be better than Project 2 and if it is lower than 13.5252% then Project 2 would be better than Project 1.

You can calculate NPV at different rates for both projects to cross verify the same.

f.)

MIRR is the discount rate at which the PV of the cost of project is equal to PV of its terminal value (TV). The reinvestment rate assumption is the major difference between IRR and MIRR. It is the Modified Internal Rate of Return, which assumes that the projects cash flows (positive) are re invested at the WACC, and the initial cash flow (initial investment and negative cash flows) are financed at the company's financing cost. It is used to rank two or more projects, like the IRR. But MIRR is used to overcome the problems

QUE 3

Treasury Bond

Risk-free rate =				4.00%
Maturity:	12			
Expected inflation:	for the next	2	years =	2%
Expected inflation:	for the next	4	years =	3%
Expected inflation:	for the next	6	years =	4%
		12		
Inflation premium =	((G17*D17)+(G18*D18)+(G19*D19))/D20 =			3.33%
Maturity risk premium =			=0.1*(C16-1)% =	1.1%
12-year Treasury yield=				8.43%

7-year corporate bond
Rating : A

Risk-free rate =				4%
Maturity:	7			
Expected inflation:	for the next	2	years =	2%
Expected inflation:	for the next	4	years =	3%
Expected inflation:	for the next	1	years =	4%
		7		
Inflation premium =	=((G33*D33)+(G34*D34)+(G35*D35))/D36 =			2.86%
Maturity risk premium=	0.1*(C32-1)% =			0.60%
Liquidity premium=				0.7%
Default risk premium=	=IF(B28=H38,I38,IF(B28=H39,I39,IF(ETC.) =			1.5%

(see screen to right for an alternative way to find the

Default Risk from text table:

Rating	DRP
AAA	1.0%
AA	1.2%
A	1.5%
BBB	1.9%
BB+	3.7%

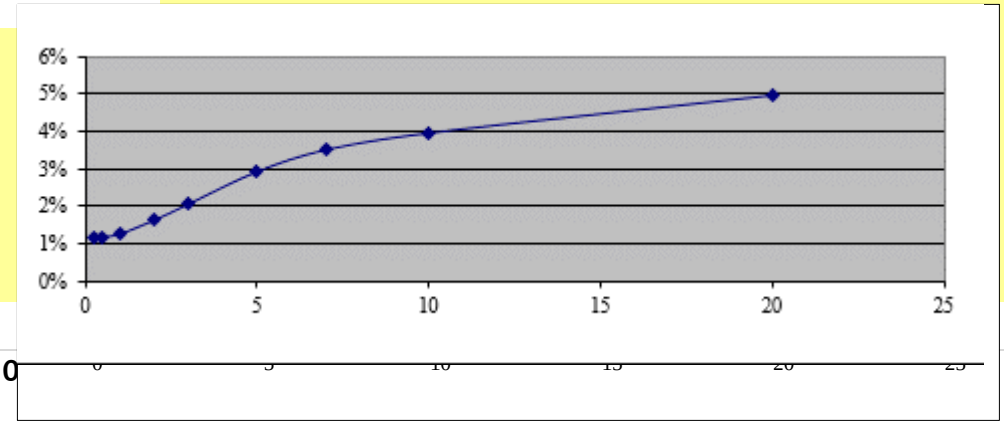
default risk premium.)

7 year Corporate yield=		**9.66%**
Yield Spread = Corporate - Treasury =		**1.224%**
R:econciliation:	Default premium	1.500%
	Liquidity premium	0.700%
	Inflation premium	-0.476%
	Maturity premium	-0.500%
		1.224%

b. Given the following Treasury bond yield information from the September 28, 2001, Federal Reserve Statistical Release, construct a graph of the yield curve as of that date.

Maturity		
Periods	Years	Yield
3 month	0.25	1.16%
6 month	0.50	1.17%
1 year	1.00	1.25%
2 year	2.00	1.62%
3 year	3.00	2.05%
5 year	5.00	2.92%
7 year	7.00	3.50%
10 year	10.00	3.95%
20 year	20.00	4.96%

Now we can use Excel's chart wizard to construct a yield curve.

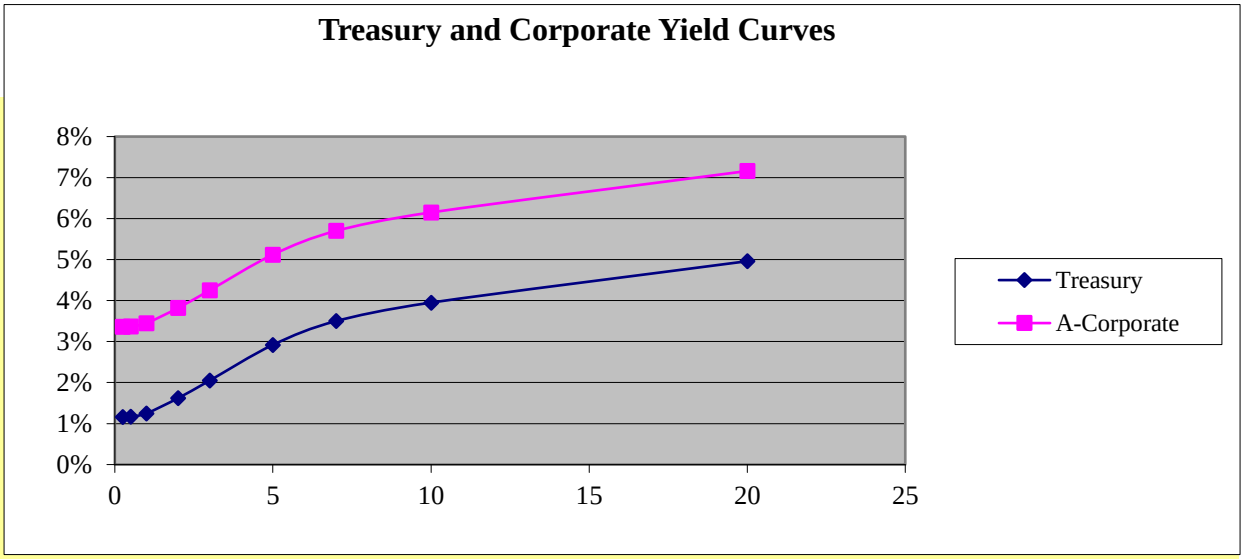


c. Based on the information about the corporate bond that was given in Part a, calculate yields and then construct a new graph that shows both the Treasury and the corporate bonds.

The real risk-free rate would be the same for the corporate and treasury bonds. Similarly, without information to the contrary, we would assume that the maturity and inflation premiums would be the same for bonds with the same maturities. However, the corporate bond would have a liquidity premium and a default premium. If we assume that these premiums are constant across maturities, then we can use the LP and DRP premiums as determined above and add them to the T-bond yields to find the corporate yields. This procedure was used in the table below.

Years	Treasury	A-Corporate	Spread	LP	DRP
0.25	**1.16%**	**3.36%**	**2.20%**	**0.7%**	**1.5%**
0.50	**1.17%**	**3.37%**	**2.20%**	**0.7%**	**1.5%**
1.00	**1.25%**	**3.45%**	**2.20%**	**0.7%**	**1.5%**
2.00	**1.62%**	**3.82%**	**2.20%**	**0.7%**	**1.5%**
3.00	**2.05%**	**4.25%**	**2.20%**	**0.7%**	**1.5%**
5.00	**2.92%**	**5.12%**	**2.20%**	**0.7%**	**1.5%**
7.00	**3.50%**	**5.70%**	**2.20%**	**0.7%**	**1.5%**
10.00	**3.95%**	**6.15%**	**2.20%**	**0.7%**	**1.5%**
20.00	**4.96%**	**7.16%**	**2.20%**	**0.7%**	**1.5%**

Now we can graph the data in the first 3 columns of the above table to get the Treasury and corporate (A-rated) yield curves:



Note that if we constructed yield curves for corporate bonds with other ratings, the higher the rating, the lower the curves would be. Note too that the DRP for different ratings can change over time as investors' (1) risk aversion and (2) perceptions of risk change, and this can lead to different yield spreads and curve positions. Expectations for inflation can also change, and this will lead to upward or downward shifts in all the yield curves.

with IRR, like IRR assumes reinvestment of all cash flows at the internal rate of return only which is a bit unrealistic in practical scenario. Unlike IRR, MIRR gives a single solution.

QUE 4

Case 1:After Tax Proceeds=$10,600

Case 2:After Tax Proceeds=$19,171.43

Tax Liability Created= $9,400.

Explanation:

Case 1:Keyman Mining Company is planning buyback of $1 million worth of company's 500,000 shares.

shares currently trading at $10 per share

Stan holds 10,000 company shares

He originally purchased at $8 per share

Stan sells 2,000 of shares at $10 share.

marginal tax rate 47%

After tax proceeds=2000*10 (1-0.47)

=$10,600

Case 2:Company wants to buyback $1 million worth of shares but instead opts for $1 million fully franked dividends.

the dividends amounts to $2 per ordinary share

Company Tax Rate Is 30%

Stan's Personal Tax Rate Is 47%

Shares Owned By Stan 10,000

Dividend=2 Per Share

Dividend Amount=2*10,000

=$20,000

Franking Credit=Dividend/(1-Tax Rate For Company)-Dividends

=20,000/(1-30%)-20,000=$8,571.43

Entire Amount Received=Franking Credit+ Dividends

=20,000+8,571.43

=$28,571.43

Tax liability created is created only on the 20,000

Tax liability=47%*20,000=$9,400

After tax proceeds=$28,571.43-9,400

=$19,171.43

The tax liability on him is therefore $9,400.

QUE 5

Answer a and b

	May	June	July	August	September	October	November	December	January
Cash on hand			**132000**	90000	90000	90000	90000	90000	
Sales	180000	180000	360000	540000	720000	360000	360000	90000	180000
collection from sales	**18000**	**153000**	**198000**	**351000**	**531000**	**657000**	**414000**	**333000**	**139500**
10% in same month	18000	18000	36000	54000	72000	36000	36000	9000	18000
75% in next month		135000	135000	270000	405000	540000	270000	270000	67500
15% in second month			27000	27000	54000	81000	108000	54000	54000
Labour and rawmaterial	90000	90000	126000	882000	306000	234000	162000	90000	
Payments In next month		**90000**	**90000**	**126000**	**882000**	**306000**	**234000**	**162000**	**90000**
General and admin salary	**27000**	**27000**	**27000**	**27000**	**27000**	**27000**	**27000**	**27000**	**27000**

Lease payment	9000	9000	9000	9000	9000	9000	9000	9000	9000
mlss exp	2700	2700	2700	2700	2700	2700	2700	2700	2700
Income tax payment					63000			63000	
Progress payment						180000			
closlng cash(before bank flnance/lnvestment)			201300	276300	-362700	222300	231300	159300	
Closlng balance requlred			90000	90000	90000	90000	90000	90000	
Investment/(flnance)			111300	186300	-452700	132300	141300	69300	

Answer C

The budget we prepaired is under the assumption that all inflow as well as outflows are occuring uniformally during the month. In the given scenario since all the payments need to be paid on 5th of the month whereas corrensponding inflows will come uniformally during the month this situation will crate cashflow mismatch for the temperory period. Hence to comeup this mismatch company will have to take the shortterm finance facility from bank. In the first month company will have to take a finace of total outflow amount - 5 days receipts of cash in that month. Then the same can be repaid by end of the month then again on 5th of next month finance of outflow-5days inflow. In this way the estimate of cash budget can be prepared.

QUE 6

What effect would each of the following events likely have on the level of nominal interest rates?

a) Households dramatically increase their savings rate.

There would be an increase of supply of funds in the market thus increase availability of capital will push down interest rates.

b) Corporations increase their demand for funds following an increase in investment opportunities.

The increase in demand for funds means firms need more capital thus pushing up interest rate. Furthermore, the increase in investment opportunities will further push up interest rate.

c) The government runs a larger-than-expected budget deficit.

If the government runs a deficit, the government will either cover the deficit by additional borrowing through selling more Treasury bonds or by printing money. With increased borrowing, the demand for funds increases thus pushing up interest rate. If government print money, this gives rise to increased inflation as more money chasing same amount of goods, which also increases interest rate.

d) There is an increase in expected inflation.
There will be an increase in interest rates as lenders will increase their interest rate to maintain their real return.

QUE 7

a) . Yes it is very much possible for conflicts to exist while comparing NPV and IRR of two projects. For independent projects, it is not possible for conflicts between NPV and IRR. NPV > 0 when WACC < IRR, so by NPV rule, these projects would be accepted. By IRR rule, if IRR > WACC, all projects would be accepted.
This may happen due to many reasons, to quote a few,

---i Very different pattern of cash flows, consider the following example,

	r=10%	
Year	Project A	Project B
0	-8000	-8000
1	3000	0
2	3000	0
3	4000	0
4	4000	18000
NPV	**$2,676.30**	**$3,903.86**
IRR	**25%**	**22%**

---ii Different size of investment in both projects, consider the following:

	r= 10%	
Year	Project A	Project B
0	-8000	-25000
1	3000	9000
2	3000	9000

3	3000	9000
4	3000	9000
NPV	**$1,372.36**	**$3,207.99**
IRR	**18%**	**16%**

We can clearly see the conflict in both the cases. In case of such conflicts, the project with higher NPV should be chosen almost always. The main reason for this is that, the NPV uses a pre determined rate to examine whether a project would be fruitful, whereas to calculate IRR we have to use hit and trial method to arrive at an approximate rate at which NPV is zero.

The conflict can also occur if both projects have different life spans.

b).

Payback period is the time taken to recover the initial investment in a project. Discounted Payback period is calculated by discount the future cash flows to their present value (r=WACC) and then calculating the time taken to recover the initial investment. Just keep on adding the cash flows till you reach the initial investemnt amount.

Calculation:

	r= 10%			
Year	Project A	Project B	Discounted CF A	Discounted CF B
0	-30	-50		
1	5	20	4.55	18.18
2	10	10	8.26	8.26
3	15	8	11.27	6.01
4	20	6	13.66	4.10
NPV	$7.04	($12.22)		
IRR	19%	-6%		
Regular Payback	3 years	Initial investment not recovered		

Discounted Payback		Between 3 & 4 yrs	Initial investment not recovered

In both cases (general/discounted) we can see that Project A is better as initial investment is not recovered for Project B in both caes. Note that NPV & IRR are shown here just for information, there is no need to calculate them to find out the PBP.

Payback method is although very easy to calculate but is not a very reliable tool for capital budgeting. This is because it doesn't give us the exact results. We just get an approximate figure and a vague idea as to when our initial investment would be recovered. Since the basic rule of investment is to atleast reach the break even point, PBP may be used then, but it becomes difficult to actually judge that whether a project is profitable or how profitable. On the other hand NPV/ IRR are much better tools for capital budgeting decisions because NPV provides the absolute figure that the project will earn in the future and on comparing IRR with the Cost of Capital we can decide whether a project is profitable or not. Hence, these two provide more reliable resuls than PBP.

c. Academics favour NPV over IRR because NPV gives an estimate of contribution of a potential project towards shareholder wealth maximization. Executives like IRR because it provides information regarding a project's safety margin. Although NPV method is better but it is still more complicated than IRR. There are assumptions in NPV which are more complex than IRR. And, besides IRR can be used to rank the projects which are not mutually exclusive and the company can choose both/all at the same time. This may sometimes be a better option. However, to rank mutually exclusive projects, NPV still remains the best method.