POLITECNICO
DI MILANO

Cash flows

Exercises with solutions

Accounting, Finance & Control

1. Cash flows

Table 1: P&L Account

Year (t)	**Company A**	**Company B**
Revenues	75	75
- Operating Costs	-50	-50
EBITDA	**25**	**25**
- D&A	-5	-5
EBIT	**20**	**20**
- Financial expenses	-10	-10
EBT	**10**	**10**
- Taxes	-3	-3
Net Profit	**7**	**7**

Table 2: Balance sheet

	Company A		**Company B**	
ASSETS	**Year (t-1)**	**Year (t)**	**Year (t-1)**	**Year (t)**
Current assets				
Account receivable	15	18	15	12
Inventories	7,5	9,5	7,5	6,8
Other	30	30	15	20
Non current assets				
Fixed assets	100	96,1	120	120,6
Total assets	**152,5**	**153,6**	**157,5**	**159,4**
LIABILITIES	**Year (t-1)**	**Year (t)**	**Year (t-1)**	**Year (t)**
Current liabilities				
Account payables	13	15,7	13	12
Other	20	30	0	0
Non current liabilities				
Long-term debt	55	40	85	90
Equity				
Share capital	60	60	50	55
Reserves	4,5	7,9	9,5	2,4
Total liabilities & equity	**152,5**	**153,6**	**157,5**	**159,4**

Table 3: Investment strategy

Year (t)	**Company A**	**Company B**
Purchase of new assets	1,1	7
Disposal of assets	0	-1,4

The tables above report the P&L account and balance sheet of Company A and B. The two companies have an identical structure of revenues and costs (Table 1), they have almost the same size (Table 2) but they undertake different investment strategies (Table 3) and different financial strategies. In particular:

- In year t, Company A repays part of its debt (-15) but it does not issue new debt. Company B repays part of its debt (-15) and it issues new debt (+20). Furthermore, Company B undertakes a share capital increase (+5). The two companies do not pay dividends.

Company A and B have the same net profits in year t. A financial analyst wants to understand if these companies are equally able to generate cash.

- Compute and discuss the FCFF and FCFE

1.1 Solution

	Company A	**Company B**
EBIT	**20**	**20**
- Taxes	-6	-6
+D&A	5	5
- ΔNWC	-2,3	2,7
- ΔCAPEX	-1,1	-5,6
FCFF	**15,6**	**16,1**
- Net fin expeses	-7	-7
+ Net fin revenues	0	0
+ Δ Debt	-15	5
+ Δ Share capital	0	5
- Dividends	0	0
FCFE	**-6,4**	**19,1**

2. Cash flows

Having the following data, compute FCFF and FCFE for each year. The company has not undertaken an increase in share capital. As such, the increase in shareholder's equity is given by the increasing retained earnings and reserves.

P&L	**n**	**n+1**	**n+2**	**n+3**
Revenue	669,0	721,7	802,6	899,1
Operating cost (OpEx)	-620,1	-646,4	-710,2	-789,0
EBITDA	48,9	75,3	92,4	110,1
D&A	-24,1	-24,6	-27,7	-28,2
EBIT	24,8	50,7	64,7	81,9
Financial expenses	-12,9	-10,9	-10,6	-11,3
EBT	11,9	39,8	54,1	70,6
Income tax expenses	-7,1	-19,4	-24,9	-33,3
Profit for the year	4,8	20,4	29,2	37,3
Balance Sheet	**n**	**n+1**	**n+2**	**n+3**
Net Working Capital	82,5	91,5	103,3	116,9
Fixed Assets	180,1	217,6	222,3	214,1
Total assets	*262,6*	*309,1*	*325,6*	*331,0*
Debt	211,4	237,5	227,9	201,8
Shareholders Equity	51,2	71,6	97,7	129,2
Total equity and liabilities	*262,6*	*309,1*	*325,6*	*331,0*

No issue of new share capital

2.1 Solution

	n+1	**n+2**	**n+3**
EBIT	50,7	64,7	81,9
tax rate (Taxes/EBT)	*48,7%*	*46,0%*	*47,2%*
-Taxes on EBIT	-24,7	-29,8	-38,6
+D&A	24,6	27,7	28,2
- ΔNWC	-9,0	-11,8	-13,6
- ΔCAPEX = - (FX_t-FX_{t-1}+$D\&A_t$)	-62,1	-32,4	-20,0
FCFF	**-20,5**	**18,4**	**37,9**
+ Net fin. revenues	0,0	0,0	0,0
- Net fin. expenses	-5,6	-5,7	-6,0
+ Δ Debt	26,1	-9,6	-26,1
+ Δ Share capital	0	0	0
FCFE	**0,0**	**3,1**	**5,8**

3. Cash flows

Table 1 shows the income statement of Gamma at year n (taken as a base year). A financial analyst has estimated that Gamma's revenues will grow by 5% in years n+1 and n+2 and the EBITDA margin is expected to stay at 30% of revenues for the following years. Depreciation and amortization will be 25 mln euro in n+1 and n+2. Gamma will also undertake new investments (capital expenditures) of 100 mln euro in n+1. Working capital is reported in Table 2. The corporate tax rate is 30%.

1. Compute the FCFF of Gamma for years n+1 and n+2.

Table 1

	n
Revenues	900
Operating expenditures	630
EBITDA	**270**
D&A	20
EBIT	**250**

Table 2

	n	n+1	n+2
Account receivables	20	25	35
Inventories	8	9	10
Account payables	25	20	15

In order to finance the new investments, Gamma will issue 50 mln euro of new debt in n+1. Gamma will have to repay the overall debt (old+new) in constant quotas of 20 mln euro from year n+1 onwards. The overall net financial expenses of Gamma will be 3.5 mln euros in years n+1 and n+2. Gamma will pay 5 mln euro of dividends in year n+2.

2. Compute the FCFE of Gamma for years n+1 and n+2.

3.1 Solution

1. Compute the FCFF of Gamma for years n+1 and n+2.

	n+1	n+2
Revenues	945	992,3
EBITDA	283,5	297,7
- D&A	-25	-25
EBIT	**258,5**	**272,7**
- Taxes	-77,6	-81,8
+ D&A	25,0	25,0
- ΔNWC	-11,0	-16,0
- ΔCAPEX	-100,0	0,0
FCFF	**95,0**	**199,9**

	n	n+1	n+2
Account receivables	20	25	35
Inventories	8	9	10
Account payables	25	20	15
NWC	3	14	30
ΔNWC		11	16

2. Compute the FCFE of Gamma for years n+1 and n+2.

FCFF	**95,0**	**199,9**
+ New debt	50,0	0,0
-Debt repayment	-20,0	-20,0
- Net fin. expenses	-3,5	-3,5
- Dividends	0	-5
FCFE	**121,5**	**171,4**