

goal is long term analysis, future analysis
for checking the strategy

these are value based indicators!



POLITECNICO
MILANO 1863

6 out of 6

Accounting, Finance & Control

Enterprise Value **Equity Value**

financial value of the company



Prof. Emanuele LETTIERI, PhD
emanuele.lettieri@polimi.it

What goal for an enterprise?

$$\max ROE = \frac{Net\ Profit}{Equity}$$

You cannot pay salaries, suppliers, etc. and buy new ASSETS with profit... **you need CASH...**

“Revenue is vanity, profit is sanity and cash is reality”

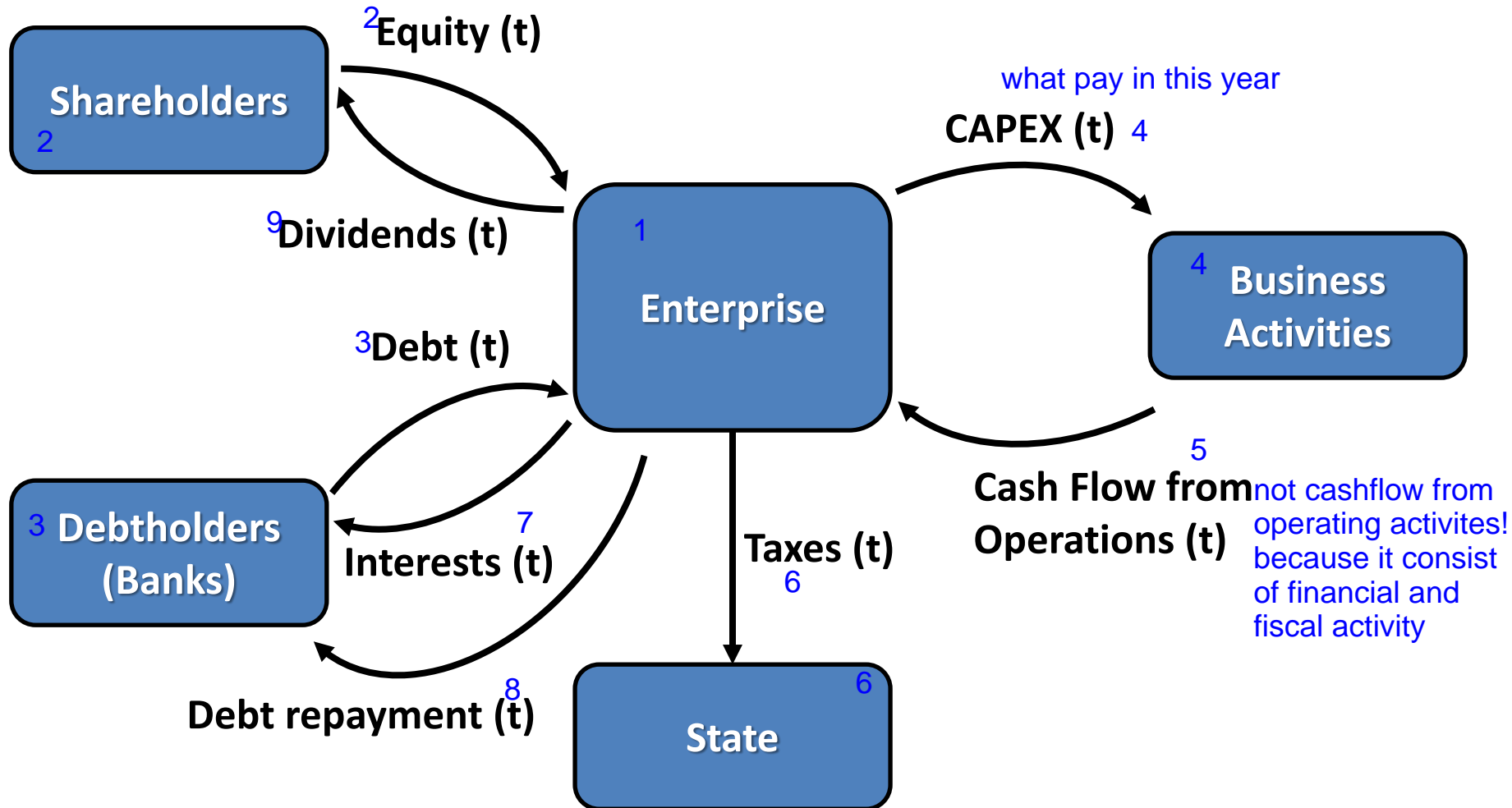
cash perspective! (future perspective, generate enough cash)

max Cash Flow from Operating Activities

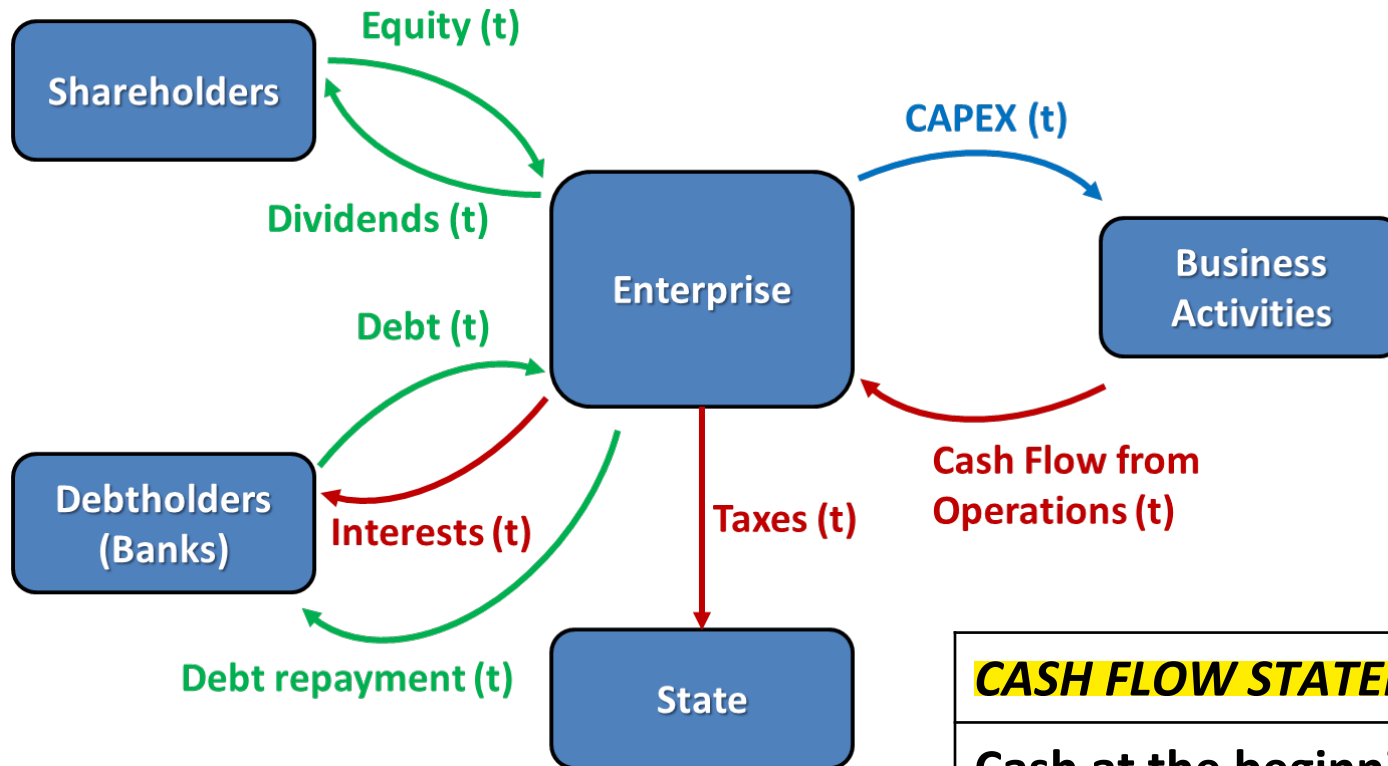
One year is not enough... we must look at the long-term... This translates Strategy into Value



The Cash Generation Cycle



The Cash Generation Cycle (**Accounting**)



CASH FLOW STATEMENT

Cash at the beginning of the year

+ Cash Flow from Operating Activities

+ Cash Flow from Investment Activities
disposals

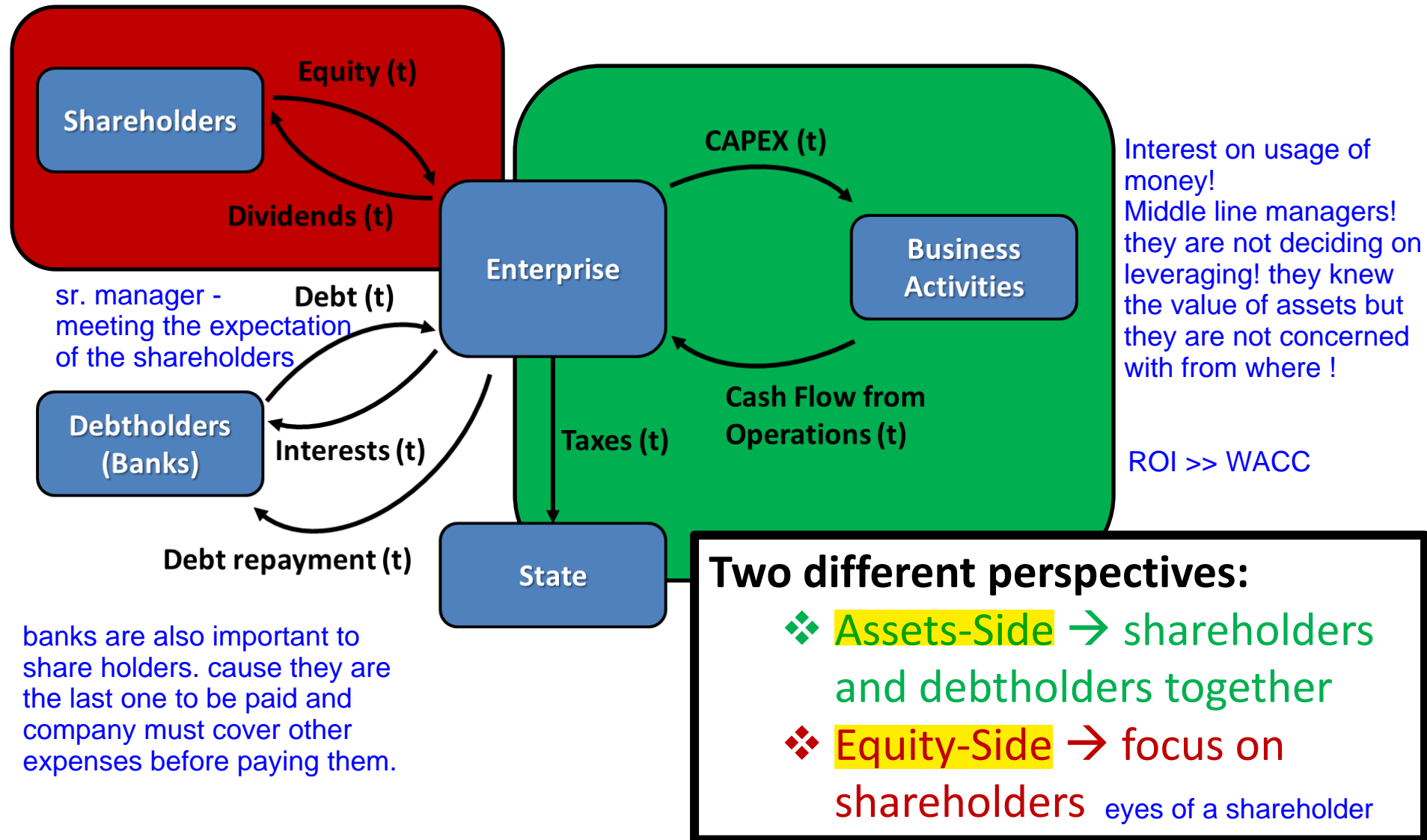
+ Cash Flow from Financing Activities

= Cash at the end of the year



The Cash Generation Cycle (**Finance**)

CORPORATE
FINANCE
starts here....



equity value: market capitalization is the real proxy.
Finance people buy shares equal to equity value.

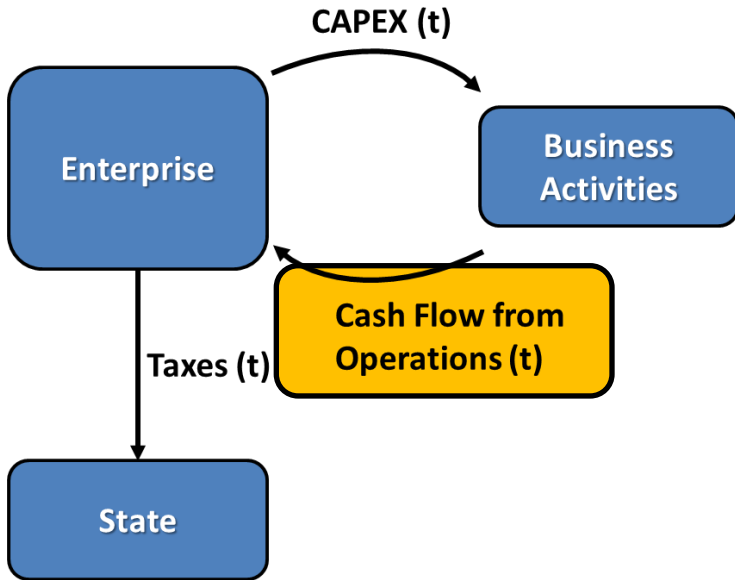
Enterprise Value (*Assets-Side*)

very important to middle line managers, it is their goal to maximize of it. (the capability of enterprise to sustain growth strategy using the operation (generating Cash))



Assets-Side = focus on business

middle line manager



for checking the cash generation of a company, we need to start from the STRATEGY. First real result of the strategy is EBIT.

estimate EBIT => Adjust Ebit

Cash generation (t) = ?

We start from EBIT (t) because when forecasting the future

1. we translate strategy and competitive advantages in expected revenues vs operating costs
2. we **adjust** them in expected cash inflows vs cash outflows

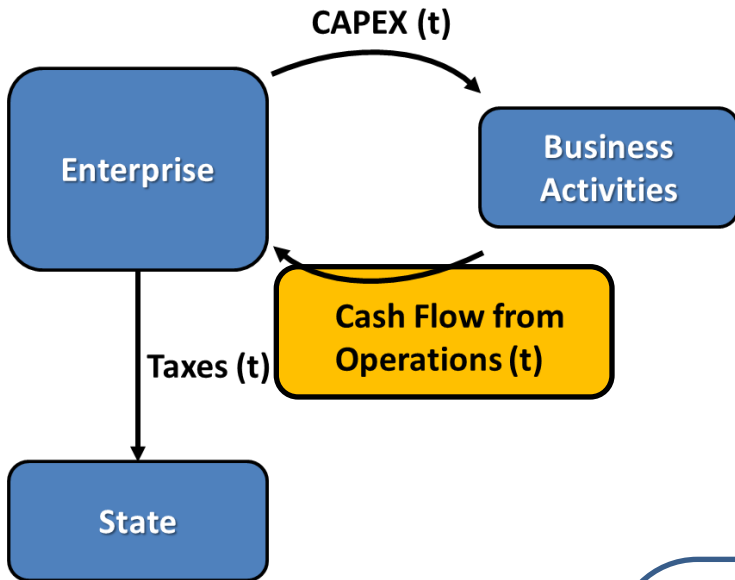
We will see the full cycle during the lectures about budgeting

forecasting EBIT will be taught in future



EBIT → EBITDA

estimate the ebit for every year and then
adjust EBIT from accrual to cash



Cash generation (t) = ?

$$\text{EBIT (t)} + \text{D\&A (t)} \quad \text{eliminating D\&A} \Rightarrow \text{EBITDA}$$

EBIT (t) underestimates cash generation

because it considers D&A among operating costs even if they do not generate cash outflows

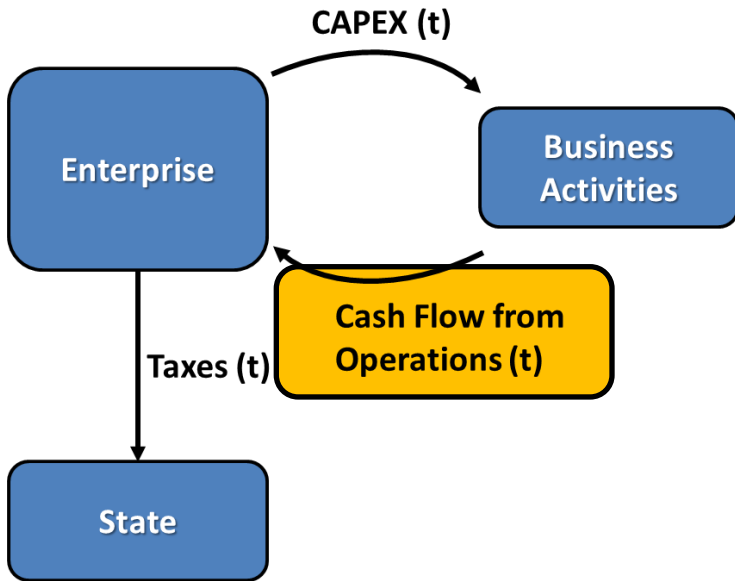
In this view, we must adjust EBIT (t) readding D&A (t)

D&A is not cash outflow

income statement by nature
EBITDA is proxy of cash flow
rev cash in
cost cash out



Revenues → Cash Inflows



Cash generation (t) = ?

$$\begin{aligned} & \text{EBIT (t)} \\ & + \text{D\&A (t)} \\ & - [\text{Receiv (t)} - \text{Receiv (t-1)}] \end{aligned}$$

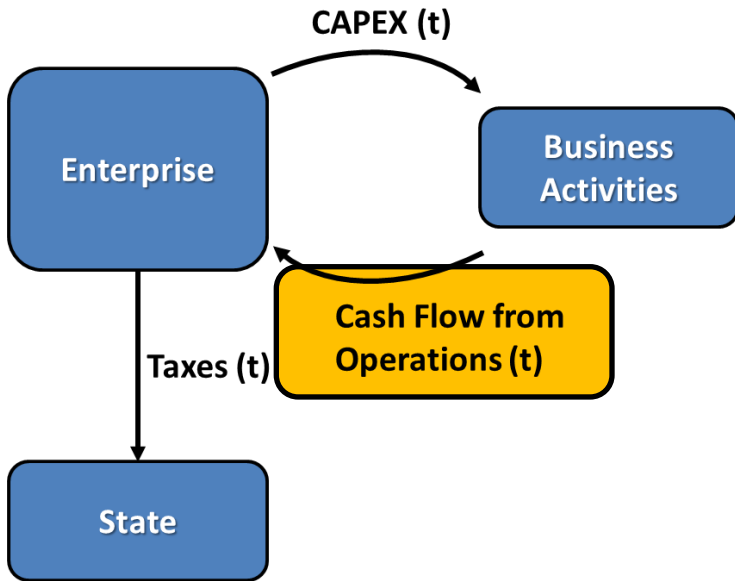
EBIT (t) considers Revenues (t).

To translate revenues in cash inflows we must consider receivables

$$\text{Cash inflows (t)} = \text{Revenues (t)} - \text{Receivables (t)} + \text{Receivables (t-1)}$$



Operating Costs → Cash Outflows (1)



Cash generation (t) = ?

$$\begin{aligned} & \text{EBIT (t)} \\ & + \text{D\&A (t)} \\ & - [\text{Receiv (t)} - \text{Receiv (t-1)}] \\ & - [\text{Invent (t)} - \text{Invent (t-1)}] \end{aligned}$$

some of material remained and we have to pay for them.
but last year were in storage and we didn't pay them this year

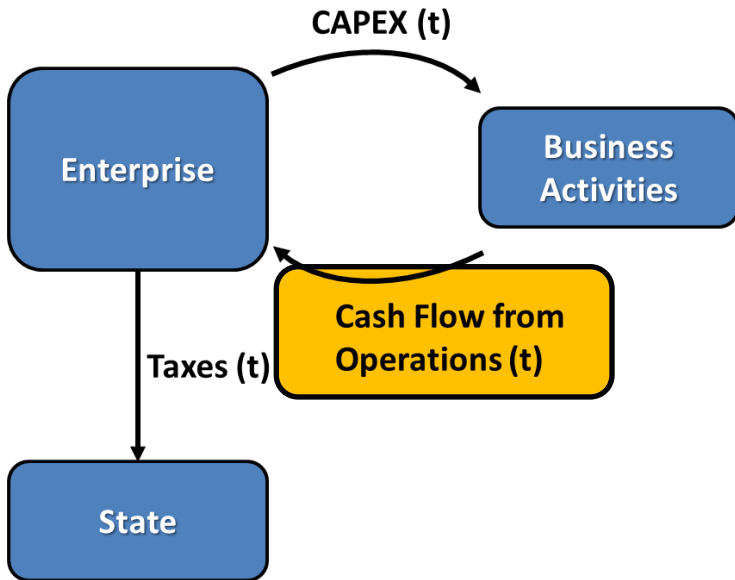
EBIT (t) considers Costs of Good Sold (t).

To translate costs in cash outflows we must consider inventories

$$\text{Cash outflows (t)} = \text{COGS (t)} + \text{Inventories (t)} - \text{Inventories (t-1)}$$



Operating Costs → Cash Outflows (2)



Cash generation (t) = ?

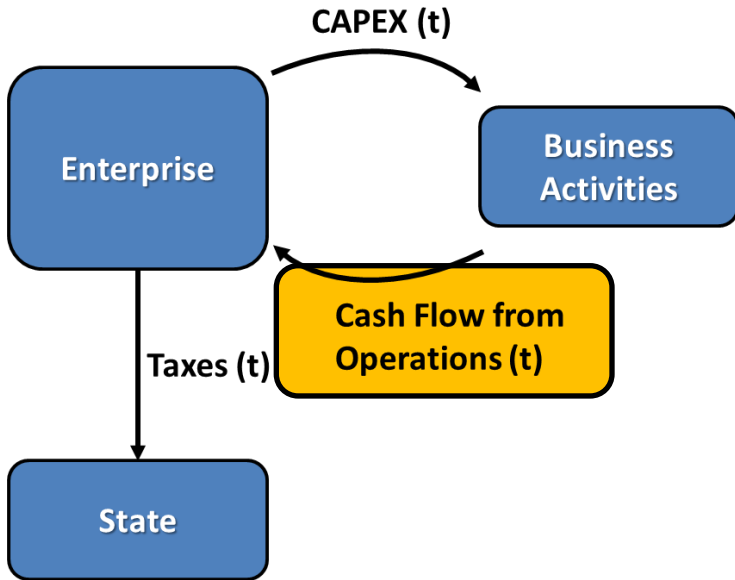
$$\begin{aligned} & \text{EBIT (t)} \\ & + \text{D\&A (t)} \\ & - [\text{Receiv (t)} - \text{Receiv (t-1)}] \\ & - [\text{Invent (t)} - \text{Invent (t-1)}] \\ & + [\text{Payab (t)} - \text{Payab (t-1)}] \end{aligned}$$

To translate costs in cash outflows we must consider payables

$$\text{Cash outflows (t)} = \text{Costs} - \text{Payables (t)} + \text{Payables (t-1)}$$



Variation of the Net Working Capital (1)



Cash generation (t) = ?

EBIT (t)

+ D&A (t)

- [Receiv (t) – Receiv (t-1)]

- [Invent (t) – Invent (t-1)]

+ [Payab (t) – Payab (t-1)]

$$NOWC(t) = Receivables(t) + Inventories(t) - Payables(t)$$

$$\rightarrow -NOWC(t) + NOWC(t-1) = -\Delta NOWC(t-t-1)$$



Variation of the Net Working Capital (2)

cashflow from operation: (Adjusting the EBIT)

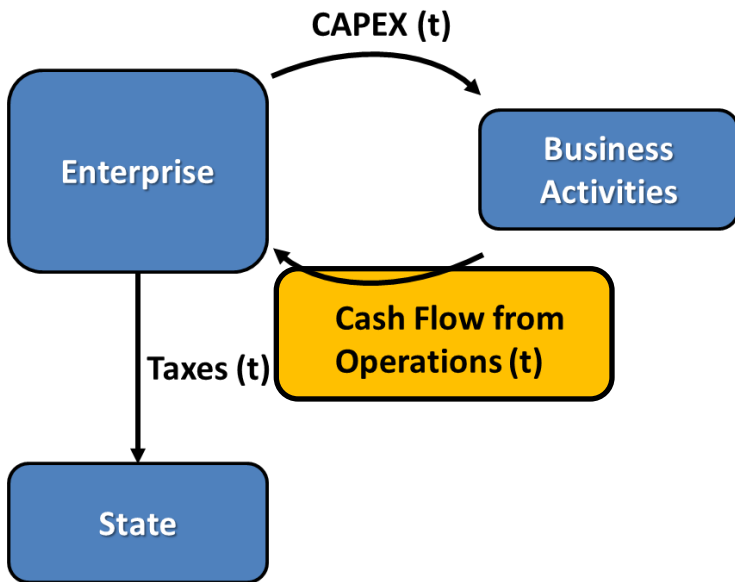
Cash generation (t) = ?

EBIT (t)

+ D&A (t)

- $\Delta \text{NOWC} (t - t-1)$

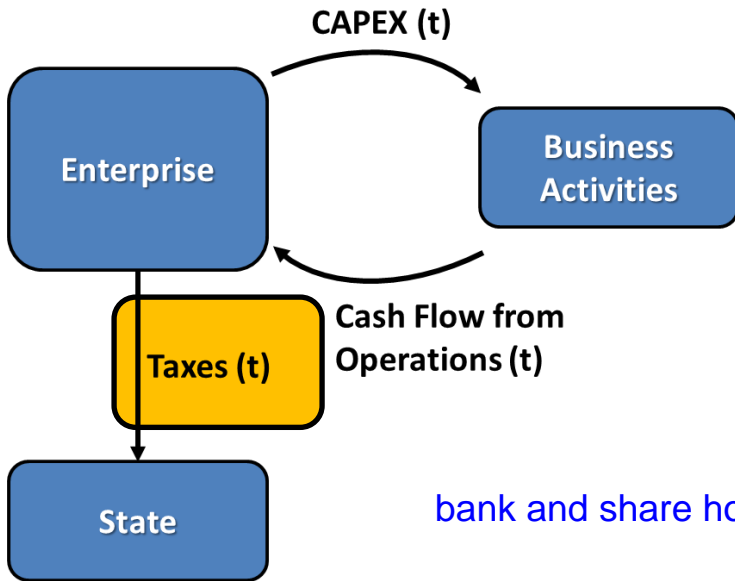
EBit is cash flow up to now!



Taxes

apr may => approving the statements

tax numbers in IS is accrual
in CF is real payment



bank and share holder as unique entity.

Cash generation (t) = ?

EBIT (t)

+ D&A (t)

- $\Delta \text{NWC} (t - t-1)$

- Taxes (t) = EBIT * t_c
not EBT

not in both IS
and CF
statement

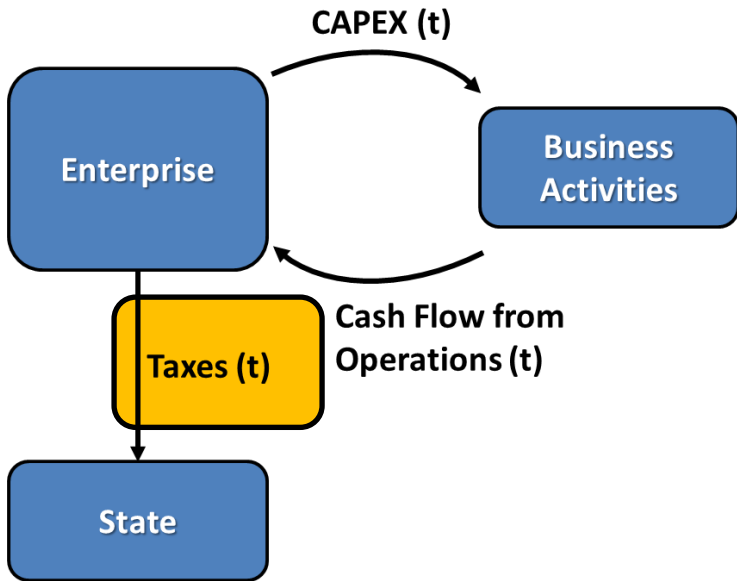
not considering financial
exchange of bank!

the cost of capital is WACC

Taxes are computed directly on EBIT because Shareholders and Debtholders are assumed as a single entity and thus financial costs are assumed as an “internal flow” that does not act as a tax shield



Taxes



Cash generation (t) = ?

EBIT (t)

+ D&A (t)

- $\Delta \text{NWC} (t - t-1)$

- Taxes (t) = $\text{EBIT} * t_c$

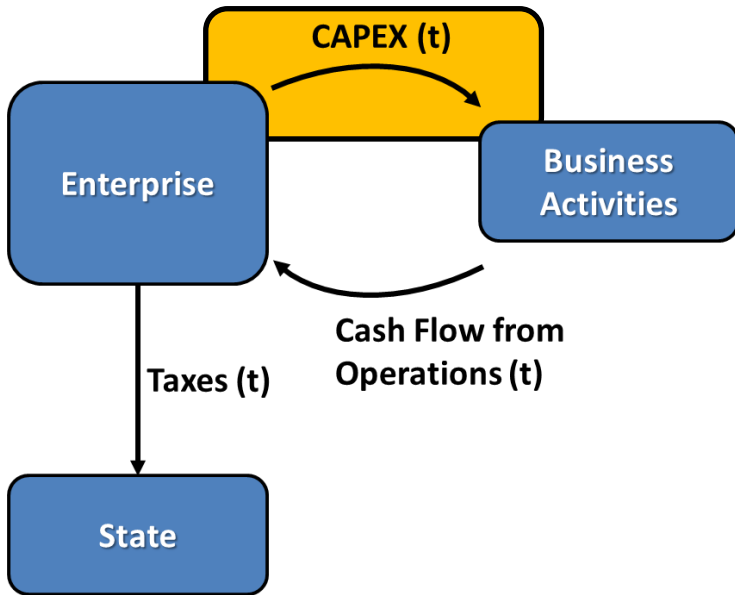
relocate the value chain to decrease the tax
and this can be a mandate of middle line managers

$$\text{EBIT} * (1 - t_c) = \text{NOPAT}$$

NET OPERATING PROFIT AFTER TAXES



CAPEX



Cash generation (t) = ?

$$\begin{aligned}
 & \text{EBIT (t)} \\
 & + \text{D\&A (t)} \\
 & - \Delta \text{NWC (t - t-1)} \\
 & - \text{Taxes (t) = EBIT} * t_c
 \end{aligned}$$

NET Capex is here

- **CAPEX (t)** the installments portion of assets that are paid this years

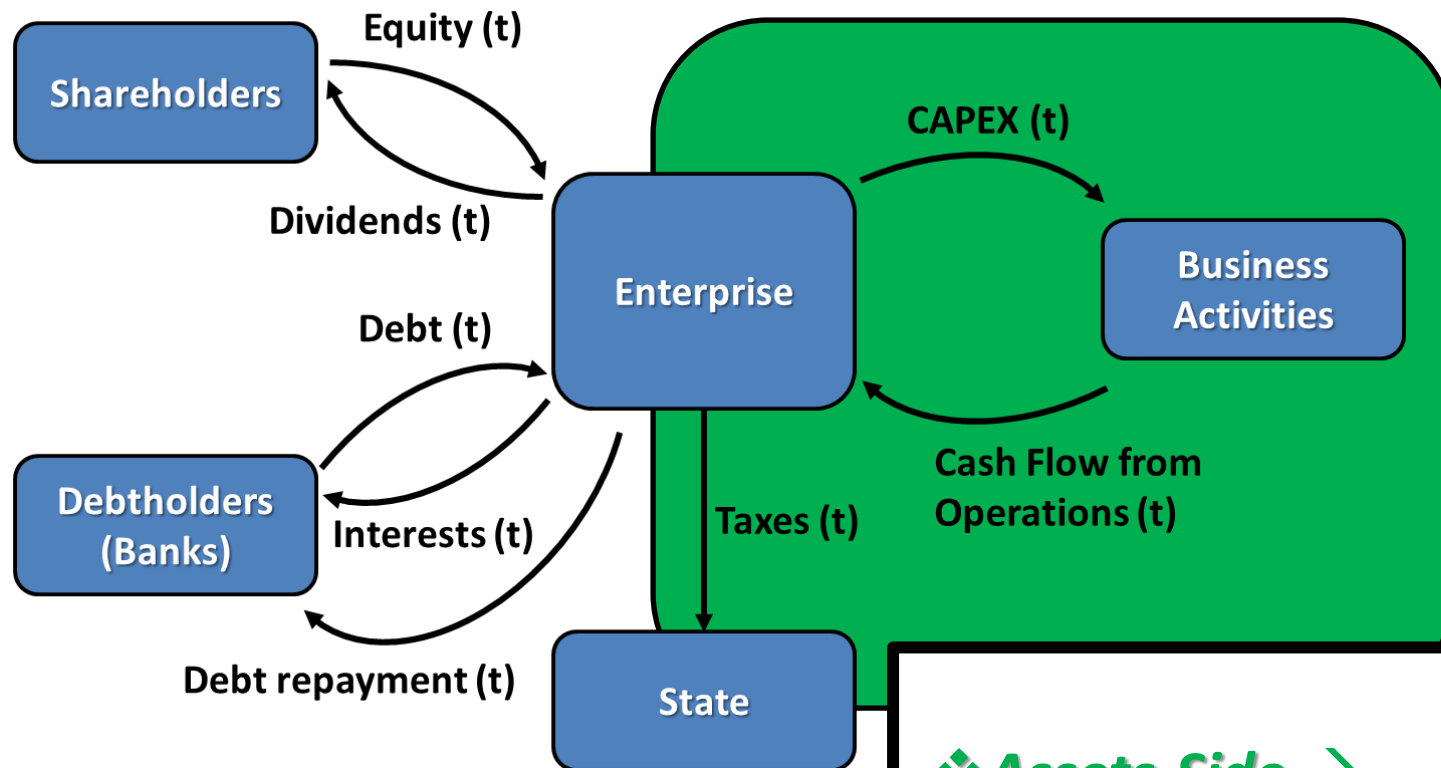
In case of DISPOSAL of Assets, we must consider

assumptions disposal = 0 usually

$$\text{Net CAPEX} = \text{CAPEX (t)} - \text{Disposals (t)}$$



The Cash Generation Cycle (Finance)

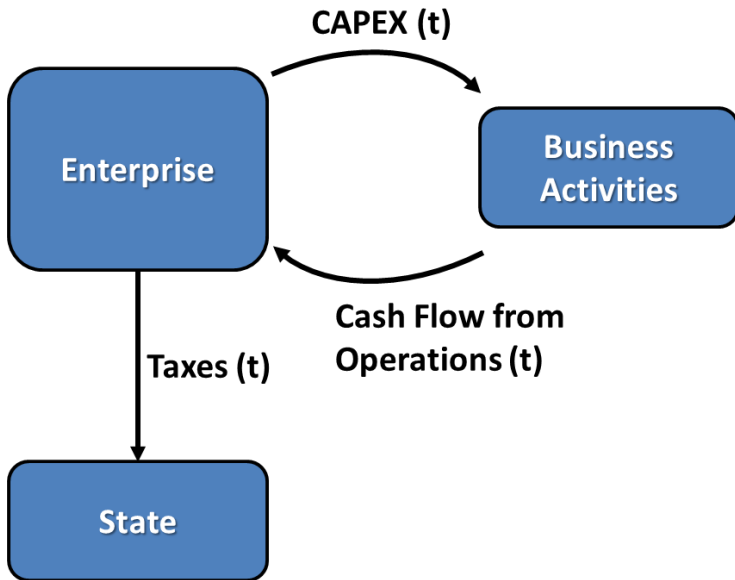


❖ **Assets-Side** →
shareholders and debtholders
together as single entity



Free Cash Flow to Firm \rightarrow FCFF (t)

the basic component of enterprise value



Cash generation (t) = ?

$$\begin{aligned} & \text{EBIT (t)} \\ & + \text{D\&A (t)} \\ & - \Delta \text{NOWC (t - t-1)} \\ & - \text{Taxes (t) = EBIT * } t_c \\ & - \text{CAPEX (t)} \\ & = \text{FCFF (t)} \end{aligned}$$

Free Cash Flow to the Firm

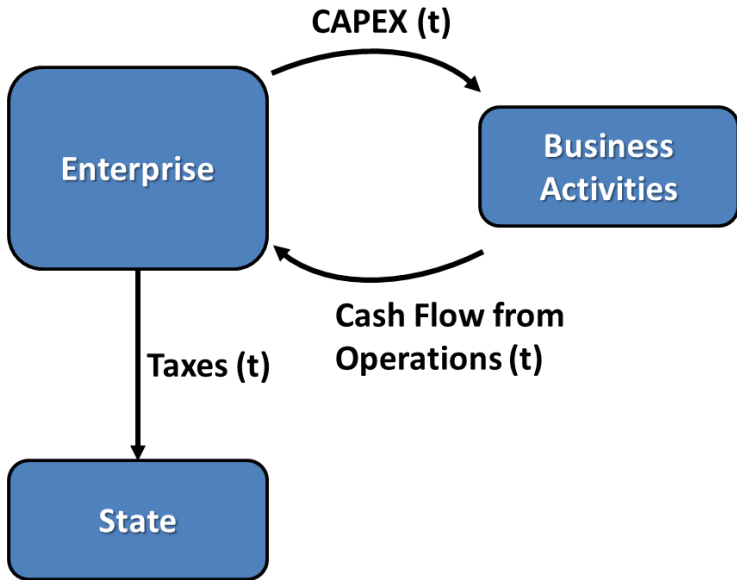
cash available for company. free means it's net.

this is not available to shareholders!



Enterprise Value EV (1)

goal of a company:



$$\cancel{FCFF(t) > 0}$$

cash flow positive

One year does not make sense
→ Long-term

$$\cancel{\sum_{t=1}^{\infty} FCFF(t) > 0}$$

The value of "money" changes
over time → Discounting

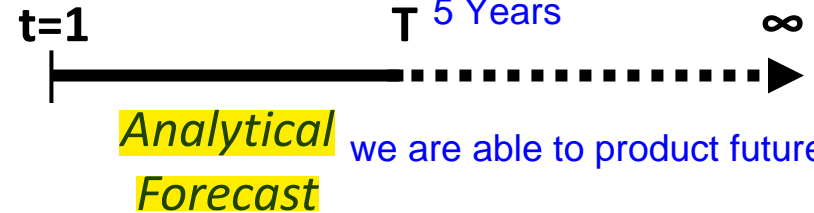
$$EV = \sum_{t=1}^{\infty} \frac{FCFF(t)}{(1 + WACC)^t}$$

goal: $\sum_{t=1}^{\infty} \frac{FCFF(t)}{(1 + WACC)^t} > 0$



Enterprise Value EV (2)

$$EV = \sum_{t=1}^{\infty} \frac{FCFF(t)}{(1 + WACC)^t}$$



we are able to product future reports

$$\sum_{t=1}^T \frac{FCFF(t)}{(1 + WACC)^t} + \sum_{t=T+1}^{\infty} \frac{FCFF(t)}{(1 + WACC)^t}$$

Terminal Value TV

$$\sum_{t=1}^T \frac{FCFF(t)}{(1 + WACC)^t} + \frac{1}{(1 + WACC)^T} *$$

$$\sum_{t=T+1}^{\infty} \frac{FCFF(t)}{(1 + WACC)^{t-T}}$$

enterprise value that ent. can generate after T

$$\sum_{t=1}^T \frac{FCFF(t)}{(1 + WACC)^t} + \frac{TV(T)}{(1 + WACC)^T}$$

because of npv, unifying the value!



Enterprise Value EV (3)

analytical approach | only when you are inside the company, we can't create financial reports

$$\sum_{t=1}^T \frac{FCFF(t)}{(1+WACC)^t} + \frac{TV(T)}{(1+WACC)^T}$$

How to manage TV?

1. $TV = 0 \rightarrow$ This choice makes sense when T is long enough

after 10, 20 is logical

2. $FCFF(t) = FCFF(T)$ when $t > T$ $TV(T) = \frac{FCFF(T)}{WACC}$ fcff will remain constant during years

3. $FCFF(t+1) = FCFF(t) * (1+g)$ when $t > T$ $TV(T) = \frac{FCFF(T) * (1+g)}{WACC - g}$

$g =$ yearly growth rate

assume a growth in TV



Short case study

You want to evaluate the **Equity Value** of the company Sama.

You have just estimated the company P&L for next 3 years (Table 1).

Furthermore, you know that the company will do **capital expenditures** in 2015 (25 mln €), 2016 (33 mln €) and 2017 (36 mln €).

There will be **changes in the financial structure** (Table 2).

Cost of equity will be 14% (2015), 14.2% (2016), and 15.4% (2017).

Finally, you have **prospects of the NWC** for the next 3 years (Table 3).

After the period of analytical forecast, the FCFE are supposed to increase infinitely (**$g=3\%$**).

we start $t = 1$

we start from 2015



TABLE 1		ESTIMATIONS			
P&L (data in mln euros)	2014	2015	2016	2017	
Revenue	235,0	210,0	230,0	240,0	
Operating cost (OpEx)	-102,0	-95,0	-125,0	-104,0	
EBITDA	133,0	115,0	105,0	136,0	
D&A	-21,0	-23,0	-29,0	-31,0	
EBIT	112,0	92,0	76,0	105,0	
Financial revenues/expenses	-10,0	9,0	-10,0	-12,0	
EBT	102,0	101,0	66,0	93,0	
Income tax expenses	-35,7	-35,4	-23,1	-32,6	
Profit for the year	66,3	65,7	42,9	60,5	

TABLE 2		ESTIMATIONS			
Balance Sheet (data in mln euros)	2014	2015	2016	2017	
Debt	112	102	110	121	
Shareholders Equity	54	62	65	61	No changes in share capital
Total equity and liabilities	166	164	175	182	

TABLE 3		ESTIMATIONS			
(data in mln euros)	2014	2015	2016	2017	
Accounts Receivable	64	64	64	64	
Inventories	33	35	40	44	
Accounts Payable	35	41	39	41	



Short case study – Solution (1)

		2015
	EBIT (t)	
+	D&A (t)	
-	$\Delta \text{NOWC (t - t-1)}$	
-	Taxes (t) = $\text{EBIT} * t_c$	
-	CAPEX (t)	
=	FCFF (t)	
-	Net Interests (t)* $(1-t_c)$	
±	Debt (t)	
+	Share Capital (t)	
-	Dividends (t)	
=	FCFE (t)	

Short case study – Solution (2)

		2015
	EBIT (t)	+92
+	D&A (t)	
-	$\Delta \text{NOWC (t - t-1)}$	
-	Taxes (t) = $\text{EBIT} * t_c$	
-	CAPEX (t)	
=	FCFF (t)	
-	Net Interests (t)* $(1-t_c)$	
±	Debt (t)	
+	Share Capital (t)	
-	Dividends (t)	
=	FCFE (t)	

P&L (data in mln <u>euros</u>)	2015
Revenue	210,0
Operating cost (<u>OpEx</u>)	-95,0
EBITDA	115,0
D&A	23,0
EBIT	92,0
Financial revenues/expenses	9,0
EBT	101,0
Income tax expenses	-35,4
Profit for the year	65,7

Short case study – Solution (2)

		2015
	EBIT (t)	+92
+	D&A (t)	+23
-	$\Delta \text{NOWC (t - t-1)}$	
-	Taxes (t) = $\text{EBIT} * t_c$	
-	CAPEX (t)	
=	FCFF (t)	
-	Net Interests (t)* $(1-t_c)$	
±	Debt (t)	
+	Share Capital (t)	
-	Dividends (t)	
=	FCFE (t)	

P&L (data in mln <u>euros</u>)	2015
Revenue	210,0
Operating cost (<u>OpEx</u>)	-95,0
EBITDA	115,0
D&A	-23,0
EBIT	92,0
Financial revenues/expenses	9,0
EBT	101,0
Income tax expenses	-35,4
Profit for the year	65,7

Short case study – Solution (3)

		2015
	EBIT (t)	+92
+	D&A (t)	+23
-	$\Delta \text{NOWC (t - t-1)}$	
-	Taxes (t) = $\text{EBIT} * t_c$	
-	CAPEX (t)	
=	FCFF (t)	
-	Net Interests (t)* $(1-t_c)$	
±	Debt (t)	
+	Share Capital (t)	
-	Dividends (t)	
=	FCFE (t)	

P&L (data in mln <u>euros</u>)	2015
Revenue	210,0
Operating cost (<u>OpEx</u>)	95,0
EBITDA	115,0
D&A	-23,0
EBIT	92,0
Financial revenues/expenses	9,0
EBT	101,0
Income tax expenses	-35,4
Profit for the year	65,7

Short case study – Solution (4)

		2015
	EBIT (t)	+92
+	D&A (t)	+23
-	$\Delta \text{NOWC (t - t-1)}$	+4
-	Taxes (t) = EBIT * t_c	
-	CAPEX (t)	
=	FCFF (t)	
-	Net Interests (t)* (1-t_c)	
±	Debt (t)	
+	Share Capital (t)	
-	Dividends (t)	
=	FCFE (t)	

$$\left\{ \begin{array}{l} - \text{Rec}(t) + \text{Rec}(t-1) = - 64 + 64 \\ - \text{Inv}(t) + \text{Inv}(t-1) = - 35 + 33 \\ + \text{Pay}(t) - \text{Pay}(t-1) = + 41 - 35 \end{array} \right.$$

(data in <u>mln</u> euros)	2014	2015
Accounts Receivable	64	64
Inventories	33	35
Accounts Payable	35	41

Short case study – Solution (5)

		2015
	EBIT (t)	+92
+	D&A (t)	+23
-	$\Delta \text{NOWC (t - t-1)}$	+4
-	Taxes (t) = $\text{EBIT} * t_c$	-32.2
-	CAPEX (t)	
=	FCFF (t)	
-	Net Interests (t)* $(1-t_c)$	
±	Debt (t)	
+	Share Capital (t)	
-	Dividends (t)	
=	FCFE (t)	

P&L (data in mln <u>euros</u>)	2015
Revenue	210,0
Operating cost (<u>OpEx</u>)	-95,0
EBITDA	115,0
D&A	-23,0
EBIT	92,0
Financial revenues/expenses	9,0
EBT	101,0
Income tax expenses	-35,4
Profit for the year	65,7

$$t_c = \text{taxes}/\text{EBT} = 35.4/101 = 35\%$$

$$\text{taxes} = 35\% * 92 = - 32.2$$

Short case study – Solution (6)

		2015
	EBIT (t)	+92
+	D&A (t)	+23
-	$\Delta \text{NOWC (t - t-1)}$	+4
-	Taxes (t) = $\text{EBIT} * t_c$	-32.2
-	CAPEX (t)	-25
=	FCFF (t)	
-	Net Interests (t)* $(1-t_c)$	
±	Debt (t)	
+	Share Capital (t)	
-	Dividends (t)	
=	FCFE (t)	

... the company will do
capital expenditures
in 2015 (25 mln €)

Short case study – Solution (7)

		2015
	EBIT (t)	+92
+	D&A (t)	+23
-	$\Delta \text{NOWC (t - t-1)}$	+4
-	Taxes (t) = $\text{EBIT} * t_c$	-32.2
-	CAPEX (t)	-25
=	FCFF (t)	+61.8
-	Net Interests (t)* $(1-t_c)$	
±	Debt (t)	
+	Share Capital (t)	
-	Dividends (t)	
=	FCFE (t)	

financial perspective
value of a company is capability of a company to create cash

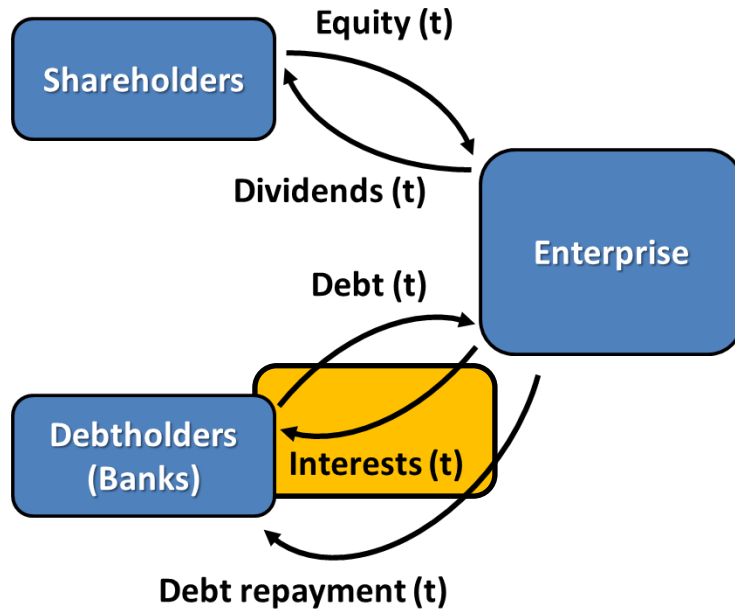
Equity Value (*Equity-Side*)

the ability to generate cash that is
available to shareholders. remaining value
for shareholder after paying the debts

all of them must be based on cash principle. if it's from IC, it must be adjusted
so take them from cash flow statement



Equity-Side = focus on shareholders

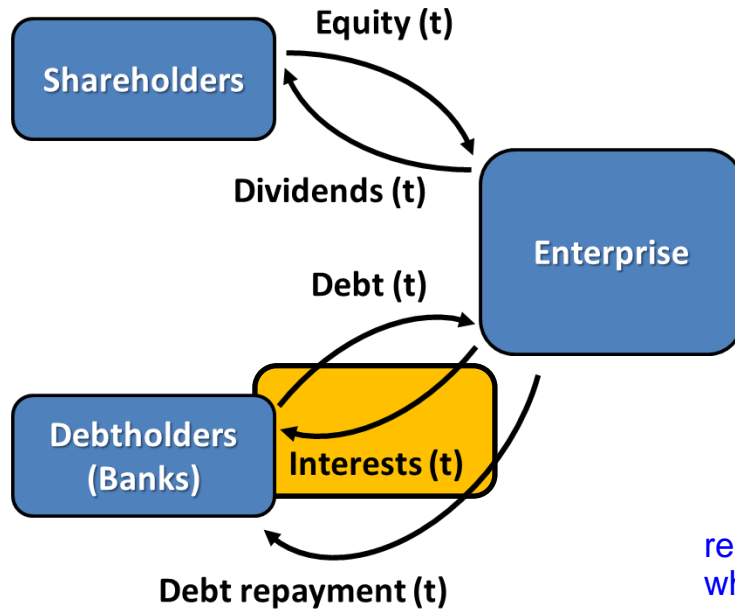


Cash generation (t) = ?

	FCFF (t)
-	Financial costs (t) <small>interest paid</small>
+	Financial cost (t) * t_c <small>reduce the ebit and reduce the taxes</small>
+	Financial income (t)
-	Financial income (t) * t_c <small>increasing ebit</small>

FCFF (t) must be adjusted taking into account financial activities (financial costs and financial income) and the variation of taxes

Equity-Side = focus on shareholders



Cash generation (t) = ?

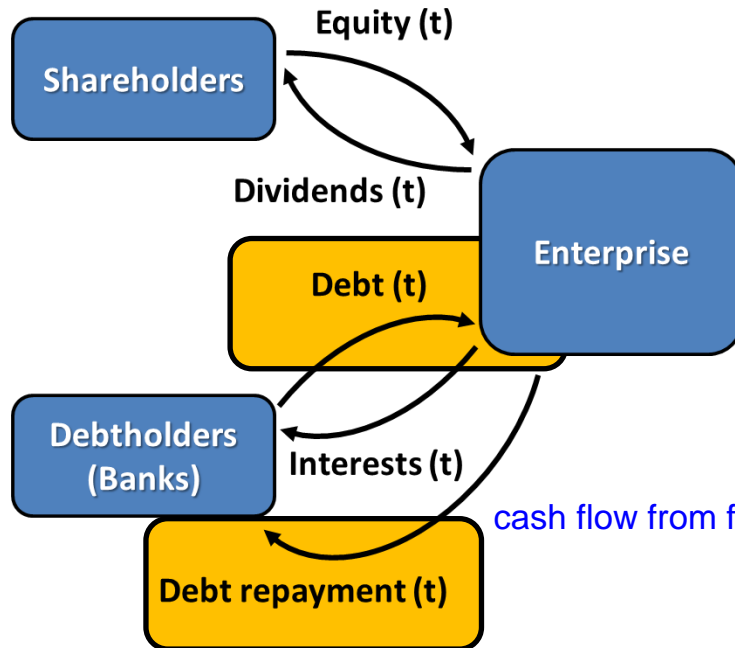
	FCFF (t)
-	Financial costs (t) * (1-t_c)
+	<i>Financial income (t) * (1-t_c)</i>

real life => manage financial cost and income from CFS
while the taxes are from the IS. numbers might be different

assumptions: financial income and cost in both reports are the same
if it was NOT the same, you can't use this page! previous page formula



Equity-Side = focus on shareholders



Cash generation (t) = ?

	FCFF (t)
	Operating cash flow (t) * (1-t_c)
-	Financial costs (t) * (1-t_c)
+	Financial income (t) * (1-t_c)
+	Debt (t)
-	Debt repayment (t)

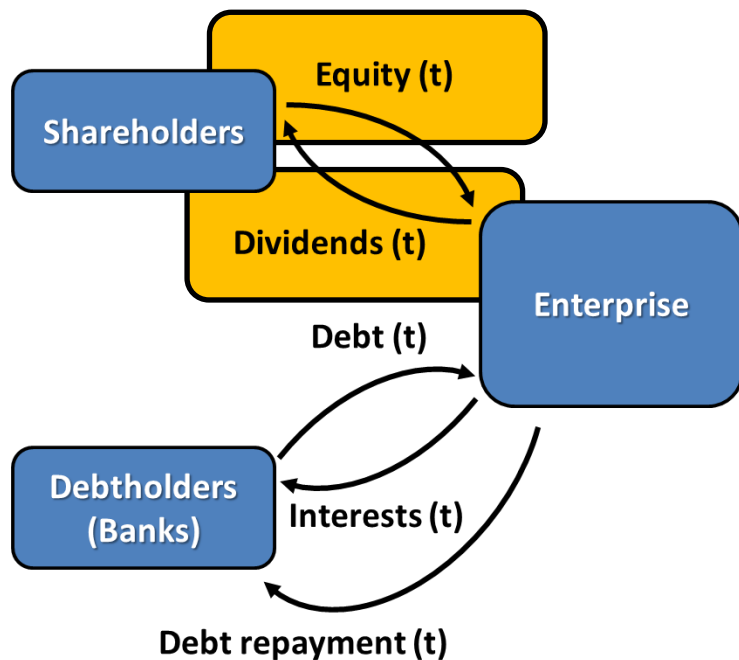
cashflow from operating activities is a false friend
operating activity VS operation

cash flow from financing activity

FCFF (t) must be adjusted taking into account the collection of new debts (t) and the repayment of current debts (t)



Equity-Side = focus on shareholders



Cash generation (t) = ?

	FCFF (t)
-	Financial costs (t) * (1-t _c)
+	<i>Financial income (t) * (1-t_c)</i>
+	Debt (t)
-	Debt repayment (t)
+	Share capital (t)
-	Dividends (t)

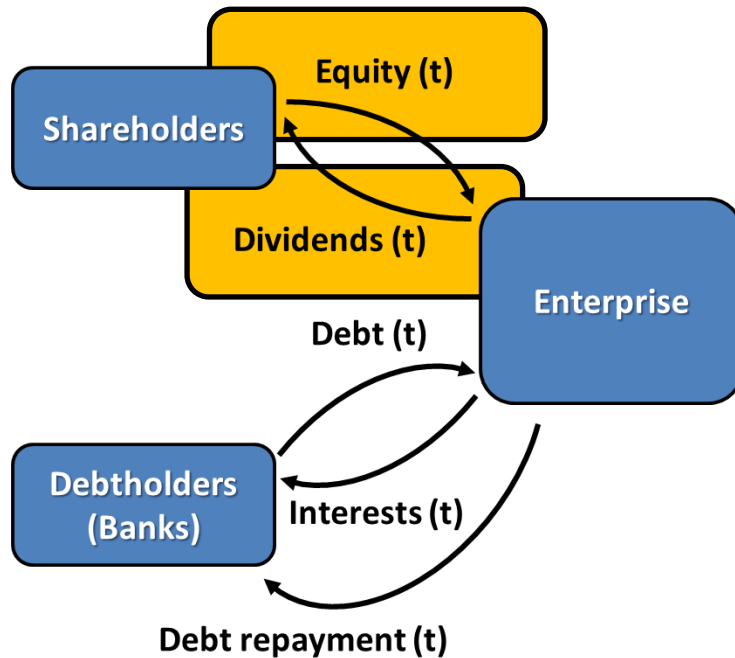
!

might not be generation so some books don't mention

FCFF (t) must be adjusted taking into account the collection of Equity (t) and the payment of dividends (t)

buyback = company pay to buy its share - using bank account

Free Cash Flow to Equity → FCFE (t)



Cash generation (t) = ?

FCFF (t) cash generated available fro enterprise

$$\begin{aligned}
 & - \text{Financial costs (t)} * (1 - t_c) \\
 & + \text{Financial income (t)} * (1 - t_c) \\
 & + \text{Debt (t)} \\
 & - \text{Debt repayment (t)} \\
 & + \text{Share capital (t)} \\
 & - \text{Dividends (t)} \\
 & = \text{FCFE (t)} \text{ free cash flow to equity available to shareholders increase dividends, reinvest}
 \end{aligned}$$

equity Value

$$E = \sum_{t=1}^{\infty} \frac{FCFE(t)}{(1 + ke)^t}$$

cost of equity

is value of the company. value of company is market capitalization. in teory these two are the same.
 perspective of shareholders market capitalization in real are different



Terminal Value for Equity Value

discounted

$$\sum_{t=1}^T \frac{FCFE(t)}{(1 + k_e)^t} + \frac{TV(T)}{(1 + k_e)^T}$$

equity value requires capability of predicts. so only the company can do so only. in the market, you are outside. you'll forecast is different. positive expectation will increase it or opposite

but EV is backbone of accounting. why? because we are obsessed with middle line managers.

they are related.

How to manage TV?

1. $TV = 0 \rightarrow$ This choice makes sense when T is long enough

2. $FCFE(t) = FCFE(T)$
when $t > T$

$$TV(T) = \frac{FCFE(T)}{k_e}$$

3. $FCFE(t+1) = FCFE(t) * (1+g)$
when $t > T$

$$TV(T) = \frac{FCFE(T) * (1 + g)}{k_e - g}$$

$g =$ yearly growth rate



Short case study

You want to evaluate the **Equity Value** of the company Sama.

You have just estimated the company P&L for next 3 years (Table 1).

Furthermore, you know that the company will do **capital expenditures** in 2015 (25 mln €), 2016 (33 mln €) and 2017 (36 mln €).

There will be **changes in the financial structure** (Table 2).

Cost of equity will be 14% (2015), 14.2% (2016), and 15.4% (2017).

Finally, you have **prospects of the NWC** for the next 3 years (Table 3).

After the period of analytical forecast, the FCFE are supposed to increase infinitely (**$g=3\%$**).

confusing because of accrual and cash perspective
look the vid



TABLE 1		ESTIMATIONS			
	P&L (data in mln euros)	2014	2015	2016	2017
	Revenue	235,0	210,0	230,0	240,0
	Operating cost (OpEx)	-102,0	-95,0	-125,0	-104,0
	EBITDA	133,0	115,0	105,0	136,0
	D&A	-21,0	-23,0	-29,0	-31,0
	EBIT	112,0	92,0	76,0	105,0
net financial cost	Financial revenues/expenses	-10,0	9,0	-10,0	-12,0
	EBT	102,0	101,0	66,0	93,0
	Income tax expenses	-35,7	-35,4	-23,1	-32,6
	Profit for the year	66,3	65,7	42,9	60,5

TABLE 2		ESTIMATIONS			
	Balance Sheet (data in mln euros)	2014	2015	2016	2017
	Debt	112	102	110	121
	<u>Shareholders</u> Equity	54	62	65	61
	Total equity and liabilities	166	164	175	182

No changes
in share capital

TABLE 3		ESTIMATIONS			
	(data in mln euros)	2014	2015	2016	2017
	Accounts Receivable	64	64	64	64
	Inventories	33	35	40	44
	Accounts Payable	35	41	39	41



Short case study – Solution (7)

		2015
	EBIT (t)	+92
+	D&A (t)	+23
-	$\Delta \text{NOWC (t - t-1)}$	+4
-	Taxes (t) = $\text{EBIT} * t_c$	-32.2
-	CAPEX (t)	-25
=	FCFF (t)	+61.8
-	Net Interests (t)* $(1-t_c)$	
±	Debt (t)	
+	Share Capital (t)	
-	Dividends (t)	
=	FCFE (t)	

Short case study – Solution (8)

		2015
	EBIT (t)	+92
+	D&A (t)	+23
-	$\Delta \text{NOWC (t - t-1)}$	+4
-	Taxes (t) = $\text{EBIT} * t_c$	-32.2
-	CAPEX (t)	-25
=	FCFF (t)	+61.8
-	Net Interests (t)* $(1-t_c)$	+5.9
±	Debt (t)	
+	Share Capital (t)	
-	Dividends (t)	
=	FCFE (t)	

P&L (data in mln euros)	2015
Revenue	210,0
Operating cost (OpEx)	-95,0
EBITDA	115,0
D&A	-23,0
EBIT	92,0
Financial revenues/expenses	9,0
EBT	101,0
Income tax expenses	-35,4
Profit for the year	65,7

$$t_c = \text{taxes}/\text{EBT} = 35.4/101 = 35\%$$

$$\text{Net interests} = -9 * (1 - 35\%) = -5.9$$

Short case study – Solution (9)

		2015
	EBIT (t)	+92
+	D&A (t)	+23
-	$\Delta \text{NOWC (t - t-1)}$	
-	Taxes (t) = EBIT * t_c	
-	CAPEX (t)	
=	FCFF (t)	+61.8
-	Net Interests (t)* $(1-t_c)$	+5.9
±	Debt (t)	-10
+	Share Capital (t)	
-	Dividends (t)	
=	FCFE (t)	

Balance Sheet	2014	2015
Debt	112	102
<u>Shareholders</u> Equity	54	62
<i>Total equity and liabilities</i>	<i>166</i>	<i>164</i>

No changes
in share capital

returned the money

Short case study – Solution (10)

		2015	
	EBIT (t)	+92	
+	D&A (t)	+23	
-	$\Delta \text{NOWC (t - t-1)}$		
-	Taxes (t) = $\text{EBIT} * t_c$		
-	CAPEX (t)		
=	FCFF (t)	+61.8	
-	Net Interests (t)* $(1-t_c)$	+5.9	
±	Debt (t)	-10	
+	Share Capital (t)	0	
-	Dividends (t)		
=	FCFE (t)		

Balance Sheet	2014	2015
Debt	112	102
<u>Shareholders</u> Equity	54	62
<i>Total equity and liabilities</i>	<i>166</i>	<i>164</i>

No changes in share capital

Short case study – Solution (11)

		2015
	EBIT (t)	+92
+	D&A (t)	+23
-	$\Delta \text{NOWC (t - t-1)}$	+4
-	Taxes (t) = $\text{EBIT} * t_c$	-32.2
-	CAPEX (t)	-25
=	FCFF (t)	+61.8
-	Net Interests (t)* $(1-t_c)$	+5.9
±	Debt (t)	-10
+	Share Capital (t)	0
-	Dividends (t)	0
=	FCFE (t)	

Short case study – Solution (12)

		2015
	EBIT (t)	92
+	D&A (t)	+23
-	$\Delta \text{NOWC (t - t-1)}$	+4
-	Taxes (t) = $\text{EBIT} * t_c$	-32,2
-	CAPEX (t)	-25
=	FCFF (t)	61.8
-	Net Interests (t)* $(1-t_c)$	+5.9
±	Debt (t)	-10
+	Share Capital (t)	0
-	Dividends (t)	0
=	FCFE (t)	57.7

Short case study – Solution (13)

		2015	2016	2017
	EBIT (t)	92	76	105
+	D&A (t)	+23	+29	+31
-	$\Delta \text{NOWC (t - t-1)}$	+4	-7	-2
-	Taxes (t) = $\text{EBIT} * t_c$	-32,2	-26.6	-36.8
-	CAPEX (t)	-25	-33	-36
=	FCFF (t)	61.8	38.4	61.3
-	Net Interests (t)* $(1-t_c)$	+5.9	-6.5	-7.8
±	Debt (t)	-10	+8	+11
+	Share Capital (t)	0	0	0
-	Dividends (t)	0	0	0
=	FCFE (t)	57.7	39.9	64.5

Short case study – Solution (14)

	2015	2016	2017
FCFE (t)	57.7	39.9	64.5
K_e (t)	14.0%	14.2%	15.4%

$$\sum_{t=1}^T \frac{FCFE(t)}{(1 + ke)^t} + \frac{TV(T)}{(1 + ke)^T}$$

$$E = \frac{57.7}{(1 + 14\%)^1} + \frac{39.9}{(1 + 14.2\%)^2} + \frac{64.5}{(1 + 15.4\%)^3} + \dots$$



Short case study – Solution (15)

$$TV(T) = \frac{FCFE(T) * (1 + g)}{k_e - g}$$

$$TV(3) = \frac{64.5 * (1 + 3\%)}{15.4\% - 3\%} = 534.4$$

$$E = \frac{57.7}{(1 + 14\%)^1} + \frac{39.9}{(1 + 14.2\%)^2} + \frac{64.5}{(1 + 15.4\%)^3} + \frac{534.4}{(1 + 15.4\%)^3}$$

$$E = 470.6 \text{ mln } \text{€}$$





The calculation of either EV or E can be carried out by ...

Subjects who are INSIDE the enterprise (e.g., CEO, CFO, C-levels, etc.)

Subjects who are OUTSIDE the enterprise (e.g., financial analysts, AFC professors, etc.)

Subjects who are both INSIDE and OUTSIDE the enterprise

This calculation is theoretical and no one is able to carry out it in real practice

I have no idea