

Net income or P&L:

Net income or P&L:

	\$ in million	Remarks
Net Sales	\$30	
COGS	\$(12)	e.g. raw material, ..
Gross Profit	\$18	

$$\text{gross margin} = \frac{\text{gross profit}}{\text{sales}} \times 100$$

Example. For every \$100 earned in gross margin, the firm earns \$60; If you compare to the competitors and its GM is greater then it could mean:

- The firm is getting **lower prices** from its suppliers
- The firm is selling its product(s) at a **higher price**

$$\text{gross margin} = \frac{18}{30} \times 100 = 60\%$$

	\$ in mi
Net Sales	\$30
COGS	\$(12)
Gross Profit	\$18
Operating expense (OpEX)	\$(4)
Operating profit	\$14

$$\text{operating margin} = \frac{\text{operating profit}}{\text{sales}} \times 100$$

Example. For every \$100 earned in operating margin, the firm earns \$46.67; If you compare to the competitors and its OM is greater then it could mean:

- The firm is better at managing its **spendings, rents, salaries**

$$\text{operating margin} = \frac{14}{30} \times 100 = 46.67\%$$

MARGINS RATIO

$$\text{Margin Ratio} = \frac{X}{\text{sales}} \times 100$$

Profitability ratios	Home Depot			Lowe's		
	2017	2018	2019	2017	2018	2019
Gross margin	34.0%	34.3%	34.1%	32.7%	32.1%	31.8%
Operating margin	14.5%	14.4%	14.4%	9.6%	5.6%	8.8%
Profit margin	8.6%	10.3%	10.2%	5.0%	3.2%	5.9%

$$\text{gross margin} = \frac{\text{gross profit}}{\text{sales}} \times 100$$

$$\text{operating margin} = \frac{\text{operating profit}}{\text{sales}} \times 100$$

$$\text{profit margin} = \frac{\text{Net income}}{\text{sales}} \times 100$$

We observe:

- A GM that is slightly higher for Home Depot that means they could have gotten lower price from their suppliers since they have more locations or they sell their product at a higher price
- The gap in OM of almost 5% is explained partly by the COGS and it could be explained by a lower rent.

Net income or P&L:

llion	Remarks	\$ in million	Remarks
0		Net Sales	\$30
2)	eg. raw material, ..	COGS	\$(12)
3		Gross Profit	\$18
)	eg. salary, rent, R&D spendings..	Operating expense (OpEX)	\$4
4		Operating profit	\$14
ating profit $\frac{sales}{sales} \times 100$...		
in operating margin, the firm earns competitors and its GM are the same mean:		Net income	\$2

ing its operating expenses, R&D
... than the other firm

$$\frac{1}{10} \times 100 = 46.67\%$$

$$\text{profit margin} = \frac{\text{Net income}}{\text{sales}} \times 100$$

Example. For every \$100 earned in profit margin, the firm earns \$6.67; if you compare to the competitors and its GM & OM are the same BUT PM is greater then it could mean:

- The firm is better cause they get more dividends less interest charges (frais financiers) ...

$$\text{profit margin} = \frac{2}{30} \times 100 = 6.67\%$$

Net income or P&L:

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0	Net Sales	\$30
2)	COGS	\$(12) eg. raw material, ..
3	Gross Profit	\$18
)	Operating expense (OpEX)	\$4 eg. salary, rent, R&D spendings..
4	Operating profit	\$14
ating profit $\frac{sales}{sales} \times 100$...	
00	Net income	\$2

$$\text{Liquidity Ratio} = \frac{X}{\text{current liabilities}} \times 100$$

What we aim is to measure the capability to pay our short term debt with the cash available within one year.

$$\text{current ratio} = \frac{\text{current assets}}{\text{current liabilities}} \times 100$$

If we would have to pay our short debt in current assets. The problem is that current assets include prepaid insurance, inventory which

$$\text{Quick ratio} = \frac{\text{cash & cash equivalents} + \text{short-term investments} + A/R}{\text{current liabilities}} \times 100$$

It measures the capability to pay only the most liquid of the current assets that can be converted into cash.

$$\text{cash ratio} = \frac{\text{cash & cash equivalents}}{\text{current liabilities}} \times 100$$

This is the most extreme ratio, we have cash but not a lot of companies have enough cash to pay for their liabilities.

	Home Depot			Lowe's		
	2017	2018	2019	2017	2018	2019
Liquidity ratios						
Current ratio	1.17	1.11	1.08	1.06	0.98	1.00
Quick ratio	0.34	0.22	0.23	0.06	0.05	0.00
Cash ratio	0.22	0.11	0.12	0.05	0.04	0.00
OCF to current liabilities	0.79	0.79	0.78	0.42	0.47	0.21
OCF to total liabilities	0.29	0.29	0.27	0.18	0.21	0.11

$$\text{Quick ratio} = \frac{\text{cash & cash equivalents} + \text{short-term investments} + A/R}{\text{current liabilities}} \times 100$$

$$\text{cash ratio} = \frac{\text{cash & cash equivalents}}{\text{current liabilities}} \times 100$$

$$\text{current ratio} = \frac{\text{current assets}}{\text{current liabilities}}$$

- Current ratio is close to one so nothing particular
- Quick ratio: it is very close to zero for Lowe's since their inventory is almost equal to their current asset. Which means they could be in trouble to pay their suppliers.

The Balance sheet - Snapshot of the wealth of the company at a time t

(Assets) Actif	(Liabilities and Equity) Passif
Fixed assets (Immobilisations): Tangible and intangible. Current assets: Inventories (Stocks) Accounts receivable (Créances clients) Cash (Disponibilités) short-term investments (treasury bonds, Money market account..)	Equity (Capitaux propres) Stocks Long term liabilities: Long term liabilities Current Liabilities: Debt due within one year Accounts payable (Comptes fournisseurs)
Total Assets	Total liabilities and equity

Liquid current assets are current assets that can be sold rapidly eg inventories & prepaid insurance are illiquid

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Total Assets	Total liabilities and equity

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assets include too many things.
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It gives you the proportion of assets that are financed by debt; debt = total liabilities

$$\text{debt ratio} = \frac{\text{total debt}}{\text{total assets}} \times 100$$

The proportion of assets financed by long-term debt

$$\text{long term debt to assets ratio} = \frac{\text{long-term debt}}{\text{total assets}} \times 100$$

A high debt to equity ratio means the firm relies heavily on debt rather than equity for financing

$$\text{debt to equity ratio} = \frac{\text{total liabilities}}{\text{total stockholder's equity}} \times 100$$

Net income or P&L:

Coverage ratio: The coverage ratio tells you, maybe the company has a lot of debt, but how likely are they to not pay the interest charges

$$\text{interest coverage ratio} = \frac{\text{EBIT}}{\text{interest expense}} \times 100$$

<https://the-big-win.com/interest-coverage-ratio>

It tells you how many times the company could use its profit to pay its interest.
The higher the ICR, the more cushion the firm has for paying interest.

Example. With a ratio of 4.7 it says that the firm could pay 4.7 times its expenses before the EBIT

$$\text{interest coverage ratio} = \frac{14}{3} \times 100 = 4.7$$

Covenants: when company lends money "covenants" they do an agreement that restrict to put a limit on debt, let's say the ratio is 5, the covenant says if it exceeds 7 we restrict you.

Example. for example let's say a business owner secures a commercial loan from a lender. One of the covenants (clause de sauvegarde) the lender (prêteur) requires is that the business owner maintains a minimum interest coverage ratio. During the loan term, the business must maintain a minimum interest coverage ratio of at least 2. If the business owner fails to maintain this requirement, the covenant is violated and the lender has the right to call the loan (=rembourser le prêt immédiatement)

Call loan = prêt à vue ; c'est un prêt pour lequel le prêteur ou prêteuse peut exiger le remboursement complet à tout moment.

The BalanceNet income or P&L:

\$ in million Remarks

(Assets)

Fixed assets (Inventories)
Tangible and intangible assets

Current assets:

Inventories (Stock)
Accounts receivable
Cash (Disponibilité)
short-term investments
bonds, Money market funds

Total

Net income or P&L:

Net Sales

COGS

Gross Profit

Operating expenses
(OpEx)

Operating Income
(EBIT)

Other income
(expenses)

Net income

Fixed assets (Inventories)
Tangible and intangible assets

sheet - Snapshot of the wealth of the company at a time t

Assets) Actif	(Liabilities and Equity) Passif
<u>mobilisations):</u> angible.	Equity (Capitaux propres) Stocks
ks) able (Créances clients) tés) ments (treasury arket account..)	Long term liabilities: Long term liabilities Current Liabilities: Debt due within one year Accounts payable (Comptes fournisseurs)
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	\$ in million	Remarks
Sales	\$30	
GS	\$(12)	eg. raw material, ..
Profit	\$18	
Expense (K)	\$(4)	eg. salary, rent, R&D spendings..
profit)	\$14	
comes (uses)	\$(3)	eg. interest charges/expenses (frais financiers)
me	\$2	

sheet - Snapshot of the wealth of the company at a time t

Assets) Actif	(Liabilities and Equity) Passif
<u>mobilisations):</u> angible.	Equity (Capitaux propres) Stocks

Measures a company's ability to generate sales from assets. C'est-à-dire qu'on veut mesurer la capacité de l'investissement en stock ou achat d'équipements/machines à générer des ventes.

Si les revenus de votre entreprise s'élèvent à 100k\$ et que son actif total est de 50k\$ le ratio sera de 2. Autrement dit vos activités génèrent deux dollars en revenus pour chaque dollar investi dans vos actifs.

Current assets:		
Inventories (Stock)	\$ 100	
Accounts receivable	\$ 50	
Cash (Disponibilité)	\$ 20	
short-term investments	\$ 10	
bonds, Money market	\$ 5	
Total	\$ 185	

measures how many times a company's inventory is sold over a given period

	\$ in million	Remarks
Net Sales	\$30	
COGS	\$(12)	eg. raw material, ..
Gross Profit	\$18	

$$\text{inventory turnover (rotation des stocks)} = \frac{\text{COGS}}{\text{average inventory}} \rightarrow \text{DSI} = \frac{365}{\text{inventory turnover}}$$

days to sell inventory
days it takes to

The average inventory is eg firm ABC over the course of one year has a beginning inventory of \$20k and an ending inventory of \$18k. So the average inventory is \$19k

Accounts receivable (= les créances). measures how many times a company can turn receivables into cash over a given period

$$\text{A/R turnover} = \frac{\text{net credit sales}}{\text{average account receivable}}$$

$$\rightarrow \text{DSO} = \frac{365}{\text{A/R turnover}}$$

days sales outstanding (DSO)
days it takes to collect

Eg (net credit sales). The boat firm (ABC) generated \$100k of credit sales. Of this amount, customer paid \$20k in cash for new boats. ABC issued a refund of \$5k to a customer who returned a boat, and also granted a sales allowance of \$1k to a customer in exchange for not returning a bot having a faulty paint job. Therfore its net credit sales were:

Three types:

- rabais (sales allowance): réduction opportuniste
- remise: volume d'achat important
- ristourne: récompenser un client fidèle

This ratio is an indicator of the company's ability to efficiently collect accounts receivable and the rate at which their customer pay off their debt.

net credit sales = sales on credit - sales returns - sales allowances

\$100k gross sales - \$20k cash sales - \$5k sales returns - \$1k sales allowances

sales on credit = is revenue earned by a company when it sells goods and allow the buyer to pay at a later date

Two types:

- net credit sales: business allow customer to pay at a later date -> income statement in sales
- average account receivable: total amount that the customers are owed to pay for the organization. -> short term asset

<https://corporatefinanceinstitute.com/resources/accounting/accounts-receivable/>

Measures how many times a company pays its suppliers during a given period

$$\text{A/P turnover} = \frac{\text{purchases from suppliers on credit}}{\text{average account payable}}$$

$$\rightarrow \text{DPO} = \frac{365}{\text{A/P turnover}}$$

The number of days it takes to pay suppliers

account payable: debts to creditor = comptes fournisseurs, comptes créditeurs = toutes les dettes fournisseurs non payés

the book value represents how much a company would have left in assets if it went out of business today.

cks) able (Créances clients) tés) ments (treasury arket account..)	Long term liabilities: Long term liabilities
	Current Liabilities: Debt due within one year Accounts payable (Comptes fournisseurs)
Total Assets	Total liabilities and equity

(DSI). The number of days to sell inventory

accounts
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DSO). the number of days receivable.

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allowances

variable-turnover-ratio/

kes to pay the

$$\text{asset turnover (rotation de l'actif)} = \frac{\text{net sales}}{\text{average total assets}}$$



Working capital measure	Formula
days to sell inventory (DSI)	$\frac{365}{\text{inventory turnover}}$
days sales outstanding (DSO)	$\frac{365}{\text{A/R turnover}}$
days payable outstanding (DPO)	$\frac{365}{\text{A/P turnover}}$
operating cycle	$\text{DSI} + \text{DSO}$
cash conversion cycle	$\text{DSI} + \text{DSO} - \text{DPO}$

days needed to finance inventory = days financing

For the year ended 12/31/20	Kimberly-Clark	Colgate-Palmolive
Asset turnover	1.17	1.06
Fixed asset turnover	2.47	4.41
A/R turnover	8.51	12.18
Inventory turnover	6.67	4.20
A/P turnover	3.89	5.12
For the year ended 12/31/20	Kimberly-Clark	Colgate-Palmolive
Days sales outstanding (DSO)	43	30
Days to sell inventory (DSI)	55	87
Days payable outstanding (DPO)	94	71
Operating cycle (DSI + DSO)	98	117
Cash conversion cycle (DSI + DSO - DPO)	4	46

We want B/M >1 cause if the shareholder equity is the book value aka the stockholder's equity so the amount of money if all the asset are liquidated

Description
The number of days it takes to sell inventory
The number of days it takes to collect receivables
The number of days it takes to pay suppliers
The number of days it takes to convert inventory to cash
This is similar to the operating cycle, except it accounts for the fact that the company doesn't have to pay cash for the inventory upfront; suppliers are financing some of the inventory
days payable outstanding + days required by suppliers + days requiring other financing
cash conversion cycle

ACTIVITY RATIOS (EFFICIENCY RATIOS)		
Ratio	Formula	Description
asset turnover	$\frac{\text{net sales}}{\text{average total assets}}$	Measures a company's ability to generate sales from assets
accounts receivable turnover	$\frac{\text{net credit sales}}{\text{average accounts receivable}}$	Measures how many times a company can turn receivables into cash over a given period
inventory turnover	$\frac{\text{cost of goods sold}}{\text{average inventory}}$	Measures how many times a company's inventory is sold over a given period
fixed asset turnover	$\frac{\text{net sales}}{\text{average PP&E (net of accumulated depreciation)}}$	Measures a company's ability to generate sales from property, plant, and equipment
accounts payable turnover	$\frac{\text{purchases from suppliers on credit}}{\text{average accounts payable}}$	Measures how many times a company pays its suppliers during a given period

Here Kimberly makes paper towels and sell to wallmart it takes 55 days to sell the inventory and 43 to collect the cash from wallmart so 98 is the operating cycle.

However the DPO is 94 so the provider provides all the financing they don't have to pay the suppliers for 94 days they have to cover only 4 days. So they borrow for 4 days

This expresses the company's market value as a multiple of its stockholder's equity

Book to market ratio

$$M/B \text{ ratio} = \frac{\text{market cap}}{\text{book value of equity}}$$

$$B/M \text{ ratio} = \frac{\text{common shareholder equity}}{\text{market cap}}$$

Price earning ratio. This expresses a company's share price as a multiple of its earnings per share

	EPS	$S_{01.07.2021}$	P/E	Catego
Bouygues	2.95	28.82	9.8	value s
Vinci	4.51	85.85	19.0	growth
Kaufman	2.03	25.85	12.7	value s
average			13.8	

$$P/E \text{ ratio} = \frac{\text{stock price}}{\text{earning per share}} = \frac{\text{market cap}}{\text{net income}}$$

Le EPS de Eiffage en 2021 est 7.98

On peut donc calculer sa valorisation

$$V = 13.8 \times 7.98 \approx 110.$$

P/E ratio: $30/2 = 15$, so the company trades at 15x earning so it cost 15\$ to buy 1\$ of earning. ; P/E=87 you have 87\$ for 1\$ of earning. So why we don't buy companies with low P/E ratio they are value stocks. ; the very high P/E it is expected the company will grow that's why the ratio is high people say i pay 70\$ for a 1\$ earning but expect earning to be much higher.

On en conclut que Eiffage était sous coté rapport aux entreprises similaires donc

earning per share: this expresses net income available to common shareholder on a per-share basis

$$EPS = \frac{\text{net income} - \text{preferred dividends}}{\text{common shares outstanding}}$$

Earning Per Share (Bénéfice par action): on note que Earnings et Net income sont utilisés interchangeablement.

Common shares outstanding = nombre total d'actions

L'EPS montre la quantité de résultat net que peut générer une action. Il peut prendre plusieurs valeurs:

- EPS > 0: c'est le signe d'une entreprise rentable i.e. qu'elle dégage des bénéfices (résultat net positif).
- EPS < 0 signifie que l'entreprise ne présente pas une activité globale rentable. Cependant, il faut regarder les indicateurs plus en profondeur, par exemple généralement < 0

De plus deux scénarios:

- Si au cours du temps l'EPS ne fait que augmenter cela va attirer des investisseurs, pouvant impacter le cours à la hausse
- Si le cours ne fait que fluctuer ou fait que baisser peut inciter les investisseurs à vendre leurs actions ce qui pourra faire baisser le prix de l'action.

price to earning growth ratio: adjusts a company's P/E ratio by its earnings growth to make it easier to compare which of two companies is a better value

to account for growth, cause if we use P/E ratio only not to take into account the growth

P/E ratio divide by the EPS growth, expected future growth is used to control for the expected growth if it has high expected growth then the PEG ratio is high. If the PEG ratio is 1 it means the company is fairly valued but if it is lower than 1 it is undervalued

$$PEG = \frac{\text{P/E Ratio}}{\text{EPS growth}}$$

$$\text{EPS growth} = \frac{EPS_t - EPS_{t-1}}{EPS_{t-1}} \times 100$$

Market to book ratio

Dividend yield

P/E ratio (TTM)

PEG (5-year)

Expected 5-year annual EPS growth (%)

	S_t	EPS_{t-1}	EPS_t	EPS growth (%)	P/E	PEG ratio
Co A	25.0	1.4	1.5	11.1	16.7x	1.5x
Co B	22.0	1.1	1.2	18.18	17.7x	1.0x

and all asset are sold and debt are paid; this is the amount that the shareholder would get; this company is then a bargain cause theoretically all the values of the asset after paying all the debts it is higher than the market value.

If the ratio is > 1 then the stock is undervalued it indicates that the stock price of a company is trading for less than the worth of its assets. A high ratio means that this is a value stock

if the ratio is < 1 then the stock is considered overvalued, this indicates that the company has healthy future profit projections. Tech companies and other that do not have a lot of physical assets tend to have a low-book to market ratio.

- Value stock (sous-côté). [e.g. Bank, Warner Bros..] valeur très basse dont on espère une monté e.g. P/E = 1/10=0.1 c'est une market cap très faible par rapport à sa valorisation boursière
- Growth stock (sur-côté) [e.g. Amazon, Apple.. Tech companies] valeur déjà haute dont on espère qu'elle va continuer à monter e.g. P/E=10/1 = 10,

98 euros;

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il faut l'acheter

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Limites de l'EPS: l'effet buyback sur l'EPS: une entreprise a toujours la possibilité de racheter ses propres actions ce qui aura pour effet de diminuer son nombre total d'actions. Ce qui peut faire augmenter artificiellement l'EPS alors que le net income reste stable.

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enough, we can use the PEG ratio

th, of earning per share ; by dividing now we growth. the lower the PEG the better the company the higher it is like 13 it means it is undervalued..

Amazon	Walmart
15.9	4.6
N/A	1.55%
62.02	33.10
1.62	4.67
38.3	7.1

Dividend yield: how much the company pays in dividends relative to its stock price

$$\text{Dividend yield} = \frac{\text{dividend per share}}{\text{stock price}}$$

Net income or P&L:

\$ in million

Net Sales	\$30
COGS	\$(12)
Gross Profit	\$18
Operating expense (OpEX)	\$(4)
Operating profit (EBIT)	\$14
Other incomes (expenses)	\$(3)
Net income (Résultat net)	\$2

on

Remarks

eg. raw material,

..

eg. salary, rent, R&D
spendings..

eg. interest
charges/expenses
(frais financiers)

Co B | 23.0 1.1 1.3 18.18

17.7x 1.0x

TTM = trailing twelve month =

P/E = high for amazon investor expect more growth than walmart

expect 5 year is 38.3 for amazon that's what people expect maybe it's not going to happen; here the PEG ratio is > for both, they are both overvalued it means that the stock price is higher than its intrinsic value. Walmart appears even if it has lower P/E when you account for the expected growth, Walmart appears more overvalued than Amazon.

now if you are thinking of I want income now, like you are retired u want income now, u look at dividend yield, but for Amazon do not pay dividend; for Walmart calculate it has \$2.20 a share / stock price of \$142.17. So it means that if you buy Walmart at 142.17 and the stock price did not change and u hold it for 5 years, you will get a return of 1.55%

ROE = important for valuation of a company; equity multiplier = is a measure of leverage;

profit margin & asset turnover evaluate its business performance/ business operation, managing expenses, ... how are they doing to bring some sales,

whereas equity multiplier it measures the leverage and the company's financing decision. so a company can increase ROE by increasing its profit margin aka improving their expenses; or finding a way to getting more sales from asset like asset turnover; or taking more leverage for the last one. The leverage is when times are good a company can do well by increasing a leverage. if times are great the company does very well they say they get a 10% return on the money you give, you can borrow at 3%. So you can borrow at 3% to get 10% return.

The downside is when times are bad, you have to pay the interest

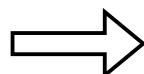
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ROA is useful since it helps us comparing the profitability of two companies of different sizes.. Eg we cannot say company A has more net income than company B maybe company A is a lot larger than company B. that is why we divide by average assets.

$$\text{ROAA} = \frac{\text{net income}}{\text{average assets}} = \underbrace{\frac{\text{net income}}{\text{net sales}}}_{\text{profit margin (marge bénéficiaire)}} \times \underbrace{\frac{\text{net sales}}{\text{average assets}}}_{\text{asset turnover (rotation de l'actif)}}$$

Le ROAA (taux de rendement moyen de l'actif) permet de mesurer comment la firme utilise efficacement ses capitaux propres pour générer des profits



(décomposition)

le PM nous donne le pourcentage du chiffre d'affaires après avoir couvert ses coûts.
Eg. 20% (permet de mesurer la gestion des coûts de la firme)

- × Pour une AT=2.31, ça signifie que pour chaque 1\$ investis dans l'actif (machine, stock..) on gagne 2.31\$ (permet de mesurer si la firme génère des profits en fonction de ses actifs)

	$t - 1$	t	
total assets	5k	15k	$\Rightarrow ROAA = \frac{\$1k}{\left(\frac{\$5k + \$15k}{2}\right)} = 10\%$
net income	ϕ	1k	

Decomposing ROA	Home Depot				Lowe's			
	2016	2017	2018	2019	2016	2017	2018	2019
Fiscal Year	2016	2017	2018	2019	2016	2017	2018	2019
Asset turnover (net sales / average total assets)	2.23	2.31	2.44	2.31	1.98	1.97	2.04	1.95
Profit margin (net income / net sales)	8.4%	8.6%	10.3%	10.2%	4.8%	5.0%	3.2%	5.9%
ROA (asset turnover x profit margin)	18.7%	19.7%	25.1%	23.6%	9.4%	9.9%	6.6%	11.6%

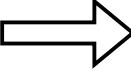
here we see home depot has a higher in profit margin and asset turnover in 2019, which explains the 23.6% of ROA. It is because they get 2.31\$ of sales for 1\$ of assets whereas a bit less than 2\$ for lowe's

	UPS			FedEx		
	2018	2019	2020	2018	2019	2020

$$\underbrace{\text{ROE}}_{\text{return on equity}} = \frac{\text{net income}}{\text{average equity}} = \frac{\frac{\text{avg assets}}{\text{avg equity}}}{\text{equity multiplier}} \times \frac{\text{net income}}{\frac{\text{net sales}}{\text{profit margin}}} \times \frac{\text{net sales}}{\frac{\text{average assets}}{\text{asset turnover}}}$$

(multiplicateur de fonds propres) (marge bénéficiaire) (rotation de l'actif)

Le ROAA (taux de rendement moyen de l'actif) permet de mesurer comment la firme utilise efficacement ses capitaux propres pour générer des profits

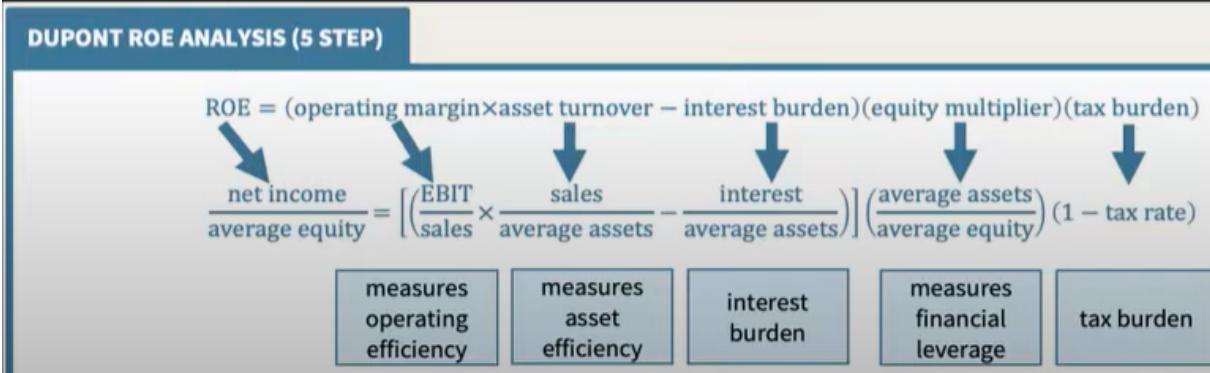

 Firm ABC has \$10m in assets et \$2m in equity: donc EM=10/2=5; Ainsi l'entreprise utilise 20% des actifs et 80% de dettes pour financer l'entreprise; mesure du leverage

le PM nous donne le pourcentage du chiffre d'affaires après avoir couvert ses coûts. Eg. 20% (permet de mesurer la gestion des coûts de la firme)

	$t - 1$	t
total assets	5k	15k
net income	ϕ	1k

$$\Rightarrow ROAA = \frac{\$1k}{(\frac{\$5k + \$15k}{2})} = 10\%$$

Critiques: recall that with the 3 step analysis: profit margin & asset turnover are measure of the operating performance measure; and the equity is the financing decision of the company. Now technically if we want to isolate the company's decision, vs equity we have an issue cause the profit margin in the 3step has a pb cause the net income is after deducting the finance expense; which depends on the financing. So to completely isolate the effect of any financing decision that the company made we can do a 5 step dupont analysis.



Pour une AT=2.31, ça signifie que pour chaque 1\$ investis dans l'actif (machine, stock..) on gagne 2.31\$ (permet de mesurer si la firme génère des profits en fonction de ses actifs)

Interest burden tells you to which extent do interest expense impacts profits

Firm ABC has \$10m in assets et \$2m in equity: donc EM=10/2=5; Ainsi l'entreprise utilise 20% des actifs et 80% de dettes pour financer l'entreprise; mesure du leverage

With a h can keep profit i rate. W time

in the 5 we take: now we don't use net income; the whole Left formula ; we multiply by equity multiplier and the effect of tax aka company tax expense / EBT. The difference of the 3 step is that we isolate .

ROE	236.0%	140.5%	68.0%	25.8%	2.9%	7.1%
Profit margin	6.7%	6.0%	1.6%	7.0%	0.8%	1.9%
Asset turnover	1.50	1.37	1.41	1.30	1.31	1.08
Equity multiplier	23.54	17.07	30.43	2.84	2.87	3.55

we compare UPS and FedEX, fiscal year ends at different date so it is not an exact comparison.

ROE = UPS is higher like astronomical ROE of 236%

notice a trend ROE is declined for each of those companies to understand why we look at its elements:

Pour une AT=2.31, ça signifie que pour chaque 1\$ investis dans l'actif (machine, stock..) on gagne 2.31\$ (permet de mesurer si la firme génère des profits en fonction de ses actifs)

- for UPS profit margin is down considerably ; FedX also significant decline in PM maybe because of increase of fuel cost or ..
- asset turnover: UPS not much of a change it is lower in 2020, and Fedex a bit more of a decrease but it doesn't seem that this is the main reason of decline ROE
- equity multiplier: the leverage is a bit higher it doesn't mean the company borrowed more money maybe their equity decrease their stockholder equity decrease so the balance go more toward debt, either way the company will be more leveraged.

the takeaway, those trends are not good for both companies, on operating performance (2 first ratio) the trends is not good, they are not going bankrupt but the sharp decrease in profit margin is a problem you want to dig in

high value a company
to a high % of its pretax
indicating a lower tax
we want to look across
if this ratio reduces

	UPS			Fed	
	2018	2019	2020	2018	2019
ROE	236.0%	140.5%	68.0%	25.8%	2.9%
EBIT margin	9.2%	8.5%	3.0%	7.5%	1.8%
Asset turnover	1.50	1.37	1.41	1.30	1.31
Interest burden	1.3%	1.2%	1.2%	1.1%	1.1%
Equity multiplier	23.54	17.07	30.43	2.84	2.87
Tax burden	79.6%	78.6%	72.8%	105.0%	82.0%

dEx	
19	2020
9%	7.1%
3%	3.4%
31	1.08
1%	1.1%
37	3.55
4%	77.1%

Recall ROE declined significantly is because they have small equity. We look at why this is declining,

look intesrer burden did not change

tax burden: here a high number is very important, when >100% it means tax refund situation. FedEx increase their tax expense over time; for UPS it is always the same

In terms of leverage equity multiplier there was an increase. Remember leverage can go up it doesn't mean the company is leveraging money it can be the equity is going down.

Asset turnover move a bt

But the EBIT margin went down considerably for UPS and also FedEx, so there are serious pb they both are profitable but when we think of why there was a drop in ROE for each company it was driven by the decline in margins. Even after isolating the effects

