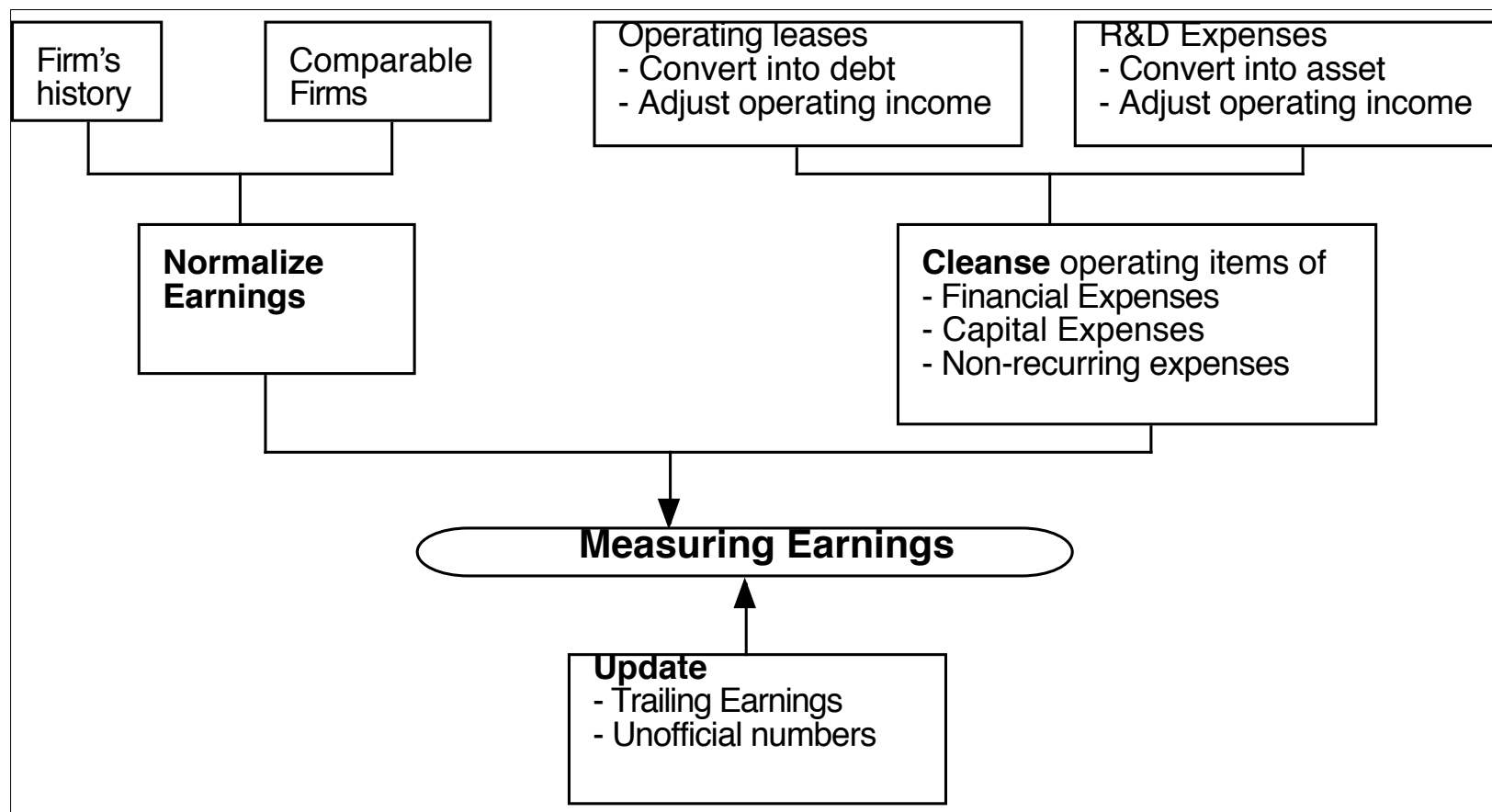


## From Reported to Actual Earnings



## I. Update Earnings

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- When valuing companies, we often depend upon financial statements for inputs on earnings and assets. Annual reports are often outdated and can be updated by using-
  - Trailing 12-month data, constructed from quarterly earnings reports.
  - Informal and unofficial news reports, if quarterly reports are unavailable.
- Updating makes the most difference for smaller and more volatile firms, as well as for firms that have undergone significant restructuring.
- *Time saver:* To get a trailing 12-month number, all you need is one 10K and one 10Q (example third quarter). Use the Year to date numbers from the 10Q:  
$$\text{Trailing 12-month Revenue} = \text{Revenues (in last 10K)} - \text{Revenues from first 3 quarters of last year} + \text{Revenues from first 3 quarters of this year.}$$

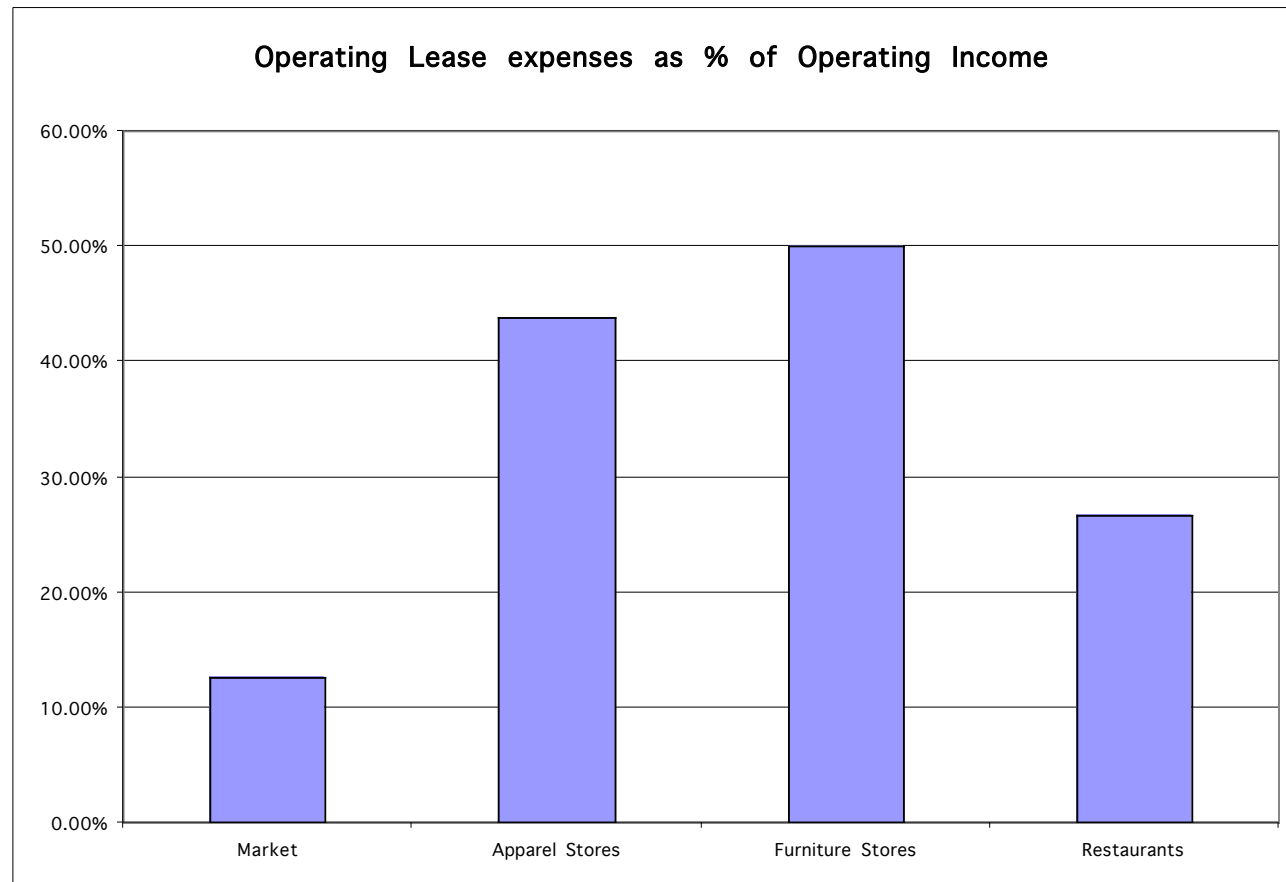
## II. Correcting Accounting Earnings

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- Make sure that there are no financial expenses mixed in with operating expenses
  - *Financial expense*: Any commitment that is tax deductible that you have to meet no matter what your operating results: Failure to meet it leads to loss of control of the business.
  - *Example: Operating Leases*: While accounting convention treats operating leases as operating expenses, they are really financial expenses and need to be reclassified as such. This has no effect on equity earnings but does change the operating earnings
- Make sure that there are no capital expenses mixed in with the operating expenses
  - *Capital expense*: Any expense that is expected to generate benefits over multiple periods.
  - *R & D Adjustment*: Since R&D is a capital expenditure (rather than an operating expense), the operating income has to be adjusted to reflect its treatment.

# The Magnitude of Operating Leases

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## Dealing with Operating Lease Expenses

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- Operating Lease Expenses are treated as operating expenses in computing operating income. In reality, operating lease expenses should be treated as financing expenses, with the following adjustments to earnings and capital:
- Debt Value of Operating Leases = Present value of Operating Lease Commitments at the pre-tax cost of debt
- When you convert operating leases into debt, you also create an asset to counter it of exactly the same value.
- Adjusted Operating Earnings
  - Adjusted Operating Earnings = Operating Earnings + Operating Lease Expenses - Depreciation on Leased Asset
  - As an approximation, this works:  
Adjusted Operating Earnings = Operating Earnings + Pre-tax cost of Debt \* PV of Operating Leases.

## Operating Leases at The Gap in 2003

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- The Gap has conventional debt of about \$ 1.97 billion on its balance sheet and its pre-tax cost of debt is about 6%. Its operating lease payments in the 2003 were \$978 million and its commitments for the future are below:

Year	Commitment (millions)	Present Value (at 6%)
1	\$899.00	\$848.11
2	\$846.00	\$752.94
3	\$738.00	\$619.64
4	\$598.00	\$473.67
5	\$477.00	\$356.44
6&7	\$982.50 each year	\$1,346.04
Debt Value of leases =		\$4,396.85 (Also value of leased asset)

- Debt outstanding at The Gap = \$1,970 m + \$4,397 m = \$6,367 m
- Adjusted Operating Income = Stated OI + OL exp this year - Deprec' n  
= \$1,012 m + 978 m - 4397 m /7 = \$1,362 million (7 year life for assets)
- Approximate OI = \$1,012 m + \$ 4397 m (.06) = \$1,276 m

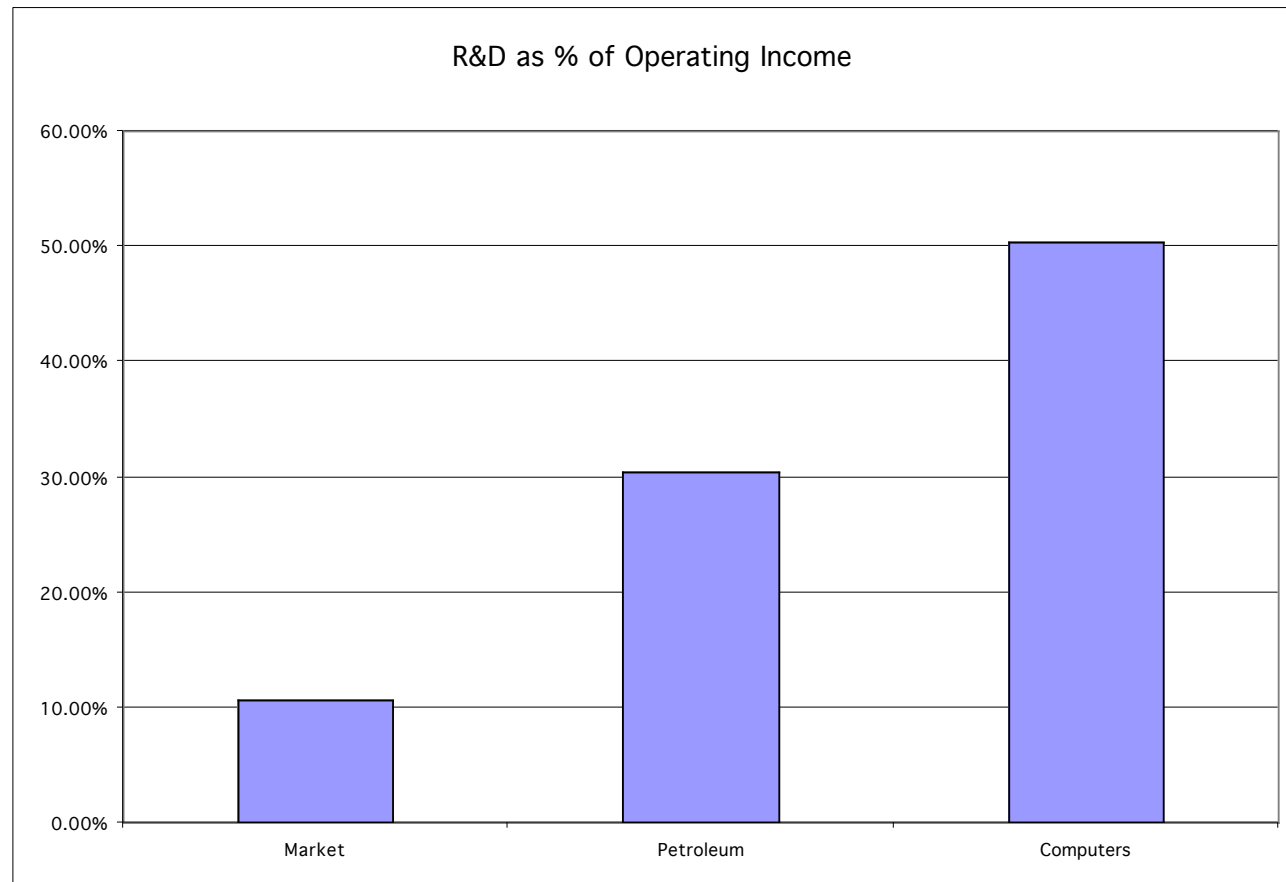
## The Collateral Effects of Treating Operating Leases as Debt

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<i>Conventional Accounting</i>	<i>Operating Leases Treated as Debt</i>				
<p><i>Income Statement</i></p> <p style="margin-left: 40px;">EBIT &amp; Leases = 1,990</p> <p style="margin-left: 40px;">- Op Leases = 978</p> <p style="margin-left: 40px;">EBIT = 1,012</p>	<p><i>Income Statement</i></p> <p style="margin-left: 40px;">EBIT &amp; Leases = 1,990</p> <p style="margin-left: 40px;">- Deprecn: OL = 628</p> <p style="margin-left: 40px;">EBIT = 1,362</p> <p>Interest expense will rise to reflect the conversion of operating leases as debt. Net income should not change.</p>				
<p><i>Balance Sheet</i></p> <p>Off balance sheet (Not shown as debt or as an asset). Only the conventional debt of \$1,970 million shows up on balance sheet</p>	<p><i>Balance Sheet</i></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; text-align: center;">Asset</td> <td style="width: 50%; text-align: center;">Liability</td> </tr> <tr> <td style="text-align: center;">OL Asset 4397</td> <td style="text-align: center;">OL Debt 4397</td> </tr> </table> <p>Total debt = 4397 + 1970 = \$6,367 million</p>	Asset	Liability	OL Asset 4397	OL Debt 4397
Asset	Liability				
OL Asset 4397	OL Debt 4397				
<p>Cost of capital = 8.20%(7350/9320) + 4%(1970/9320) = 7.31%</p> <p style="margin-left: 40px;">Cost of equity for The Gap = 8.20%</p> <p style="margin-left: 40px;">After-tax cost of debt = 4%</p> <p style="margin-left: 40px;">Market value of equity = 7350</p>	<p>Cost of capital = 8.20%(7350/13717) + 4%(6367/13717) = 6.25%</p>				
<p>Return on capital = 1012 (1-.35)/(3130+1970) = 12.90%</p>	<p>Return on capital = 1362 (1-.35)/(3130+6367) = 9.30%</p>				

# The Magnitude of R&D Expenses

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## R&D Expenses: Operating or Capital Expenses

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- Accounting standards require us to consider R&D as an operating expense even though it is designed to generate future growth. It is more logical to treat it as capital expenditures.
- To capitalize R&D,
  - Specify an amortizable life for R&D (2 - 10 years)
  - Collect past R&D expenses for as long as the amortizable life
  - Sum up the unamortized R&D over the period. (Thus, if the amortizable life is 5 years, the research asset can be obtained by adding up 1/5th of the R&D expense from five years ago, 2/5th of the R&D expense from four years ago...:

## Capitalizing R&D Expenses: SAP

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- R & D was assumed to have a 5-year life.

<i>Year</i>	<i>R&amp;D Expense</i>	<i>Unamortized portion</i>	<i>Amortization this year</i>
Current	1020.02	1.00	1020.02
-1	993.99	0.80	€ 198.80
-2	909.39	0.60	€ 181.88
-3	898.25	0.40	€ 179.65
-4	969.38	0.20	€ 193.88
-5	744.67	0.00	€ 148.93

Value of research asset = € 2,914 million

Amortization of research asset in 2004 = € 903 million

Increase in Operating Income = 1020 - 903 = € 117 million

## The Effect of Capitalizing R&D at SAP

<i>Conventional Accounting</i>	<i>R&amp;D treated as capital expenditure</i>						
<p><i>Income Statement</i></p> <p>EBIT&amp; R&amp;D = 3045                      - R&amp;D = 1020                      EBIT = 2025                      EBIT (1-t) = 1285 m</p>	<p><i>Income Statement</i></p> <p>EBIT&amp; R&amp;D = 3045                      - Amort: R&amp;D = 903                      EBIT = 2142 (Increase of 117 m)                      EBIT (1-t) = 1359 m                      Ignored tax benefit = (1020-903)(.3654) = 43                      Adjusted EBIT (1-t) = 1359+43 = 1402 m                      (Increase of 117 million)                      Net Income will also increase by 117 million</p>						
<p><i>Balance Sheet</i></p> <p>Off balance sheet asset. Book value of equity at 3,768 million Euros is understated because biggest asset is off the books.</p>	<p><i>Balance Sheet</i></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; text-align: center;">Asset</td> <td style="width: 50%; text-align: center;">Liability</td> </tr> <tr> <td style="text-align: center;">R&amp;D Asset 2914</td> <td style="text-align: center;">Book Equity +2914</td> </tr> <tr> <td colspan="2" style="text-align: center;">Total Book Equity = 3768+2914= 6782 mil</td> </tr> </table>	Asset	Liability	R&D Asset 2914	Book Equity +2914	Total Book Equity = 3768+2914= 6782 mil	
Asset	Liability						
R&D Asset 2914	Book Equity +2914						
Total Book Equity = 3768+2914= 6782 mil							
<p><i>Capital Expenditures</i></p> <p>Conventional net cap ex of 2 million Euros</p>	<p><i>Capital Expenditures</i></p> <p>Net Cap ex = 2+ 1020 – 903 = 119 mil</p>						
<p><i>Cash Flows</i></p> <p>EBIT (1-t) = 1285                      - Net Cap Ex = 2                      FCFF = 1283</p>	<p><i>Cash Flows</i></p> <p>EBIT (1-t) = 1402                      - Net Cap Ex = 119                      FCFF = 1283 m</p>						
<p>Return on capital = 1285/(3768+530)                      = 29.90%</p>	<p>Return on capital = 1402/(6782+530)                      = 19.93%</p>						

### III. One-Time and Non-recurring Charges

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■ Assume that you are valuing a firm that is reporting a loss of \$ 500 million, due to a one-time charge of \$ 1 billion. What is the earnings you would use in your valuation?

- A loss of \$ 500 million
- A profit of \$ 500 million

Would your answer be any different if the firm had reported one-time losses like these once every five years?

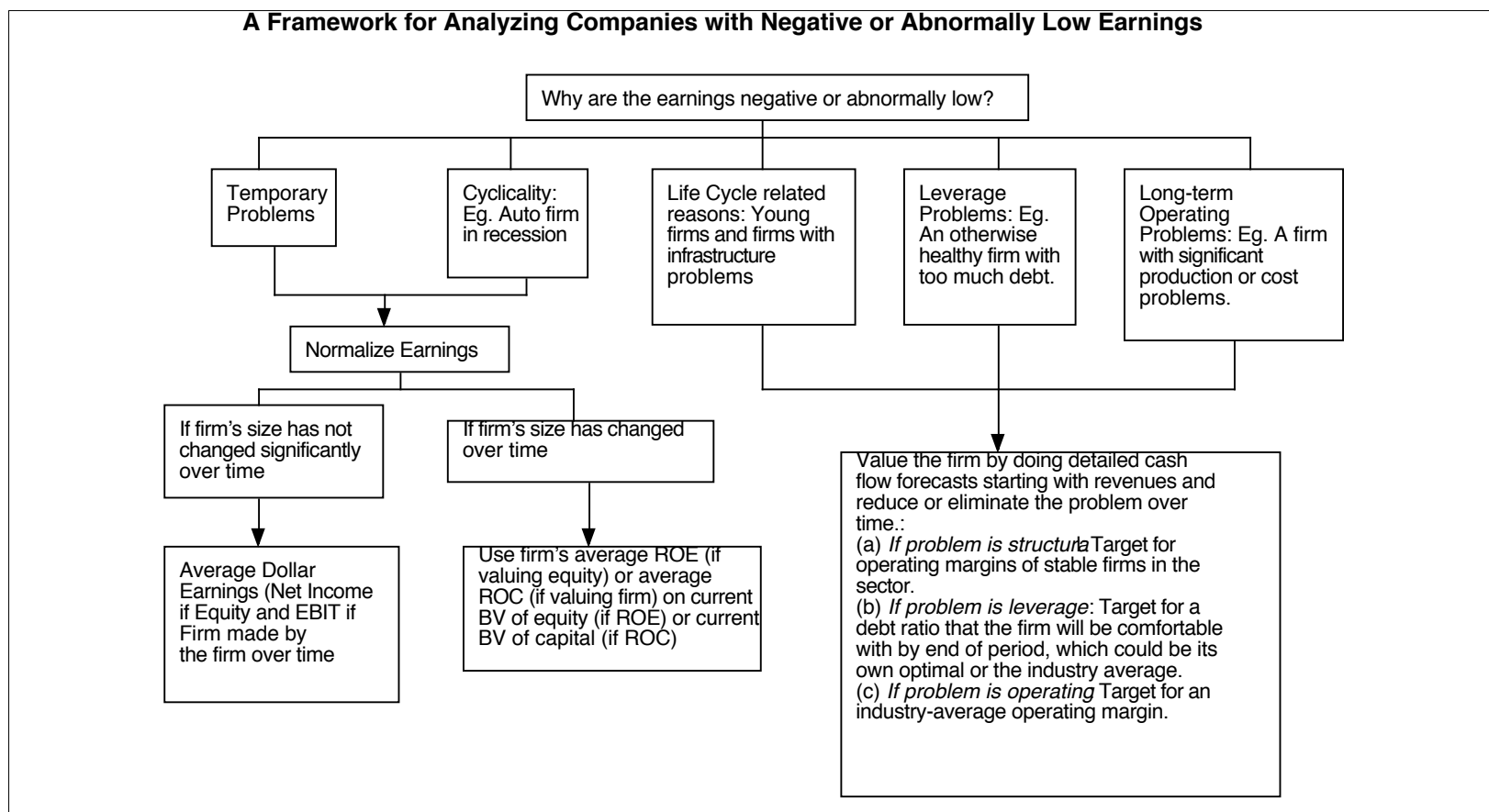
- Yes
- No

## IV. Accounting Malfeasance....

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- Though all firms may be governed by the same accounting standards, the fidelity that they show to these standards can vary. More aggressive firms will show higher earnings than more conservative firms.
- While you will not be able to catch outright fraud, you should look for warning signals in financial statements and correct for them:
  - Income from unspecified sources - holdings in other businesses that are not revealed or from special purpose entities.
  - Income from asset sales or financial transactions (for a non-financial firm)
  - Sudden changes in standard expense items - a big drop in S,G &A or R&D expenses as a percent of revenues, for instance.
  - Frequent accounting restatements
  - Accrual earnings that run ahead of cash earnings consistently
  - Big differences between tax income and reported income

## V. Dealing with Negative or Abnormally Low Earnings



## What tax rate?

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- The tax rate that you should use in computing the after-tax operating income should be
  - The effective tax rate in the financial statements (taxes paid/Taxable income)
  - The tax rate based upon taxes paid and EBIT (taxes paid/EBIT)
  - The marginal tax rate for the country in which the company operates
  - The weighted average marginal tax rate across the countries in which the company operates
  - None of the above
  - Any of the above, as long as you compute your after-tax cost of debt using the same tax rate

## The Right Tax Rate to Use

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- The choice really is between the effective and the marginal tax rate. In doing projections, it is far safer to use the marginal tax rate since the effective tax rate is really a reflection of the difference between the accounting and the tax books.
- By using the marginal tax rate, we tend to understate the after-tax operating income in the earlier years, but the after-tax tax operating income is more accurate in later years
- If you choose to use the effective tax rate, adjust the tax rate towards the marginal tax rate over time.
  - While an argument can be made for using a weighted average marginal tax rate, it is safest to use the marginal tax rate of the country



## A Tax Rate for a Money Losing Firm

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- Assume that you are trying to estimate the after-tax operating income for a firm with \$ 1 billion in net operating losses carried forward. This firm is expected to have operating income of \$ 500 million each year for the next 3 years, and the marginal tax rate on income for all firms that make money is 40%. Estimate the after-tax operating income each year for the next 3 years.

	Year 1	Year 2	Year 3
EBIT	500	500	500
Taxes			
EBIT (1-t)			
Tax rate			