FIN2704/X Week 10

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Plug variable

How to make the balance sheet balance

- Always: Assets = Liabilities + Equity
- ...or you can view this as:
 - How the firm is going to finance its growth
 - How the firm is going to use the excess funds generated from the growth
- Two scenarios covered in this module:
 - 1. The firm decides that Debt and Equity grow proportionally with Assets
 - The excess funds generated (i.e., NI) goes to paying dividends
 - 2. The firm decides to not pay dividend
 - All excess funds generated goes to RE, which means that E will increase
 - To balance, the firm will pay off some of its debts

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EFN equation

Allows for calculation of **external financing** needed to finance the increase in assets to facilitate sales growth



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EFN equation assumptions

$$EFN = (A*/S0)\Delta S - (L*/S0)\Delta S - (M(S1)(RR))$$

To use the EFN equation, these assumptions must be met:

- 1. Firm is operating at full capacity
- 2. Constant Profit Margin
- 3. Dividend Payout Ratio/ Retention Ratio is constant

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IMPORTANT INFORMATION

Final Exam is scheduled for

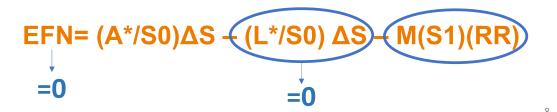
Wednesday, 28 April 2021 at 9:00 am

- On-site exam ONLY
 - No remote exam
- 90 minutes, digital assessment using Examplify
- Students who are unable to write this final exam on-site <u>must</u> file for <u>special</u> <u>consideration</u> together with valid supporting documents
 - NUS Business School's Board of Examiners will decide the appropriate resolutions in line with NUS guidelines
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Internal growth rate

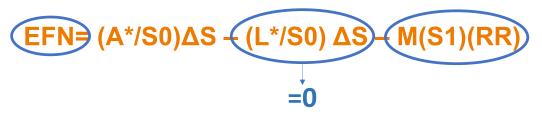
- How much the firm can grow its assets using Retained Earnings as the <u>only</u> source of financing
- Implies that:
 - EFN = 0
 - No spontaneous change in liabilities
 - All liabilities are non-spontaneous



Sustainable growth rate

How much the firm can grow by using:

- Internally generated funds, and...
- External funds by issuing debt, while ...
- Still maintaining a constant debt ratio
 - No spontaneous change in liabilities
 - All liabilities are non-spontaneous



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Sustainable growth rate example (Week 10 slide 38) REVISED

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New Sales = 5,000*1.1714 = 5,857
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$$EFN = (A*/S0)\Delta S - (L*/S0) \Delta S - M(S1)(RR)$$

= (9,500/5,000)*857 - 0 - (1,200/5,000)*5,857*0.5

= 925.46 (all debt)

Current Debt ratio = 5,400/9,500 = 0.5684

Projected Debt ratio = (5,400+925.46)/(9,500+925.46+702.84) = 0.5684

Total projected debt = Current level of debt + Projected new debt **Total projected assets**

- = current level of assets + $(A*/S0)\Delta S$
- = current level of assets
- + projected external financing
- + projected financing from RE

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If the firm wants to have a growth rate higher than its sustainable growth rate (Week 10 slide 39)

If want higher growth rate than sustainable growth rate, say 20%,

New Sales = 5,000*1.20 = 6,000

AFN =
$$(A^*/S_0)\Delta S - (L^*/S_0)\Delta S - M(S_1)(RR)$$

= $(9,500/5,000)^*1,000 - 0 - (1,200/5,000)^*6,000^*0.5$
= $(1,180 \text{ (all debt)})$

Current Debt ratio = 5,400/9,500 = 0.5684

Projected Debt ratio = (5,400+1,180)/(9,500+1,180+720) = 0.5772

Higher than current Debt ratio

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Other notes

- Sustainable growth rate vs. Internal Growth Rate
 - Both are reasonable assumption
 - Depends on how the firm finances the growth
- Retention rate: how much of the net income is kept by the firm as Retained Earning
 - Retention rate = 1 dividend payout ratio

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Week 10 List of topics

Note:

You are responsible for all materials covered in the prerecorded videos posted on LumiNUS, unless they are marked "not examinable". This list only serves to help you in your revisions.

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Week 10 topics

Financial planning

- Capital budgeting decisions
- Capital structure decisions
- Net working capital decisions
- Dividend policy decision

Planning process

- Horizon
- Aggregation
- Assumptions & scenarios

Financial statements

- Pro-forma financial statements
- Shareholder's Equity increases by Addition to Retained Earnings

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Week 10 topics (cont.)

- Financial planning model ingredients
 - 1. Sales forecast
 - 2. Pro-forma statements
 - 3. Assets requirements
 - 4. Financial requirements
 - 5. Plus variables
 - 6. Economic assumptions

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Week 10 topics (cont.)

Percent of Sales approarch

- Some Balance Sheet and some Income Statement items may vary directly with sales, while others may not
- External Funds Needed (EFN)
 - Important assumptions to using EFN equation
- Firms operating at less than full capacity
- Internal growth rate
- Sustainable growth rate

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