

# Managing Growth

## Issue

Increased sales require increased assets, which require additional financing

How fast can sales grow before firm has to:

- change operating performance,
- alter financial policies or
- sell new shares?

## Givens (Constants)

Firm has target capital structure (debt/equity ratio)

Firm has target dividend policy (dividend payout ratio, retention ratio)

Firm will not sell new equity, but must borrow in order to maintain target capital structure

- Over time, earnings are retained and some debt will mature

# Sustainable Growth Rate

## Definition

Maximum rate at which sales (earnings, dividends, etc.) can grow, if financing with only internal equity (retained earnings) plus “matching” debt

## Constraints

Sales growth is constrained by asset growth,  
which is constrained by growth in capital (liabilities + equity),  
which is constrained by growth in equity, i.e., the addition to retained earnings

$$g^* = \frac{\Delta \text{Equity}}{\text{Equity}_0} = \frac{\Delta \text{Retained Earnings}}{\text{Equity}_0} = \frac{\text{Retention Ratio} \times \text{NI}}{\text{Equity}_0} = R \times \frac{\text{NI}}{\text{Equity}_0} = R \times \text{ROE}$$

So, as a first approximation,  $g^*$  depends on

- how much of earnings is retained (and reinvested)
- how much is earned on it ROE

# Decomposing ROE

## DuPont Model

$$ROE = \underbrace{\frac{\text{Net Profit}}{\text{Margin}}}_P \times \underbrace{\frac{\text{Total Asset}}{\text{Turnover}}}_A \times \underbrace{\frac{\text{Equity}}{\text{Multiplier}}}_T$$

where  $T$  is based on the EOP value for Common Equity.

Using the Asset/Equity ratio based on the BOP value for Common Equity,

$$g^* = PRA\hat{T}$$

# Determinants of $g^*$

**$g^*$  can be higher, the higher**

- profitability (P), measured by NPM
- retention ratio (R)
- asset turnover (A), measured by TAT
- leverage (T), measured by Asset/Equity ratio

Capital structure (T) and dividend policy (R) are financial policies, set by board  
Profitability (P) and turnover (A) are elements of operations

Given financial policies (including reluctance to sell new equity),  $g^*$  depends on ROA:

$$\begin{aligned}g^* &= PA \times R\hat{T} \\ &= ROA \times R\hat{T}\end{aligned}$$

Given performance (ROA) and financial policies ( $R\hat{T}$ ), firm can grow at  $g^*$  indefinitely

# Calculating $g^*$ : Example

S&S Corporation					
Financial Statements (\$ millions)					
Income Statement			Balance Sheet		
	2013	2014		2013	2014
Sales	\$5,000	\$5,500	Cash	\$250	\$275
COGS	4,000	4,400	A/R	750	825
Operating expense	500	550	Inventory	1,500	1,650
EBIT	500	550	Total current assets	2,500	2,750
Interest expense	93	99	Net PP&E	2,000	2,200
EBT	407	451	Total assets	4,500	4,950
Tax	142	158			
Net income	\$265	\$293	Total debt	1,550	1,641
			Shareholders' equity	2,950	3,126
			Total liabilities & equity	\$4,500	\$4,767

$$g^* = \frac{\Delta \text{Equity}}{\text{Equity}_0} = R \times \text{ROE} = \text{PRA} \hat{T}$$

# What $g^*$ Is and Isn't

## Is: "Sustainable"

Given performance (ROA) and financial policies ( $RT$ ), firm can grow at  $g^*$  indefinitely, without either leaking or accumulating resources ("balanced" growth)

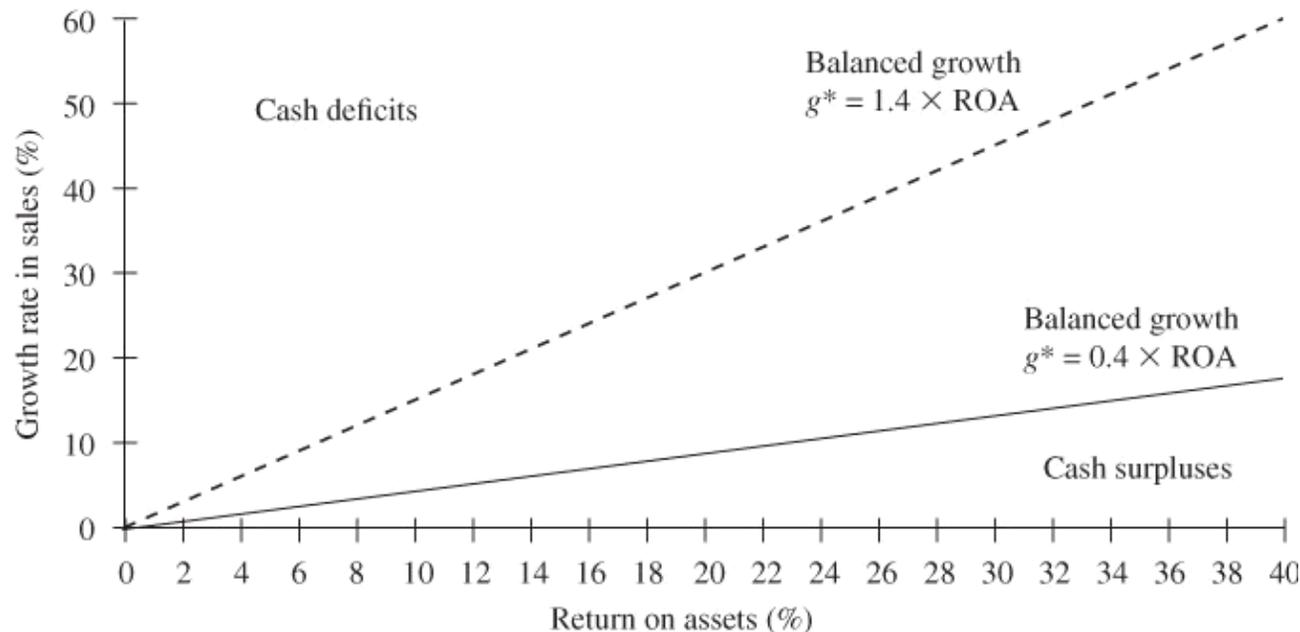
## Isn't: Required

A firm can grow above or below its  $g^*$ , but cash balances will change

## Isn't: Fixed

A firm can change its  $g^*$ , by changing one or more of P, R, A or T

Note: slope is  $RT$



# Unbalanced Growth: Consequences and Remedies

## Growth above $g^*$

Cash balance will fall

Remedy?

- Sell new equity — brings cash, increases debt capacity — may be difficult, many firms reluctant
- Increase leverage — brings cash — debt capacity may be limited, bankruptcy risk
- Increase retention ratio (cut dividend payout ratio) — zero bound, price may fall
- Prune (products or customers) — brings cash, reduces sales, increases turnover
- Outsource — reduces assets, increases turnover — but must protect main business
- Raise prices — reduces sales, may increase margin
- Merge — find mature “cash cow” or conservative, liquid firm

## Growth below $g^*$

Cash balances grows

Questions: Long-term or short-term? If long-term, industry-wide or limited to firm?

Remedy?

- Ignore (“bad growth”) — may depress stock price, attract takeover
- Return cash to shareholders — managers’ growth bias (agency problem)
- Diversify — buy growing business(es) — shareholders might prefer the cash

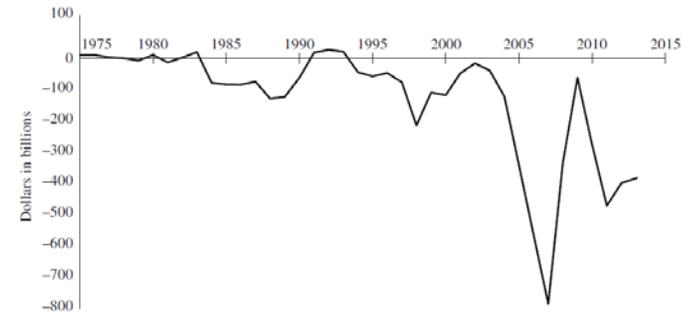
# New Equity Financing

## Reality

Firms are reluctant to issue new shares, lately retired more than raised

Typical firm sells new equity only every 20 years

When firm does raise funds, selling new equity is last in the “pecking order”



## Reasons for Reluctance

- No need: other sources sufficient
- Expense: floatation cost
- EPS fetish
- Po' mouth: “the market doesn't appreciate/understand us, we're undervalued”
- Market perceived as unreliable funding source: prices go down, as well as up
- Information asymmetry: adverse signaling effect