ILLINOIS
Gies College of Business

FIN521
Advanced Corporate Finance

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Corporate Finance

- How should a firm decide whether to invest in a new project?
- How much debt and equity should a firm use to finance its activities?
- How should a firm pay its investors?
- Why do firms make acquisitions?
- What determines the value of a firm?

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Outline

- Mini-case: Amazon’s acquisition of Whole Foods
- Sources of gains from acquisitions
- Valuation of acquisitions

1.1% of US grocery market

1.7% of US grocery market
Over 400 stores in US, UK, and Canada

- On June 16, 2017, Amazon announced it would buy Whole Foods Market Inc. for $13.7 billion
  - The offer represents about 30% premium to Whole Foods’ closing price
  - The stock price of Amazon increased by more than 2% following the news

1.1% of US grocery market

1.7% of US grocery market
Over 400 stores in US, UK, and Canada

- Q1: Why was Amazon willing to pay a large premium to acquire Whole Foods?
- Q2: What does the stock market reaction tell us about the acquisition?

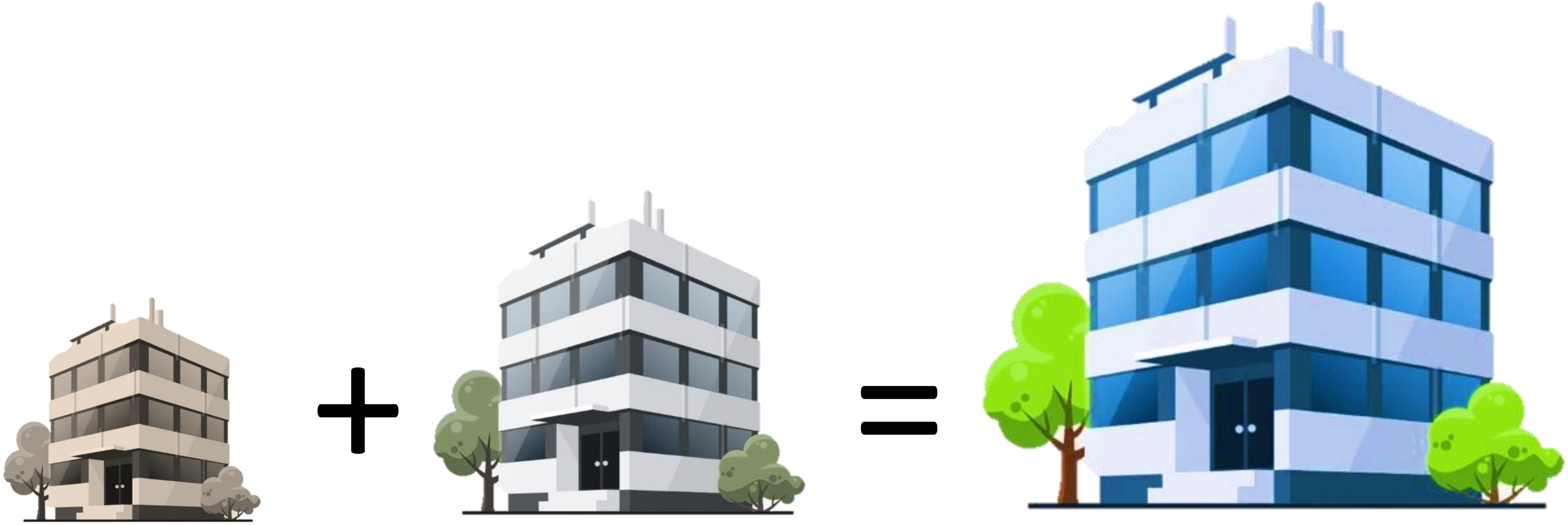
A team is greater than the sum of its parts

Sources of Gains: Operating Synergies

- Economies of scale and scope
  - A larger firm can reduce its per unit cost by using excess capacity or spreading fixed costs across more units
  - … reduce costs by combining the marketing and distribution of different types of related products
- Economies of vertical integration
  - Control over suppliers may reduce costs
  - E.g., Comcast’s acquisition of NBC Universal in 2009
- Complementary resources
  - Each firm fills in the “missing pieces” of one firm with pieces from the other firm
  - E.g., Google’s acquisition of Waze in 2013
- Elimination of inefficient management

Sources of Gains: Financial Synergies

- Tax gains
  - Take advantage of otherwise unusable tax losses
  - Debt capacity: mergers allow for increased debt and a large tax shield
- Reduction in financial constraints
  - A financially constrained target can benefit from being taken over by an acquirer with excess cash
  - E.g., during the 2008-2009 financial crisis, AstraZeneca and Glaxo SmithKline were looking to acquire smaller biotech firms because they were better able to fund those companies' investments
- Reduced working capital requirements



\$30 billion + \$50 billion = \$100 billion

Synergy is created only by the combination of the firms; each firm standing alone would not be able to produce it

NPV of an Acquisition (1/2)

- Suppose firm *A* is considering acquiring firm *T*
- <u>Benefit:</u> The synergy from the acquisition is

$$Synergy \ = V_{A+T} - (V_A + V_T)$$

- <u>Cost:</u> The acquisition premium is

$$Premium = Compensation\ for\ T\ -\ V_T$$

- The NPV of an acquisition to the acquirer is:

$$\begin{aligned} NPV\ &=\ Synergy\ -\ Premium \\ &=\ [V_{A+T} - (V_A + V_T)] - [Compensation\ for\ T\ - V_T] \end{aligned}$$

NPV of an Acquisition (2/2)

$$\begin{aligned} NPV &= Synergy - Premium \\ &= [V_{A+T} - (V_A + V_T)] - [Compensation\ for\ T - V_T] \end{aligned}$$

- In a cash offer:

$$Compensation\ for\ T = Cash\ paid\ for\ T$$

- In a stock offer:

$$Compensation\ for\ T = \alpha \times V_{A+T}$$

where $\alpha = \dfrac{New\ acquirer\ shares\ issued}{old\ acquirer\ shares + new\ acquirer\ shares\ issued}$

NPV of an Acquisition: Example

- Consider the following pre-merger information about an acquirer (*A*) and a target (*T*)

	Firm *A*	Firm *T*
Shares outstanding	10,000	5,000
Price per share	\$50	\$20

- Firm *A* has estimated that the value of synergies from acquiring Firm *T* is \$30,000
- Consider two offers:
  - A cash offer at a price of \$25 per share
  - An exchange of stock at a ratio of 0.5 shares of *A* for one share of *T*
- Compute the NPV of the acquisition and the share price of the acquirer after the acquisition in each case

Pre-merger information:

	Firm *A*	Firm *T*
Shares outstanding	10,000	5,000
Price per share	$50	$20

Synergy = $30,000

<u>Cash offer</u> at a price of $25 per share

$$NPV = Synergy - [Cash\ paid\ for\ T - V_T]$$

Pre-merger information:

	Firm A	Firm T
Shares outstanding	10,000	5,000
Price per share	$50	$20

Synergy = $30,000

<u>**Stock offer**</u> at a at a ratio of 0.5 shares of A for one share of T

$$NPV = Synergy - [\alpha \times V_{A+T} - V_T]$$

- Q1: Why was Amazon willing to pay a large premium to acquire Whole Foods?
    - Complementary resources: vast online customer base (200 mil prime members) + warehousing and distribution capabilities & large selection of high-end groceries
    - Efficiency gains: applying Amazon's technologies to improve online and offline shopping services
- Q2: What does the stock market reaction tell us about the acquisition?
    - The market believes that synergies > premium paid