

LECTURE 05: PERSONAL FINANCE & INVESTMENT

- I. Reaction times
 - a. Suppose some favorable news came out for a company. How long would it take for the stock price to change?
 - i. A few seconds, depending on the nature of the information
 - b. *Efficient market hypothesis* (EMH)—prices of traded assets reflect all publicly available information
 - i. Note this doesn't mean the market is always right. Just that when it's wrong, there's no public information to suggest it's wrong.
 - ii. If every tradable is valued fairly at all times, there's little point to trade frequently.
 - c. Why do some people beat the market?
 - i. *Luck*. With so many gambling, by chance you'll get a few that have won many, many, many times over
 - ii. *Insider trading*. US Senators beat the stock market by an average of 12.3 percentage points (if the stock market's value grows by 3%, Senators' portfolio's value grows by 15.3%). House Representatives beat it by 6% and corporate insiders by 7.4%.¹ Note insider trading laws do *not* apply to Congress.
 - iii. *Psychology*. People panic. They succumb to overconfidence, group think, bubbles, etc. Those who can keep their head can profit.
- II. Picking stocks
 - a. Diversify: buy lots of different kinds of stocks to limit risk to any one area (this is also sometimes referred to as hedging your bet).
 - i. *Buy and hold*—buying and holding stocks for the long run, regardless of what their short run fluctuations are.
 - b. Avoid high fees: because stock picking is a fool's game, there's no reason to pay a lot for people to do it. But if you're doubtful of the EMH, maybe it's worth it. Maybe.
 - c. Compound returns build wealth: A 4% annual rate of return means you will earn interest on the interest you earned in previous years. \$100 becomes \$104, then \$108.16, then \$112.49, then 116.99, etc. This supports a buy and hold strategy.

¹ <http://insidertrading.procon.org/view.answers.php?questionID=001034>

- i. *Rule of 70*—Again, the Rule of 70 appears. To estimate how many periods it will take to double your money, divide seventy by your rate of return.
- ii. At 4% rate of return, you will double your money in 17.5 periods. Without compound interest, it would take 25 periods.
- d. No Return Without Risk: Profit opportunities that are sure things are quickly bought up, reducing the return.
 - i. *Risk-return trade-off*—higher returns come at the price of higher risk

III. On Competition and Investment

- a. What's a better business to invest in: milk or scissors?
 - i. Milk seems the better option, right? People buy milk all the time because using milk means you drink it. People buy scissors only when the pair they have breaks or gets lost. Indeed, there's a lot more people in a grocery's dairy section than in its office supply section.
 - ii. If you agree that consumables are obviously the better investment, your budding economic brain should want you to hesitate. If milk is clearly the better option, then everyone would invest in milk. There would be a lot of competition in milk. The gross profit margin on milk is low because a company can make a small margin and still sustain itself due to the high volume.
 - 1. *Gross profit margin* is the profit after accounting for the cost of goods sold (COGS); it only considers the direct cost to produce a good and does not consider costs shared by multiple goods: e.g. insurance, rent, and advertising. These costs that cover the business operation in general is called *overhead*.
 - iii. In contrast, fewer people buy scissors so there are fewer firms that make scissors. Thus the gross profit margin *has* to be high because fewer sales have to cover the overhead. If scissors had a low gross profit margin and a low volume, no company could make enough money.
- b. *Elimination Principle*—unusually high profits are eliminated by entry and unusually low profits are eliminated by exit. In equilibrium, all firms are equally profitable over the long run.
- c. In equilibrium, we'd expect milk and scissors to be equally profitable.
 - i. Imagine milk has a 3% gross profit margin and has a sales volume ten times as high as scissors.

- ii. That means an investor could put \$100 into milk, collect \$3 in profits. Because the volume is high, imagine they do that ten times in a week. They've made \$30 in gross profits.
 - iii. In equilibrium, the investor should be able to make the same gross profit in the same week by investing in scissors. (Assume overhead is the same.) She puts \$100 in scissors and while it takes a whole week to sell those scissors, each sale earns 30% gross profit.
 - iv. In both instances, milk and scissors are equally good investments because both earned 30% gross profit in a week.²
- d. We can sum up both ideas in a table:

		Volume	
		<i>High</i>	<i>Low</i>
Gross Profit Margin	<i>High</i>	Unsustainable Due to Entry	Sustainable
	<i>Low</i>	Sustainable	Unsustainable Due to Exit

- i. It's important to remember that this table is a simplification. Riskier businesses, as mentioned, should earn more profits.
- ii. And some businesses are very volatile. They have very good years and very bad years; oil companies are like this because their profits are dependent on the price of oil which can change radically.
- iii. And industries are constantly changing. Some industries adapt well and others don't. Some are in decline and others are booming.
- iv. Thus even with industries of similar volume, you might not see similar gross profit margins. A lot is going on so it's hard to perfectly isolate this effect.

² Technically, it's more complicated than that because the milk investment provides a stream of revenue that could be reinvested immediately. The investor could've put in \$100, then \$103, then \$106.09, etc., earning more than a 30% profit margin. In practice, though, the scissors investment would match that higher profit margin as well.