Why it Matters: The Tyranny of the Average

Lesson Introduction

Insurance premiums and many other things are based on estimates of the behavior of like groups of people or "averages," according to Dr. Julie Heath's Cincinnati Enquirer article, "*The Tyranny of the Average*." This lesson explores how insurance companies look at a variety of factors about groups of people to estimate risk and determine insurance premiums. Students will read a list of typical factors and determine which they think are the most important in determining how much they should pay for automobile insurance.

Note: This lesson uses resources from the State Farm "What Affects Car Insurance Price?" website. Thanks to State Farm for providing this these online resources.

URL: http://www.statefarm.com/insurance/auto_insurance/ins_auto_price.asp.

Lesson Background

Insurance is a way of mitigating the risk of loss from some event, such as an automobile accident, a storm or, maybe, a simple mistake. An individual purchases a policy that states, for a specified price paid over some time period, the insurance company will pay for the damages from the event. In the case of automobile insurance, the company charges a "premium," paid monthly, every six months or some other time schedule, to pay for losses from an accident or other cause, for another person's property, your property or medical expenses.

Why would a company take the risk of agreeing to pay for your or another person's mistake or bad driving? The company looks at your behaviors and other factors about you, the potential for a loss and potential costs. The insurance company then estimates its costs over time and determines how much revenue it requires (including some profit) to take the risk.

As Dr. Heath's article explains, the company can't know everything specifically about you, but it can estimate the risk for a large group of people with similar characteristics. The statistics show that teenage boys drive more, take more risks and have more accidents than girls do. So, boys should pay more than girls. Those over age 25 typically have fewer accidents, as a group, than younger drivers, so, they pay lower premiums for the same coverage.

Is this fair? Dr. Heath asks. Maybe it is not "fair" to every individual, but it is fair to the similar group, and may be the only way for insurance companies to set rates, pay expenses and make a profit. Within each demographic group, such as teenage boys, there will be good drivers and bad. It may not be possible for the companies to determine that factor until an accident occurs, and in some cases, the good drivers have to subsidize the poor drivers. There are some things an individual can do to reduce his or her insurance costs, but most of the cost is based on the data about their peers.

Key terms used in this lesson:

Insurance A practice or arrangement whereby a company provides a guarantee of compensation for specified forms of loss, damage, injury or death. People obtain such guarantees by buying insurance policies, for which they pay premiums. The process allows for the spreading out of risk over a pool of insurance policyholders, with the expectation that only a few policy holders will actually experience losses for which claims must be made. Types of insurance include automobile, health, renter's, homeowner's, disability and life.

Premium The fee paid for insurance protection.

Coverage The specific risks "covered" or protected against by an insurance policy.

Deductible A set amount an insured person must pay per loss before the insurance company will pay a claim.

Risk The chance of losing money.

NOTE: Unless otherwise cited, the definitions used in this lesson are from the Council for Economic Education's *Virtual Economics* program. They are consistent with the *National Voluntary Content Standards in Economics* and the *Ohio Academic Content Standards for Social Studies*.

Read and Watch More Information about Insurance

"*Insurance*," Virtual Economics video (Version 4, Browse Economic Concepts: Personal Finance Economics, Council for Economic Education, 2011. 3 minutes, 55 seconds)
http://www.econedlink.org/interactives/index.php?iid=231&type=educator

Lesson Objectives

The student will:
1. Identify the factors that determine the cost of automobile insurance.
2. Comment on the relative importance of the factors used by insurance companies to determine insurance premiums.
3. Identify actions a teen can take to reduce automobile insurance costs.

Lesson Materials

Video: "*Insurance*," *Virtual Economics* video (Version 4, Browse Economic Concepts: Personal Finance Economics, Council for Economic Education, 2011. 3 minutes, 55 seconds)
http://www.econedlink.org/interactives/index.php?iid=231&type=educator

Handout/Visual 1: *The Tyranny of the Average*
Handout/Visual 2: *Insurance Definition*
Handout/Visual 3: *Factors That Determine Insurance Costs*
Handout/Visual 4: *My Insurance Risk*

Lesson Preparation

1. Prepare visuals to project or print copies of the Handout/Visuals for each student: Handouts/Visuals 2 and 3.
2. Prepare to access and project the *Virtual Economics* "*Insurance*" video online.

Introduction

1. Ask the students if they ever hear people talk about some behavior they attribute to all teens. How do they feel when they are lumped into a group just because of their age?

Explain that the students will read an article about "averages" and how people are often lumped into groups of similar characteristics and that many times these groups are treated differently by the law, businesses and others.

2. Distribute copies of Handout/Visual 1: *The Tyranny of the Average*. Give the students time to read the article.

Ask the students what they think of the system of statistical discrimination that is used to determine insurance rates. Is it fair? Is it practical? Is there a better way to set insurance rates? [The students may respond in a variety of ways. Some will call it unfair. Others may understand the necessity to use statistical discrimination. The discussion should bring out the conflict between "fairness" to individuals and the need for insurance companies to set rates efficiently.

Explain that in this rest of lesson the students will take a closer look at how insurance rates are determined.

Lesson Procedures

1. Ask the students: What is insurance? Allow time for students to offer their definitions. *[The student answers will vary. Some will suggest that it is just something you have to buy to drive a car. Others may suggest that it pays you for an accident. Elicit comments that refer to risk and protection.]*

Distribute copies or project the *Virtual Economics* definition of "insurance" in Handout/Visual 1: *Insurance*.

> *A practice or arrangement whereby a company provides a guarantee of compensation for specified forms of loss, damage, injury or death. People obtain such guarantees by buying insurance policies, for which they pay premiums. The process allows for the spreading out of risk over a pool of insurance policyholders, with the expectation that only a few policy holders will actually experience losses for which claims must be made. Types of insurance include automobile, health, renter's, homeowner's, disability and life.*

Help the students interpret the definition by clearly defining the key concept of "spreading out risk." Explain that to spread the risk, the insurance companies must use the statistical discrimination mentioned in Dr. Heath's article.

To reinforce this definition, use the video: "*Insurance*," *Virtual Economics* video (Version 4, Browse Economic Concepts: Personal Finance Economics, Council for Economic Education, 2011. 3 minutes, 55 seconds) http://www.econedlink.org/interactives/index.php?iid=231&type=educator

2. Distribute copies or project Handout 3: *How Insurance Rates are Determined*. Review the handout, point by point, identifying the criteria and rationale for each point.

What insurance coverages you buy
• How many "coverages" you buy – the risks you choose to insure.
• The deductibles – the amount you agree to pay prior to the insurance coverage.
[Typically, drivers are required to purchase "liability" insurance (or an alternative) to cover injuries to others and damage to their property. Drivers can also purchase comprehensive and collision insurance to cover their losses, additional bodily injury insurance, uninsured drivers insurance, and higher amounts of coverage.]

What kind of car you drive
• If you are buying or selling a car, you will need to re-evaluate your auto insurance needs.
• Generally, the more expensive the car, the higher the auto insurance cost.
[It makes sense that if your car is more costly to repair, you should pay more.]

Where you drive
• Generally, due to higher rates of vandalism, theft, and accidents, urban drivers pay a higher auto insurance price than those in small towns or rural areas.
[Where you choose to live can determine your risks and insurance rates.]

How much you drive
• People who use their car for business and long-distance commuting normally pay a higher car insurance premium than those who drive less.
[Again, this is a choice you make. You have alternatives.]

Your age, sex and marital status
• Accident rates are higher for all drivers under age 25, especially young males and single males. Car insurance prices in most states reflect these differences.
[Your sex, age, and marital status put you into a statistical group. If the behaviors of people in these groups impact risk, insurance companies will use that data to determine rates.]

Your driving record
• Drivers who cause accidents generally must pay higher car insurance premiums than those who are accident-free for several years.
[This is something you control. If you take driving risks, your chance of having an accident are higher. Those with more citations or accidents you have, the greater the risk to the insurance companies.]

Your credit history
• Studies have shown that credit history is a powerful predictor of future auto insurance losses.
• Many insurance companies consider certain credit characteristics in addition to many other factors when determining an individual's car insurance premium.
[This is a somewhat controversial factor, but is statistically based. Those with higher credit ratings present less risk to insurance companies.]

3. Ask the students to identify which of these criteria they can control and which are outside their control. *[Age and sex are two of the criteria they cannot change or do anything about. These criteria are applied to demographic groups.*

Ask: Is this fair? Again, ask the students if there is any other way to evaluate the risk of individuals? Refer to Dr. Heath's "adverse selection." *[Insurance companies cannot acquire perfect information about each driver. The drivers on the other hand, know their individual behaviors and risks. As a result, drivers who are riskier will be more likely to purchase insurance. Lacking information, insurance companies cannot accurately set individual rates. Thus, they depend on statistical discrimination.]*

4. Ask the students to suggest ways they can reduce their insurance costs. *[They may be aware of discounts for good grades or completing a driver training course.]*

Ask the students to explain the logic or rationale for these discounts. *[Again, the insurance companies base these discounts on accident statistics.]*

For more information about some typical types of automobile insurance discounts, see State Farm's "Get all the discounts you deserve" website. URL:
http://www.statefarm.com/insurance/auto_insurance/discounts/auto-discounts.asp

Conclusion

Again, review the definition of insurance (Handout/Visual 2.) Clarify the concept of "spreading out of risk over a pool of insurance policyholders."

Assessment

Using Handout/Visual 4: *My Insurance Risk*, student should explain the personal decision they will make as driver that will influence their insurance costs.

Writing prompt: What are your personal behaviors and decisions that will increase and decrease your automobile insurance costs? Identify the behaviors and decisions, and suggest why they will cause your insurance premiums to increase or decrease.

Handout / Visual 1

Why It Matters: The Tyranny of the Average

By Dr. Julie Heath

"Average" is all around us: your GPA, the unemployment rate, Joey Votto's batting performance. Using averages can help us make sense of a large amount of data. But it can also lead us to incorrect assumptions. For example, if one of your projects for math class were to calculate the average wealth of all your classmates' families, you'd probably come up with a number that fairly accurately reflects the economic circumstances of most of those in your class. But what if one of your classmates were Bill Gates' child? With his current wealth sitting at $72.9 billion, your average calculation will suddenly give the appearance that everyone in your class lives in a billionaire family.

While this example of a misleading average is more amusing than substantive, there are plenty of examples that hit much closer to home. Let's talk about car insurance. If you are a male driver under the age of 25, your car insurance premium is probably higher than that of a comparable young woman. In fact, if a female version of yourself existed, equal in all respects (same driving record, grades, car model, residence), odds are you will pay about $676 more in premiums than your she-clone. But wait, you exclaim, insurance companies aren't being fair! Enter the tyranny of the average.

Car insurance premiums for young males are generally higher than young women's because, *on average,* young men are worse drivers. Men are more likely to be in a crash than women, especially fatal crashes. Women wear seatbelts 27% more often than men do. Men have twice as many DUI citations as women do. Men also drive more than women do—1.5 times more. So, men--especially young men--are on the road more than women, and once there, take greater risks--o*n average*.

The problem in the insurance market is called adverse selection. In this case, adverse selection simply means that you have more information about your driving habits than the insurance company does. But the insurance company has to somehow determine an appropriate premium to charge you. What to do? The company relies, to some extent, on those averages. If a certain category of driver is, on average, involved in more crashes and engages in more risky behavior than other categories, and you fit into that category, you're likely to pay higher premiums. Your individual behavior can certainly mitigate the effect of belonging to that risky category, such as getting better grades or taking driver training classes, but if you're a young man, your premium is still likely to be more than that of a similar young woman.

This may not seem fair, but it is legal in the U.S. because insurance companies are not charging different premiums simply on the basis of gender. They are using gender as an indicator of risk because—on average—gender is associated with the greater likelihood of an accident on the part of young men. Gender is not the major factor in setting premiums, and the difference in premiums is becoming smaller as the driving habits of young men and women become more alike. This doesn't mean that the tyranny of the average no longer exists; it simply means that the averages are more equal. If you're a young male driver, don't take your higher premium personally. Your insurance company doesn't have anything against <u>you</u>, it's just playing the averages.

Handout / Visual 2

Insurance Definition

A practice or arrangement whereby a company provides a guarantee of compensation for specified forms of loss, damage, injury or death.

People obtain such guarantees by buying insurance policies, for which they pay premiums.

The process allows for the spreading out of risk over a pool of insurance policyholders, with the expectation that only a few policy holders will actually experience losses for which claims must be made.

Types of insurance include automobile, health, renter's, homeowner's, disability and life.

Handout/Visual 3

How Insurance Rates are Determined*

Most people are looking for a low car insurance price. In many cases, it's the choices you make about the coverage you want that determine the cost of your car insurance premium. Companies look at the following factors to determine your car insurance premium:

What you buy
• How many "coverages" you buy – the risks you choose to insure.
• The deductibles – the amount you agree to pay prior to the insurance coverage.

What kind of car you drive
• If you are buying or selling a car, you will need to re-evaluate your auto insurance needs.
• Generally, the more expensive the car, the higher the auto insurance cost.

Where you drive
• Generally, due to higher rates of vandalism, theft, and accidents, urban drivers pay a higher auto insurance price than those in small towns or rural areas.

How much you drive
• People who use their car for business and long-distance commuting normally pay a higher car insurance premium than those who drive less.

Your age, sex and marital status
• Accident rates are higher for all drivers under age 25, especially young males and single males. Car insurance prices in most states reflect these differences.

Your driving record
• Drivers who cause accidents generally must pay higher car insurance premiums than those who are accident-free for several years.

Your credit history
• Studies have shown that credit history is a powerful predictor of future auto insurance losses.
• Many insurance companies consider certain credit characteristics in addition to many other factors when determining an individual's car insurance premium.

*Based on the State Farm "What Affects Car Insurance Price?" website. URL: http://www.statefarm.com/insurance/auto_insurance/ins_auto_price.asp.

Handout/Visual 4

Insurance Risk

What are your personal behaviors and decisions that will increase and decrease your automobile insurance costs? Identify the behaviors and decisions, and suggest why they will cause your insurance premiums to increase or decrease.