



UNIVERSITY OF ALBERTA
ALBERTA SCHOOL OF BUSINESS

BUEC 311: Business Economics, Organization and Management

Topic 1: An Introduction to Managerial Economics

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Economics isn't just business or dollars

The One Word That Explains Why Economics Professors Are Not Billionaires

This would change the financial experts you listen to



David O.

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Jun 19 · 8 min read ★



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Economics is a way of thinking
Dollars provide a unit of measure



Economics as a *Way of Thinking*

- Economics is a **way of thinking** based on a few core ideas:



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- **People respond to incentives**
 - Money, punishment, taxes and subsidies, risk of injury, reputation, profits, sex, effort, morals



Economics as a *Way of Thinking*

- Economics is a **way of thinking** based on a few core ideas:
- **People respond to incentives**
 - Money, punishment, taxes and subsidies, risk of injury, reputation, profits, sex, effort, morals
- **Environments adjust until they are in equilibrium**
 - People make adjustments until their choices are optimal given others' actions



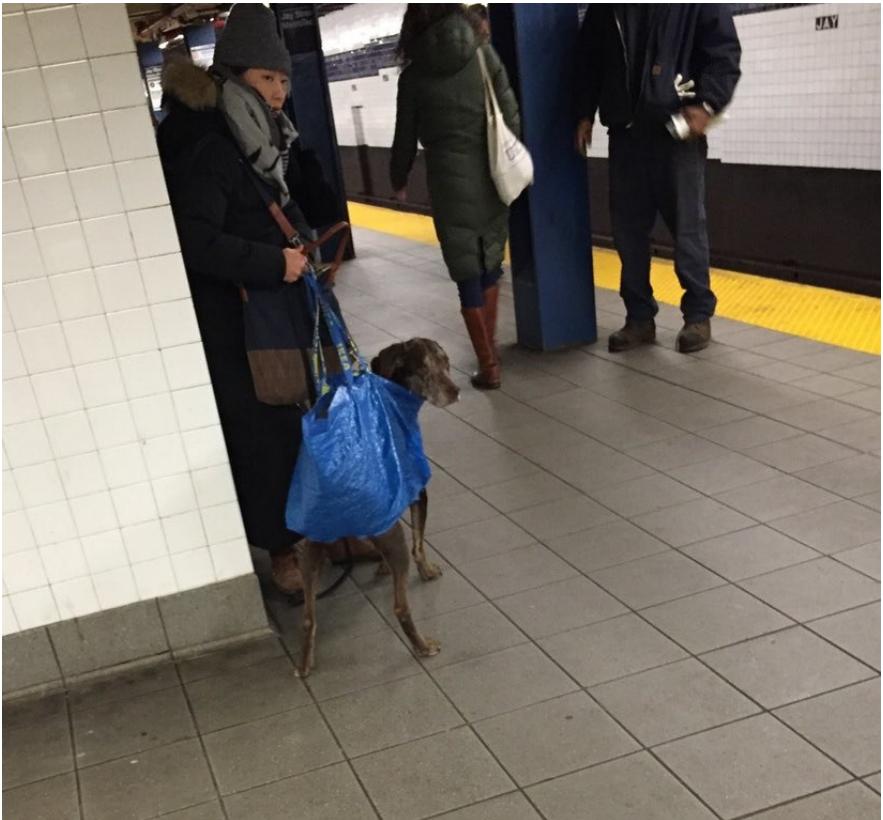
Incentives Example: Dogs on the subway



The NYC Subway bans dogs unless they can be "enclosed in a container". Source: [Ryan Safner](#)



Incentives Example: Subway II



Pictures [Source](#), via [Ryan Safner](#)



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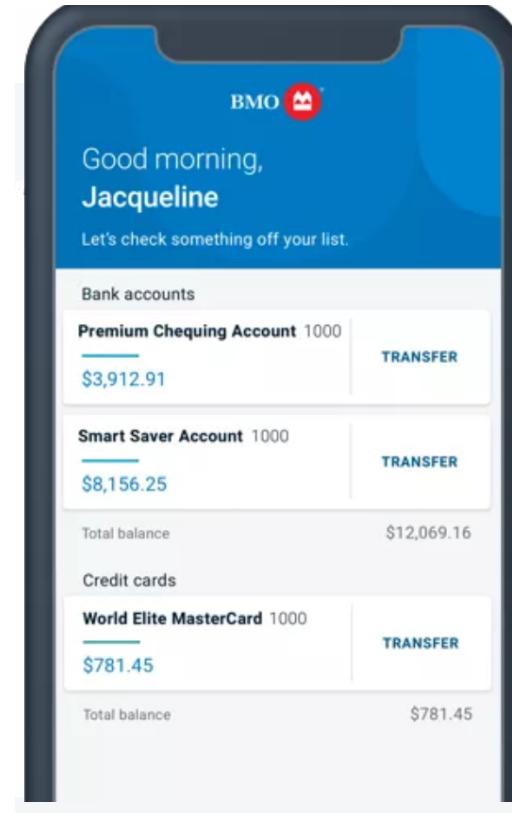
Incentives Example: England's window tax

The British government, in 1696, was looking for a way to impose a wealth-based property tax. **Solution:** They imposed a tax payable based on the number of windows in your dwelling, on the premise that larger houses had more windows.

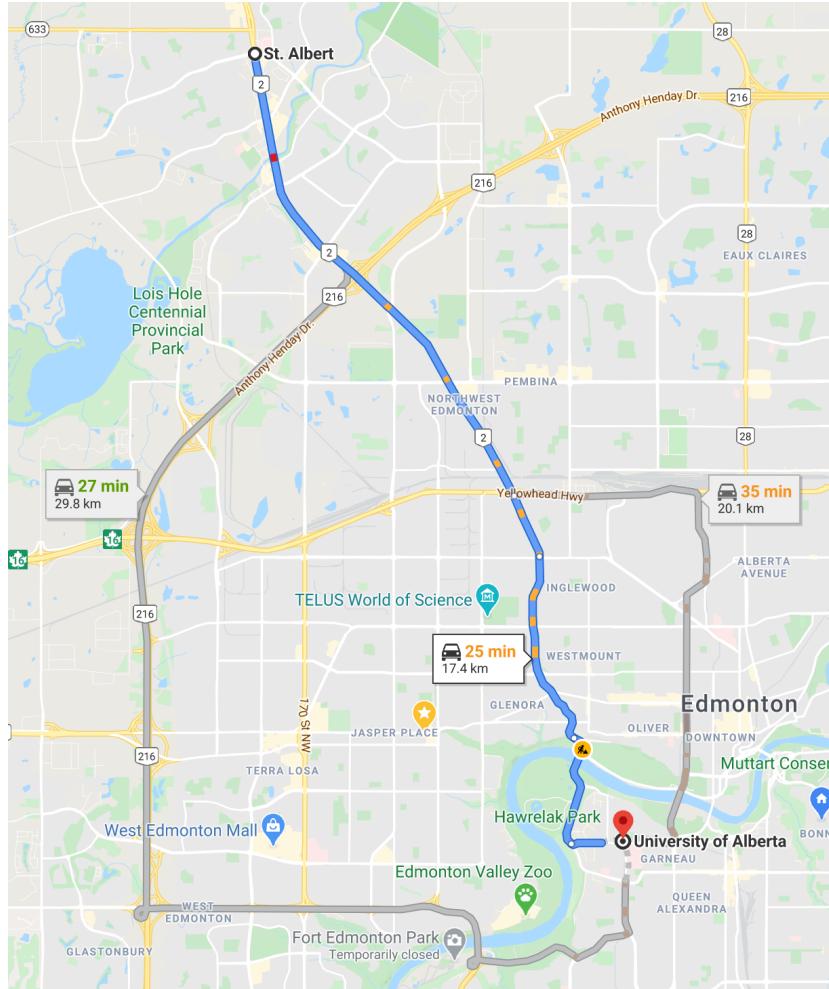


Economics as a *Way of Thinking*

- Economics is a **way of thinking** based on a few core ideas:
- **Economic agents have goals**
 - Personal satisfaction
 - Profit
- **Constraints impair agents' goal seeking**
 - Budget constraints
 - Production technology
 - Resource constraints
- **Agents optimize subject to constraints**
- **Joint optimization leads to equilibrium**



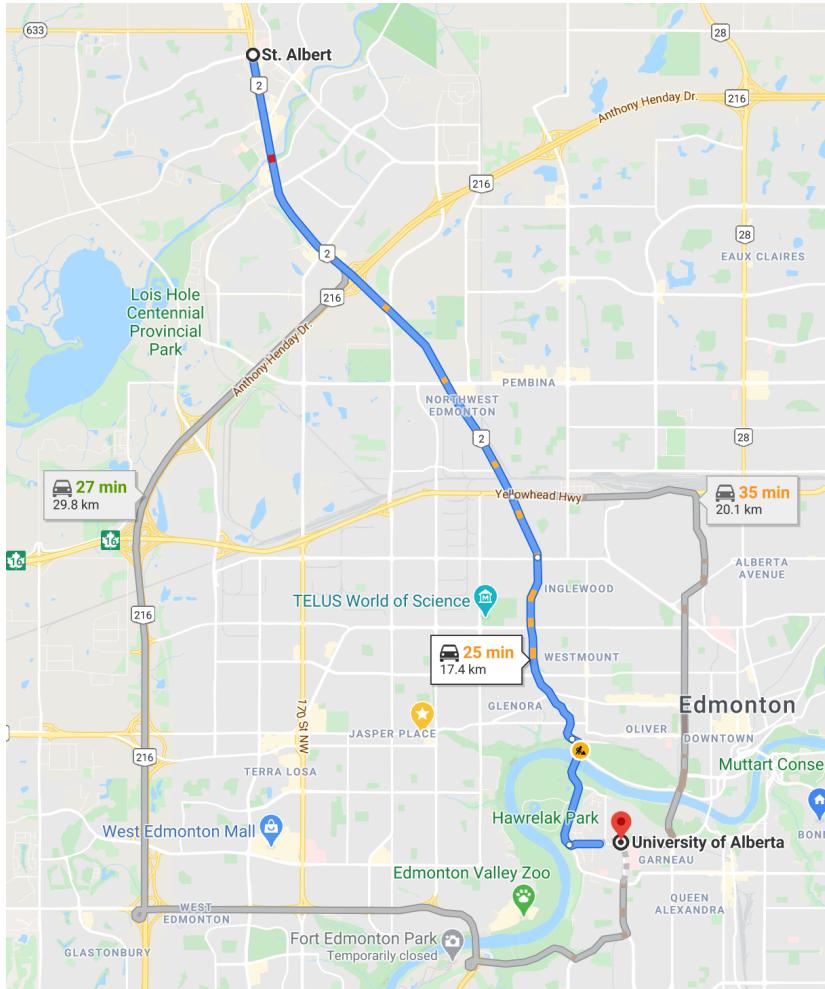
Equilibrium Example I



- Consider the two routes from St. Albert to the U of A
 - Simplified example: 1000 cars commute
 - Messier Trail / Groat Road travel time: $25 \text{ min} + 1 \text{ min} / 100 \text{ extra cars}$
 - Anthony Henday: 30 minutes (always)



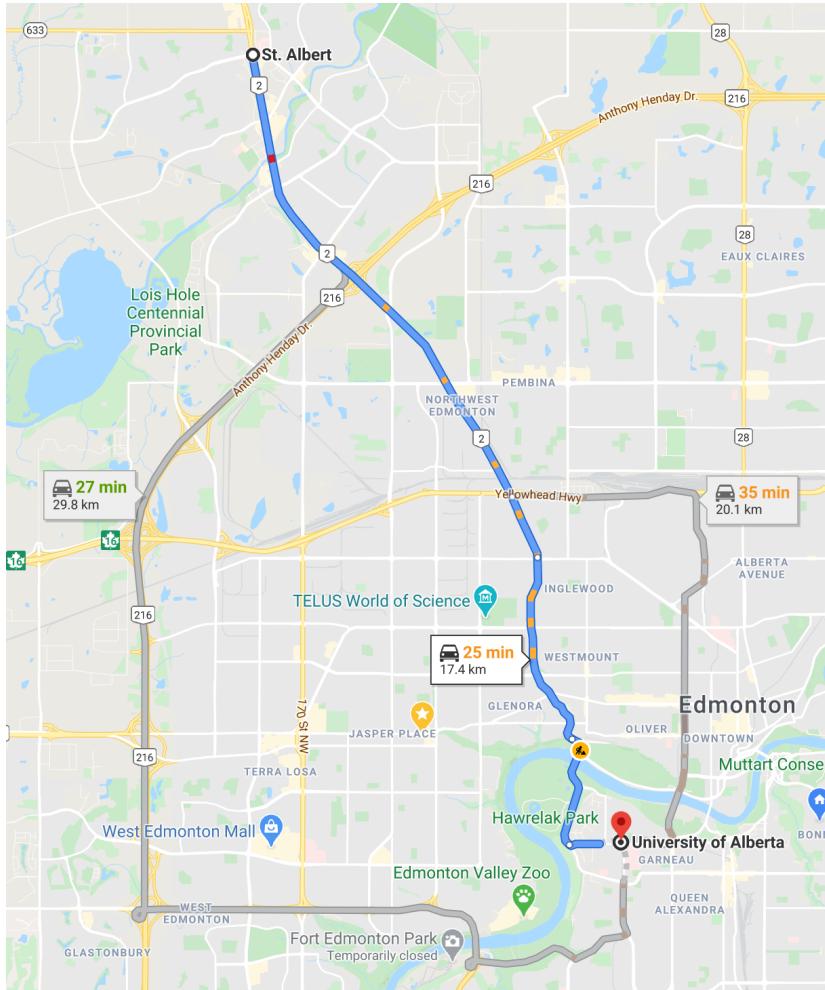
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- Assume people **optimize**: choose road to **minimize travel time**



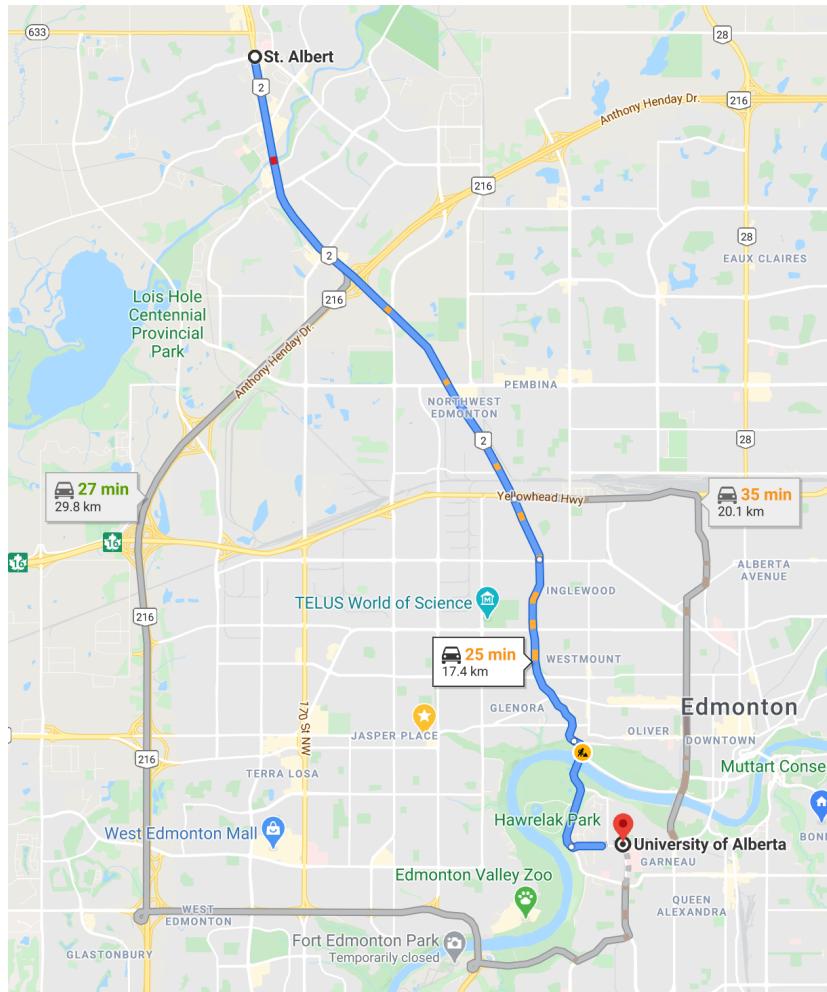
Equilibrium Example II



- Consider the two routes from St. Albert to the U of A
 - Simplified example: 1000 cars commute
 - Messier Trail / Groat Road travel time: $25 \text{ min} + 1 \text{ min} / 100 \text{ extra cars}$
 - Anthony Henday: 30 minutes (always)
- Assume people **optimize**: choose road to **minimize travel time**
- **Scenario I: Fewer than 500 cars** choose Groat Road
 - What will people do?



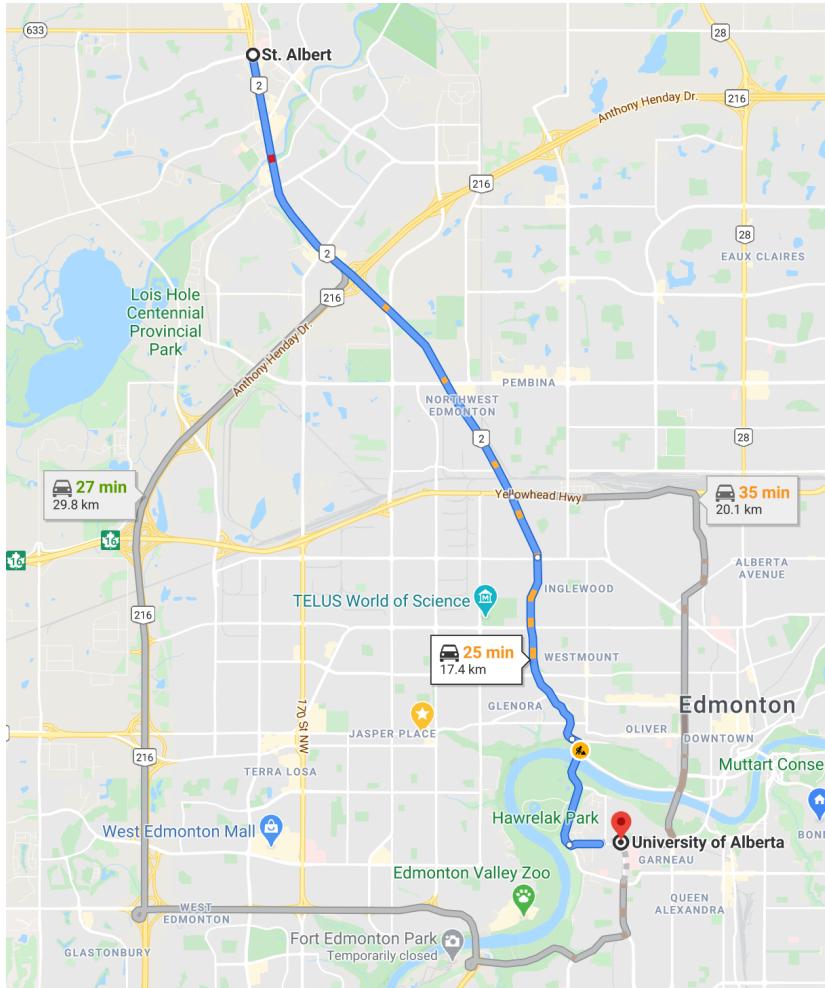
Equilibrium Example III



- Consider the two routes from St. Albert to the U of A
 - Simplified example: 1000 cars commute
 - Messier Trail / Groat Road travel time: $25 \text{ min} + 1 \text{ min} / 100 \text{ extra cars}$
 - Anthony Henday: 30 minutes (always)
- Assume people **optimize**: choose road to **minimize travel time**
- **Scenario I: More than 500 cars** choose Groat Road
 - What will people do?



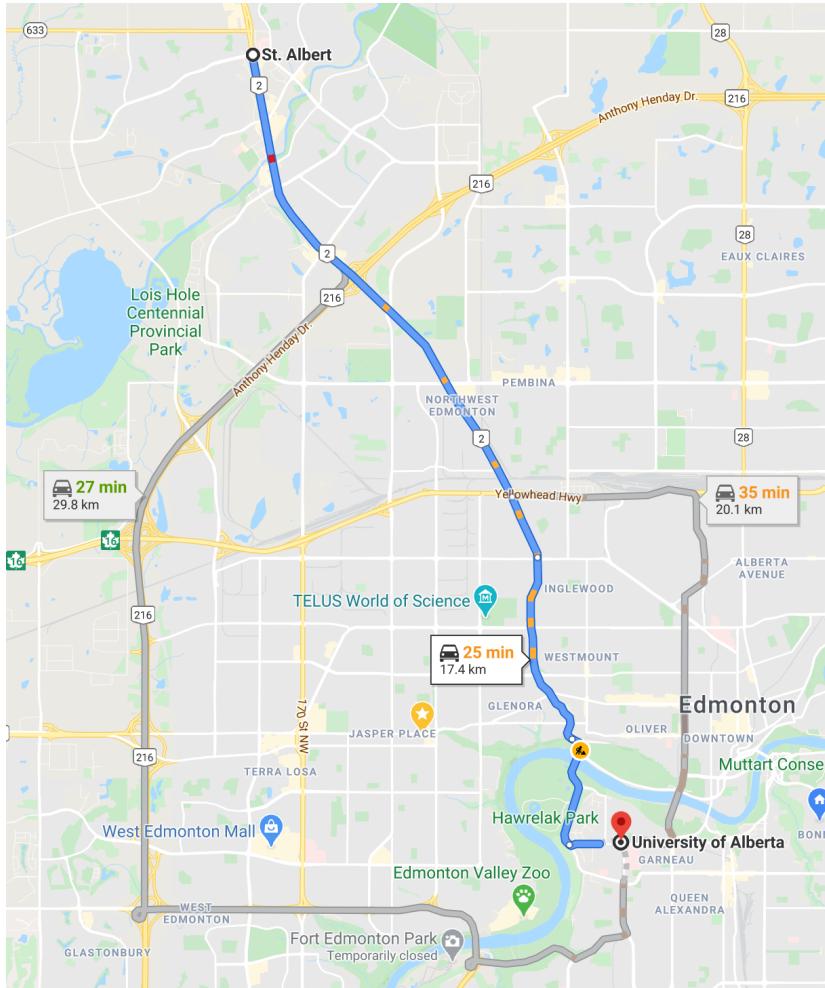
Equilibrium Example IV



- Consider the two routes from St. Albert to the U of A
 - Simplified example: 1000 cars commute
 - Messier Trail / Groat Road travel time: $25 \text{ min} + 1 \text{ min} / 100 \text{ extra cars}$
 - Anthony Henday: 30 minutes (always)
- Assume people **optimize**: choose road to **minimize travel time**
- **In Equilibrium**: How many cars are on each road?



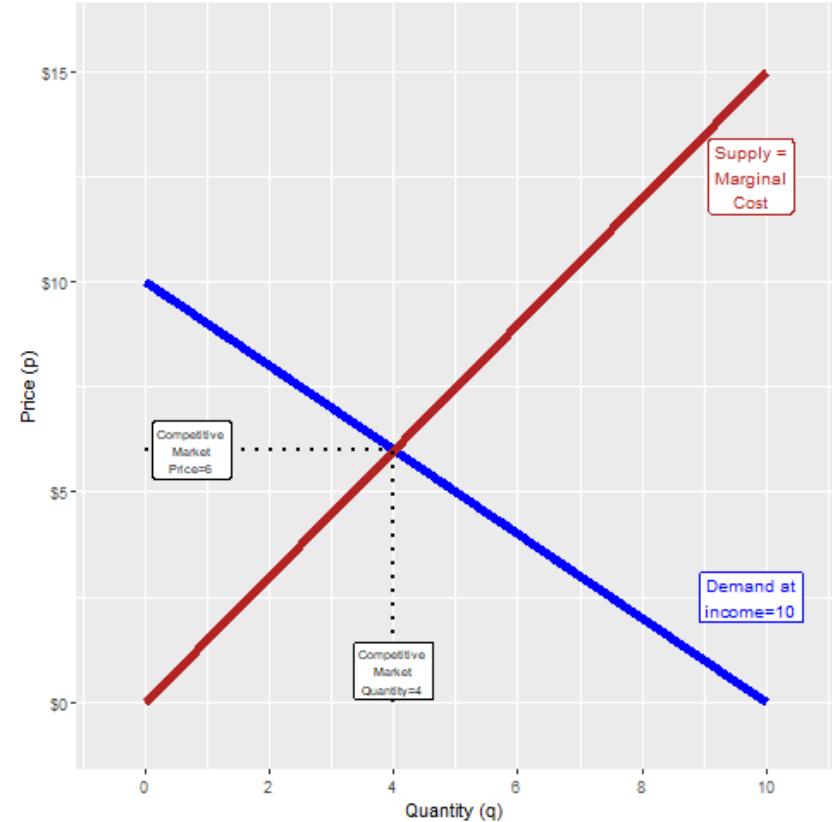
Equilibrium Example IV



- Consider the two routes from St. Albert to the U of A
 - Simplified example: 1000 cars commute
 - Messier Trail / Groat Road travel time: $25 \text{ min} + 1 \text{ min} / 100 \text{ extra cars}$
 - Anthony Henday: 30 minutes (always)
- Assume people **optimize**: choose road to **minimize travel time**
- What happens **in equilibrium** as Groat bridge is expanded, reducing commute time to $22 \text{ min} + 1 \text{ min} / 100 \text{ extra cars?}$

More vocabulary

- **Comparative statics:** examining changes in equilibria caused by an external change (in incentives, constraints, etc.)
 - Most of what we do in this class will fall into this category
- Comparative dynamic analysis is possible but much more challenging: math is harder when it moves!



More vocabulary

- If economic agents can **learn** and **change** their behavior, they will always **switch** to a higher-valued option
- If there are no alternatives that are better, people are at an **optimum**
- If everyone is at an optimum, the system is in **equilibrium**



Why We Model I

- Economists often "speak" in models that explain and predict human behavior
- The language of models is mathematics
- Mathematical inference is expressed through equations and graphs
- This is what scares students most about economics. Don't let it scare you.

$$C(S_t, t) = S_t N(d_1) - K e^{-r(T-t)} N(d_2)$$

where,

$$N(x) = \frac{1}{\sqrt{2\pi}} \int_{-\infty}^x e^{-\frac{y^2}{2}} dy$$

$$d_1 = \frac{\log(\frac{S_t}{K}) + (r + \frac{\sigma^2}{2})(T - t)}{\sigma\sqrt{T - t}}$$

$$d_2 = \frac{\log(\frac{S_t}{K}) + (r - \frac{\sigma^2}{2})(T - t)}{\sigma\sqrt{T - t}}$$

K : Option exercise price at maturity



Why We Model II

- Economists use conceptual models: fictional constructions to logically examine consequences
- Economics is broader than just mathematical models:
 - Economists run experiments
 - Economists analyze data
 - Economists make predictions
- Math is a tool, it's not the goal



Esther Duflos, Nobel-prize-winning economist (Source: MIT)

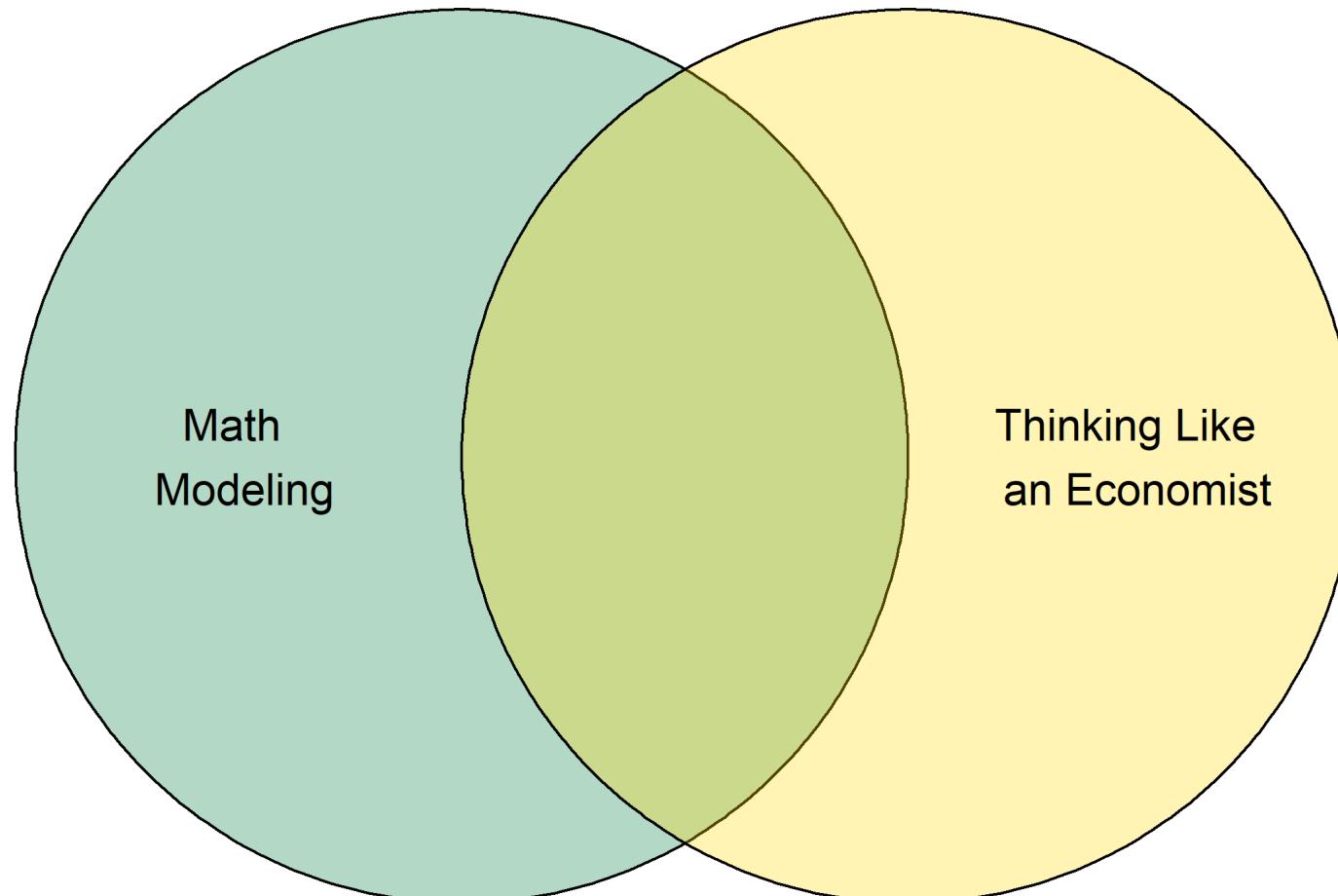
Remember: All Models are Wrong!

Caution: Don't conflate models with reality!

- Models help us *understand* reality.
- A good economist is always aware of:
 - the limits of their model
 - the key underlying assumptions
 - "*ceteris paribus*" (all else equal)
 - "...and then what?" (is the system in equilibrium?)
 - "...compared to what?" (counterfactual analysis)



Economics uses, but is not limited to, math



Positive and Normative Statements

- Economics alone can't tell you the **right** decision
- A positive statement is a statement of what **is** or what **will happen** and describes reality.
 - If you increase the costs of production, consumer prices will go up.
- Positive statements can reflect **uncertainty** about outcomes
- A normative statement concerns what somebody believes **should** happen:
 - “The government should tax greenhouse gas emissions.”
 - Normative statements cannot be tested because they imply value judgments which cannot be refuted by evidence.
- Normative statements can inform objective functions
 - A decision-maker might look for a policy which does not increase inequality
 - Economists can provide constrained advice: this policy accomplishes your objective and **is unlikely to** increase inequality



Wolfers and Stevenson's Basic Principles

Think Like An Economist

Why Should You Think Like an Economist?



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DESCRIPTION



00:00 / 15:26



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Wolfers and Stevenson's Basic Principles

Principle # 1: The cost-benefit principle

Think Like An Economist

Core Principle 1 - The Cost-Benefit Principle

SHARE SUBSCRIBE DOWNLOAD DESCRIPTION

00:00 / 17:59

- What are the benefits and costs of each decision?
- Why do we measure in dollars?
 - "Economists love dollars as much as architects love inches"
- Are you getting a good deal?



Wolfers and Stevenson's Basic Principles

Principle # 2: The opportunity cost principle

The image shows a YouTube video player interface. At the top, it displays the channel name "Think Like An Economist" and the video title "Core Principle 2 - The Opportunity Cost Principle". Below the title are four interactive buttons: "SHARE", "SUBSCRIBE", "DOWNLOAD", and "DESCRIPTION". In the center is a large blue circular play button with a white triangle pointing right. To the right of the play button is a small volume icon. At the bottom left, the video progress bar shows "00:00 / 17:50". The background of the player is white.

- Or what?
 - should I take this class or that one?
 - should I major in BUEC or MKTG
 - should I take this job or this internship?
- What's my next-best alternative?



Wolfers and Stevenson's Basic Principles

Principle # 3: The marginal principle

The image shows a YouTube video player interface. At the top, it displays the channel name "Think Like An Economist" and the video title "Core Principle 3 - The Marginal Principle". Below the title are four interactive buttons: "SHARE", "SUBSCRIBE", "DOWNLOAD", and "DESCRIPTION". The main area features a large blue circular play button with a white triangle pointing right. To its right is the video progress bar, which shows "00:00 / 15:25". In the bottom right corner of the video area, there is a small speaker icon indicating audio availability.

- Should we buy/sell one more?
- Should we hire one more staff?
- Should I add another class to my schedule?
- Should I drop a class?

Wolfers and Stevenson's Basic Principles

Principle # 4: The interdependence principle

The image shows a video player interface. At the top left, it says "Think Like An Economist" and "Core Principle 4 - The Interdependence Principle". On the right, there is a small logo for "ART101". Below the title are four buttons: "SHARE", "SUBSCRIBE", "DOWNLOAD", and "DESCRIPTION". In the center is a large blue play button with a white triangle pointing right. To its right is the text "00:00 / 11:46". At the bottom right is a small speaker icon.

- All else equal...but is it?
- What happens to my best decision when other factors change?
- Does my value depend on what others do? Network externalities?