



UNIVERSITY OF ALBERTA  
ALBERTA SCHOOL OF BUSINESS

# BUEC 311: Business Economics, Organization and Management

## Topic 1: An Introduction to Managerial Economics

Andrew Leach, Associate Professor of Business Economics

 [aleach@ualberta.ca](mailto:aleach@ualberta.ca)

 [leachandrew](#)

 [@andrew\\_leach](#)

# Welcome!

- Some quick facts about me:
  - I grew up in Ottawa
  - I have degrees in environmental science, economics and law
  - My academic interests are law and economics, environmental policy and energy markets
  - I've also worked in various governmental advisory roles
  - This is my second time teaching this class



# Welcome!

- Beyond the classroom
  - I have two kids aged 11 and 13
  - I have a dog named Kona
  - My main hobby is cycling, and I also play hockey and dabble in woodworking
  - I have a serious Twitter addiction
- My expectations of you, your expectations of me
- Dealing with the circumstances



# About This Course



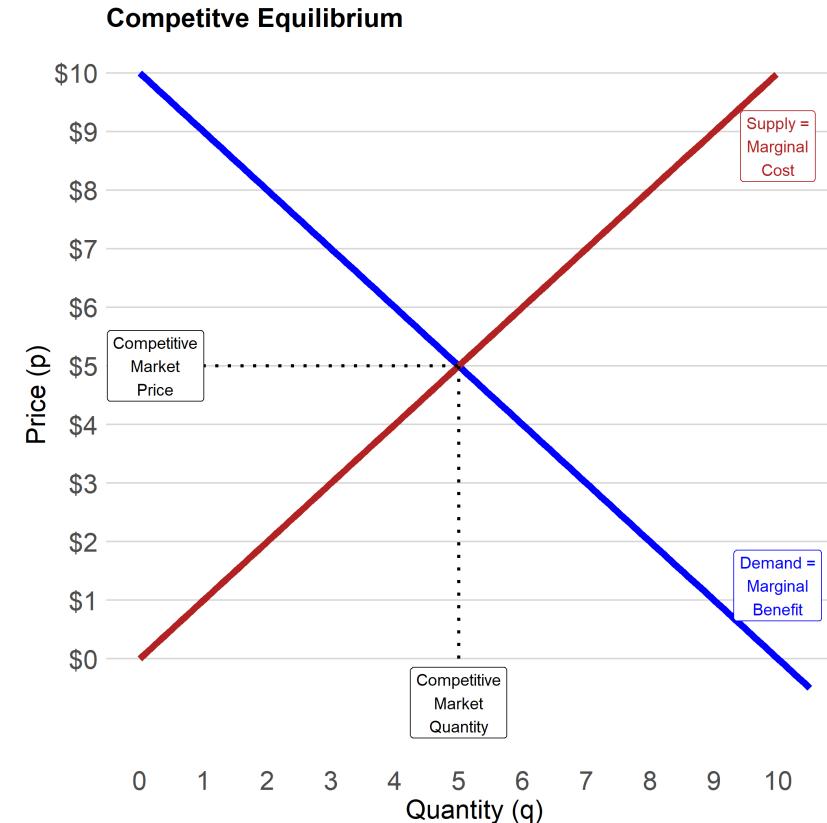
# Learning Goals

By the end of this course, you will:

1. apply economic models to managerial and government decisions
2. explore the effects of economic and political processes on market performance
  - competition, market prices, profits and losses, property rights, entrepreneurship, market power, market failures, public policy, government failures
3. apply the economic way of thinking to real world issues
4. be able to access and interpret relevant economic data

# Learning Objectives

- The language of economics
  - What do you mean by...
- Economics as a tool for decision making
  - How to use economics to become a better manager, policy analyst, etc.
- Why economic models are wrong
  - The importance of simplification
- When, why, and how to use them
  - Used correctly, a simple model can be a powerful tool
  - Used incorrectly, the same model can lead to bad decisions



# Class delivery

- Regular class meetings will in person unless circumstances force us online
- Each section will have 2 weekly in-person meetings, plus a recorded problem solving and review session
  - T/TH classes during scheduled meeting times will last only (approximately) 50 minutes, supplemented by the recorded problem solving and review session
  - M/W/F classes will have synchronous meetings during the first two scheduled meeting times of the week (usually M/W, unless M is a holiday) and the third class session will be the asynchronous problem solving and review class
- At least one session for each will be recorded during the week, and posted on the eClass site to allow you to catch up

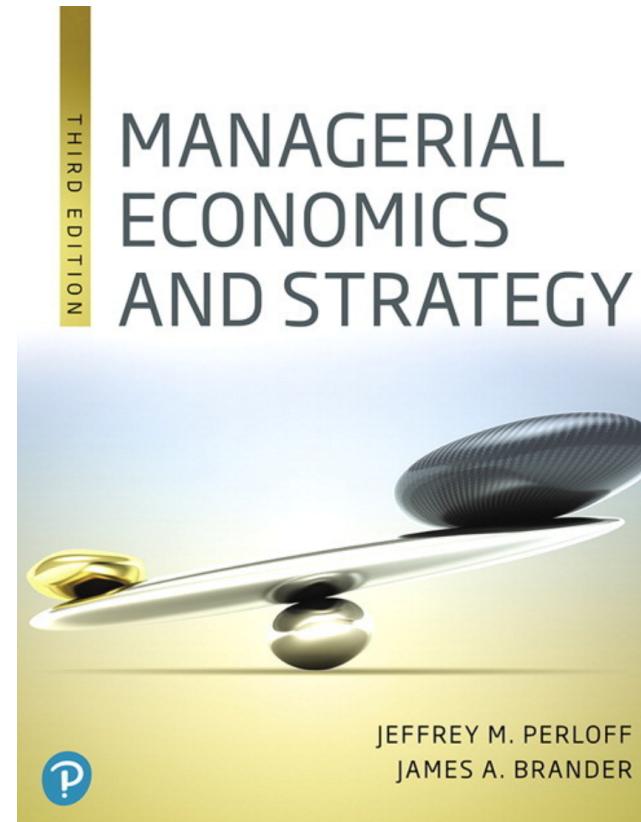
# Materials

- eClass and my [supplementary website](#)
- slides and problem sets
- podcasts and other media
- data
- textbook



# Textbook

Perloff, J. M., and J. A. Brander. Managerial Economics & Strategy. 3rd ed. NJ: Pearson, 2020.



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# Communication

- eClass announcements
- Email
- Twitter
- Class discussion and lecture materials



# Assignments

Task	Type	Weight
Flipgrid videos (4+) online, one per month		20%
Quizzes (2)	In class	20%
Midterm	In class	20%
Final	As scheduled	40%



# Evaluation

Minimum	Maximum	Grade
90	100	A+
85	90	A
80	85	A-
77	80	B+
73	77	B
70	73	B-
67	70	C+
63	67	C
60	63	C-
55	60	D+
50	55	D
0	50	F



# Tips for Success

- Attend class.
- Take notes.
- Read the readings and do the problems.
- Work together.
- Ask questions, participate, and attend tutorials and virtual office hours.
- Don't struggle in silence, you are not alone!



# Roadmap for the Semester

- Topic 1: Introduction to the class, topics and goals as well as a summary of deliverables.
- Topic 2: Supply and demand (Ch. 2 and 3)
- Quiz 1: Week of Sept 27th, details TBA
- Topic 3: The Consumer (Parts of Ch. 3 and 4)
- Topic 4: The Firm (Ch. 5, 6, 7)
- Midterm: Week of October 27th, details TBA
- Topic 5: The Market (Ch. 8, 9, 10)
- Quiz 2: Week of November 24, details TBA
- Topic 6: Competition, Strategic Behaviour, Game Theory (Ch. 11, 12, 13)
- Topic 7: When Markets Fail (Ch. 15, 16)
- Final exam: During exam period, details TBA.



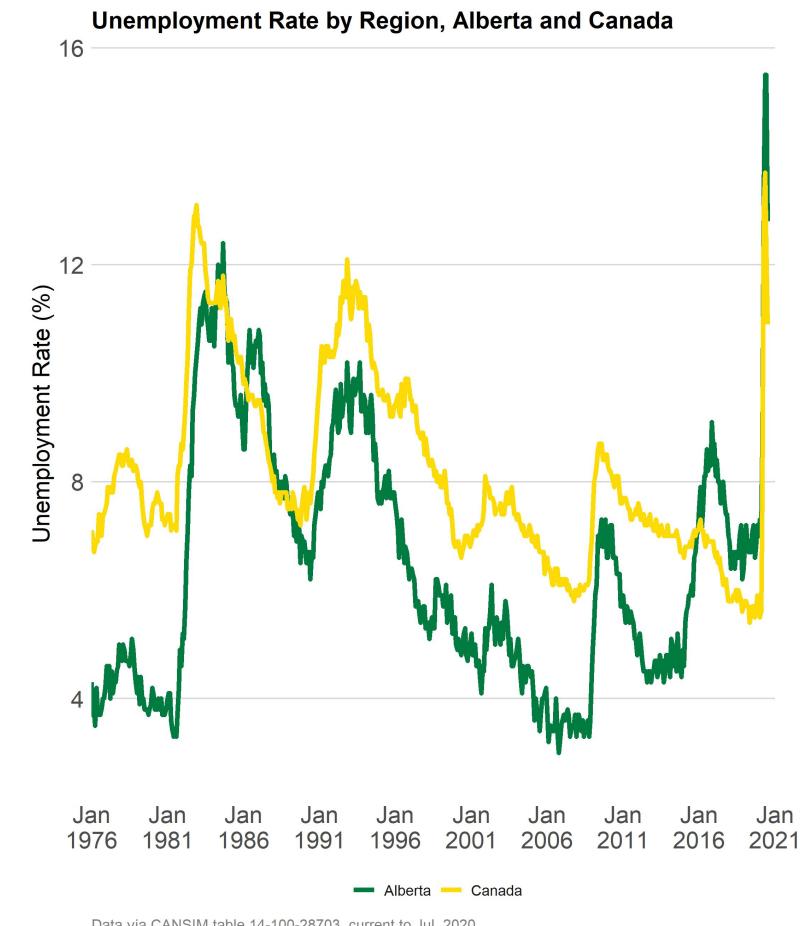
# *Micro-economics*

- individual and firm decision-making
- prices
- labour market decisions
- strategic behaviour and game theory
- sports (?!?!)
- marriage (?!?!)
- criminal behaviour (?!?!)
- pollution (?!?!)



# Micro- vs. Macro-economics

- Macroeconomics studies the economy: the interactions of economic agents (people, firms, governments) over time
- Macro uses aggregates (GDP, unemployment, & inflation) and studies the behaviour of these measures in response to shocks
- Microeconomics is the study of constrained choices and consequences by individual economic agents
- Macroeconomics is what happens when you put all the micro together



# What about Managerial Economics?

- Managerial economics is effectively applied microeconomics with a focus on management
- More emphasis on the theory of the firm, profit maximization, competition, and strategy
- You'll see (I hope) elements of your business plans, case studies, and other business strategy translated into a different language

CONSOLIDATED BALANCE SHEETS			
(\$ millions)	Notes	December 31 2019	December 31 2018
<b>Assets</b>			
Current assets			
Cash and cash equivalents	12	1 960	2 221
Accounts receivable		4 052	3 206
Inventories	14	3 761	3 159
Income taxes receivable		133	114
Total current assets		9 906	8 700
Property, plant and equipment, net	5, 15, 16, 33 and 34	72 640	74 245
Exploration and evaluation	17	2 428	2 319
Other assets	18	1 194	1 126
Goodwill and other intangible assets	19	3 058	3 061
Deferred income taxes	10	209	128
Total assets		89 435	89 579
<b>Liabilities and Shareholders' Equity</b>			
Current liabilities			
Short-term debt	20	2 155	3 231
Current portion of long-term debt	20	—	229
Current portion of long-term lease liabilities	5	310	—
Accounts payable and accrued liabilities		6 555	5 647
Current portion of provisions	23	631	667
Income taxes payable		886	535
Total current liabilities		10 537	10 309
Long-term debt	20	12 884	13 890
Long-term lease liabilities	5	2 621	—
Other long-term liabilities	21	2 499	2 346
Provisions	23	8 676	6 984
Deferred income taxes	10 and 15	10 176	12 045
Equity		42 042	44 005
Total liabilities and shareholders' equity		89 435	89 579

The accompanying notes are an integral part of the consolidated financial statements.

Approved on behalf of the Board of Directors:

  
Mark Little  
Director  
February 26, 2020

  
Patricia M. Bedient  
Director



# What does an economist mean when they say...

- Terms you "know" from ordinary life mean **very different things** to economists:

Cost, efficiency, welfare, marginal, profit, public good, discrimination, elasticity, games
- Using these words' "ordinary" meanings will lead to wrong economic conclusions!
- You will need to "relearn" the economic meanings of these words

Is this a public good?



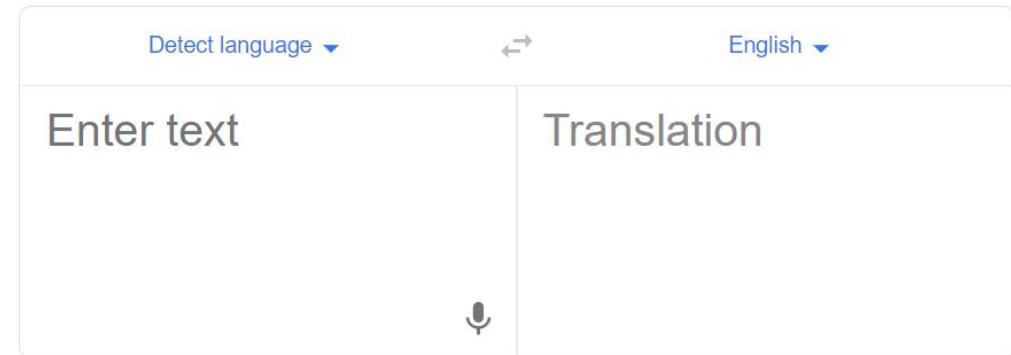
# Economics has its own vocabulary

- You'll need to master a new vocabulary:

externality, marginal rate of transformation, marginal cost, consumer surplus, allocative efficiency

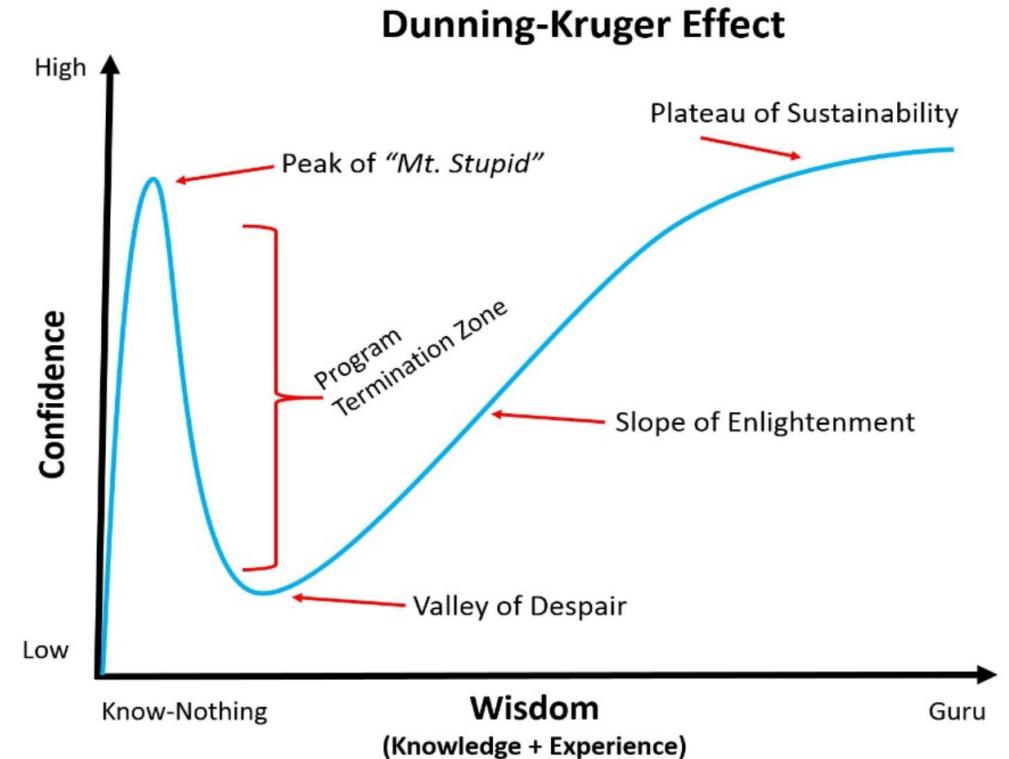
- While I'll try to avoid jargon, I'll be pedantic about certain terms with you because they are important for understanding and to convey consistent meanings

Unfortunately, an economics translator doesn't exist on Google



# You Can Learn To Think Like an Economist

- People often think they are already an economist and can speak this foreign language
- Be humble, and open to new ideas
- Economics is *often* common sense, but it takes time to grasp and apply the tools
- Don't give up too soon



# 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.

Follow

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:



# Economics as a *Way of Thinking*

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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



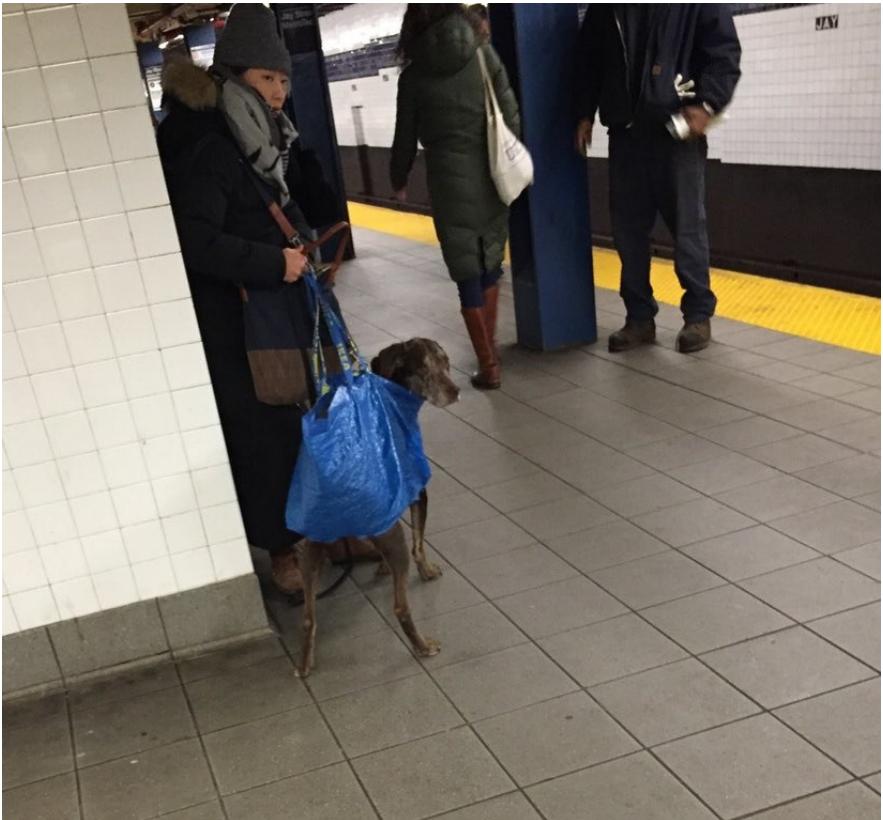
# Incentives Example: Dogs on the subway



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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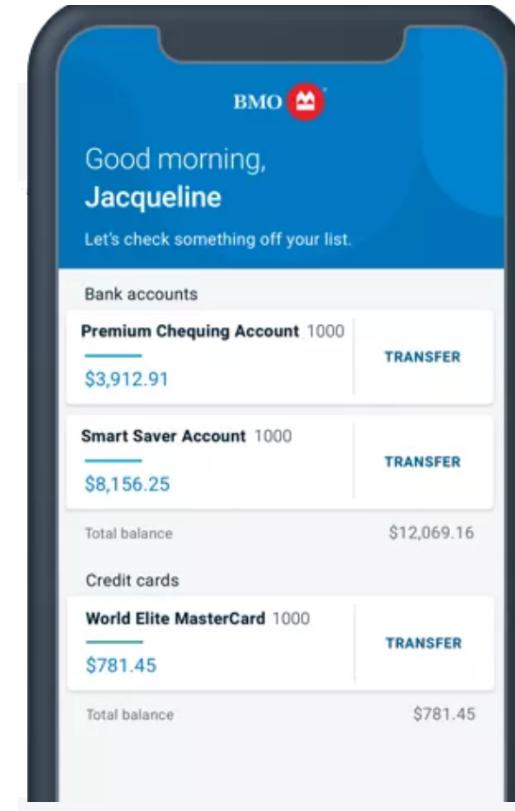
# Incentives Example: England's window tax

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.

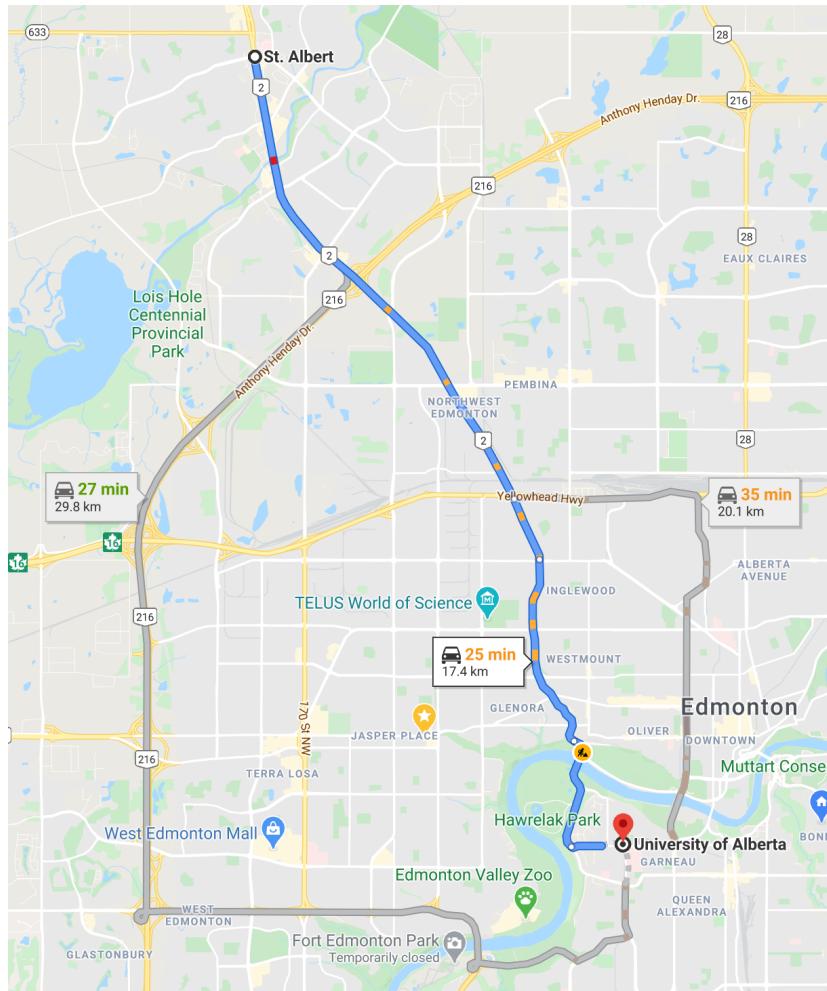


# Economics as a *Way of Thinking*

- 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**



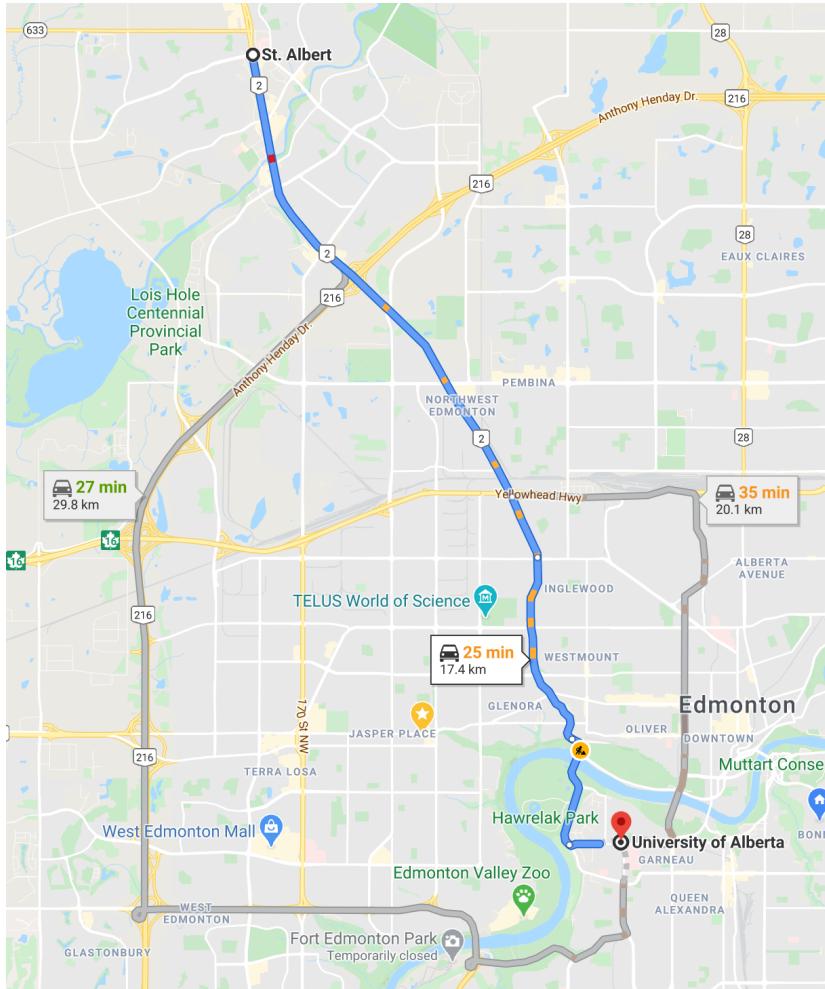
# Equilibrium Example I



- 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)



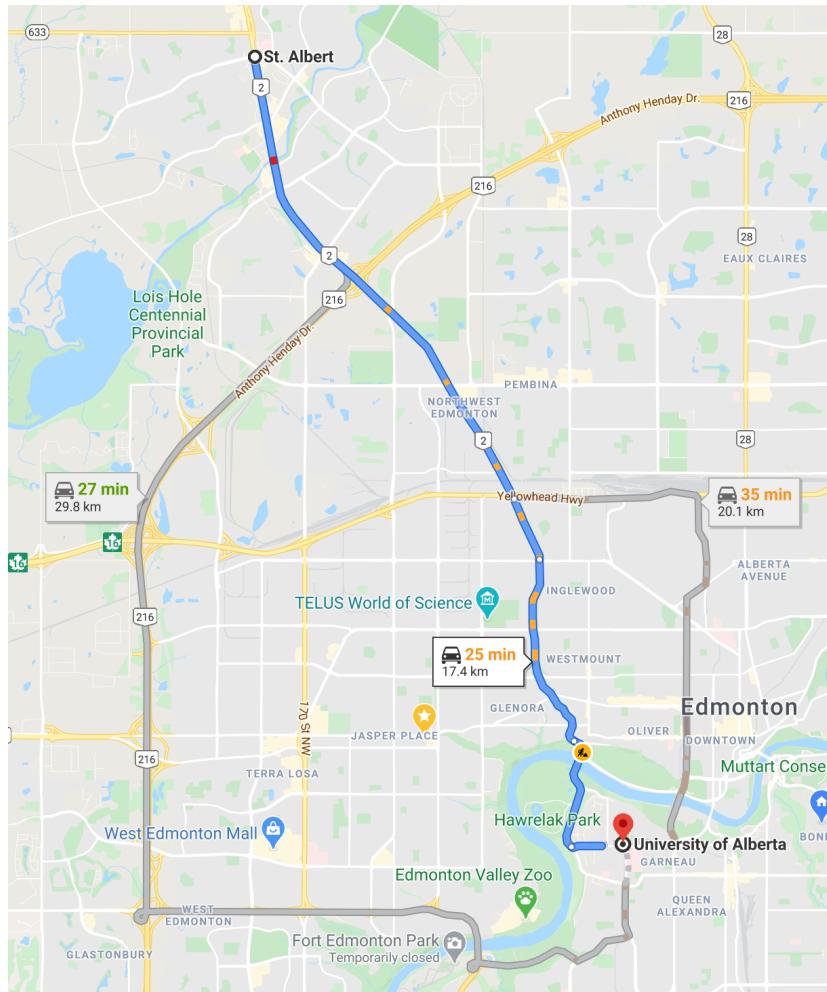
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- Assume people **optimize**: choose road to **minimize travel time**



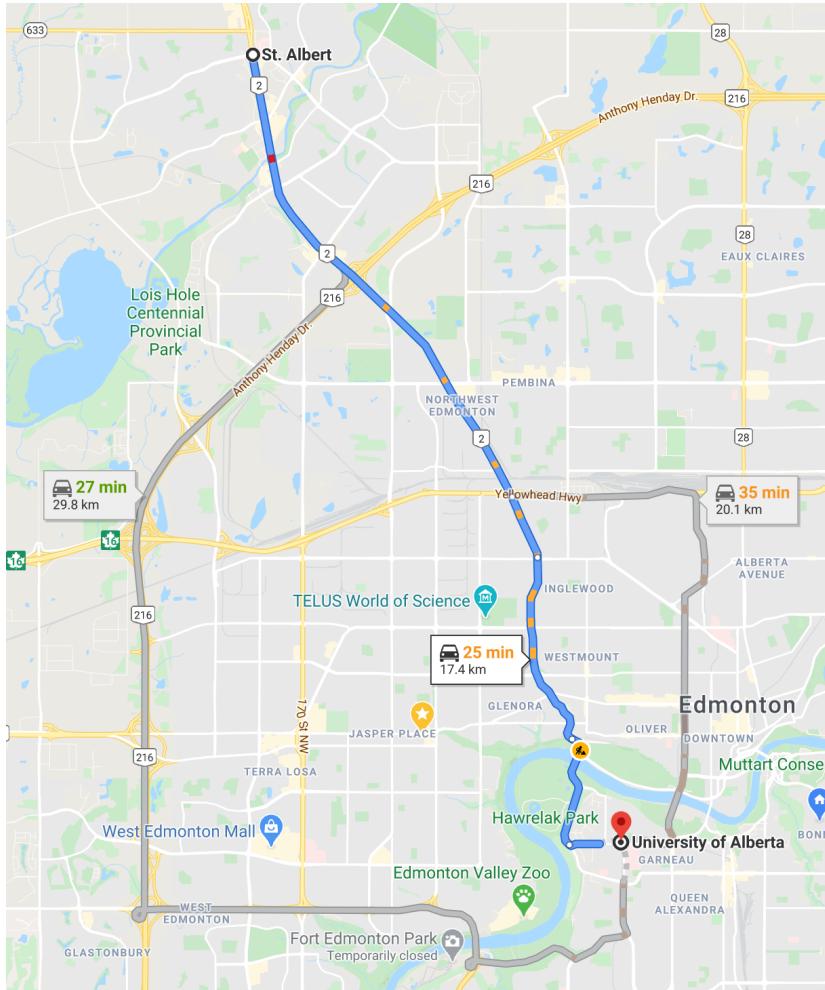
# Equilibrium Example II



- 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?



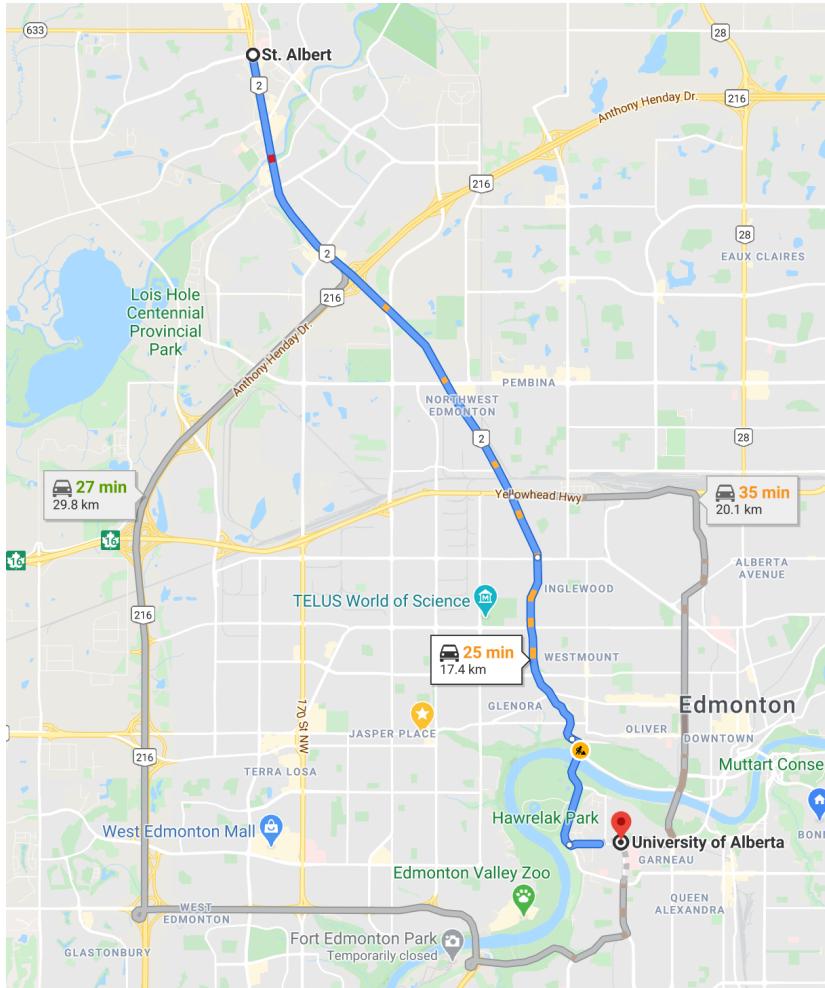
# Equilibrium Example III



- 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?



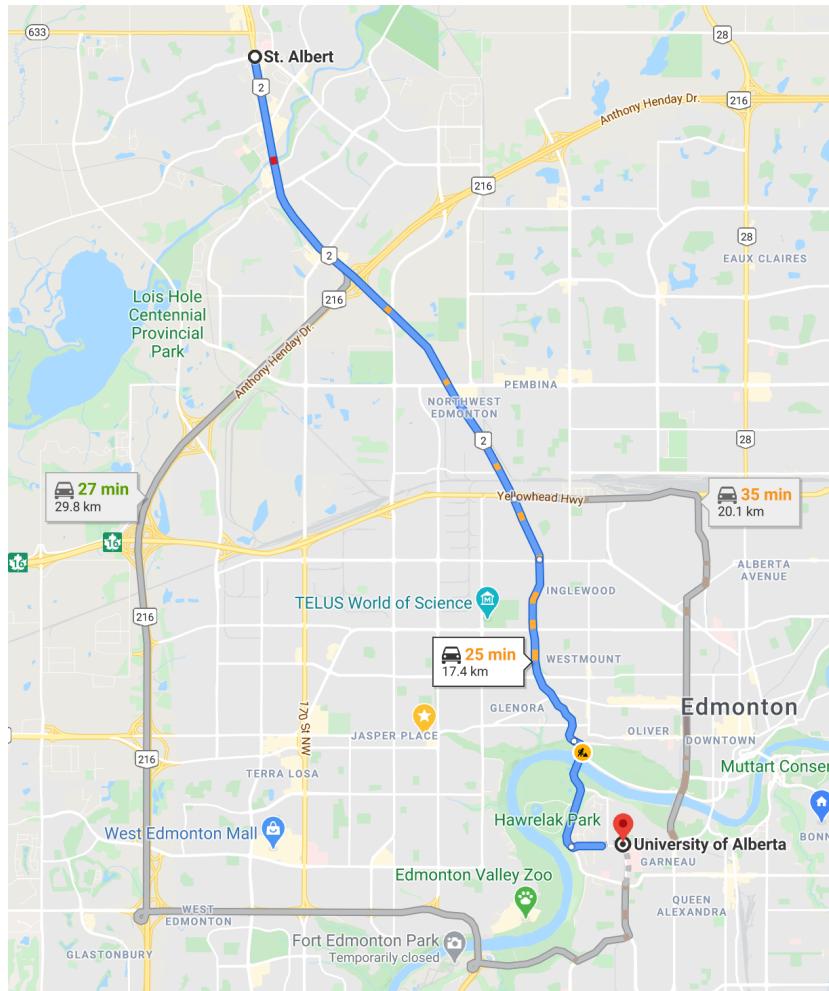
# Equilibrium Example IV



- 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:  $25 \text{ min} + 1 \text{ min/100 extra cars}$
  - 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  $22 \text{ min} + 1 \text{ min/100 extra cars?}$



# Wolfers and Stevenson's Basic Principles

Think Like An Economist

Why Should You Think Like an Economist?



Why Should You Think Like an Economist?



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 - The Pros & Cons

Core Principle 1 - The Cost-Benefit Principle - The Pros & Cons

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 left, it says "Think Like An Economist". In the center, the video title is "Core Principle 2 - The Opportunity Cost Principle - Or What?". On the right, there is a small logo for "ART101". Below the title are four buttons: "SHARE", "SUBSCRIBE", "DOWNLOAD", and "DESCRIPTION". In the middle left is a large blue play button icon. To its right is the video progress bar showing "00:00 / 17:50". On the far right of the progress bar is a small speaker icon.

- 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

Think Like An Economist

Core Principle 3 - The Marginal Principle - Just One More?

Core Principle 3 - The Marginal Principle - Just One

SHARE SUBSCRIBE DOWNLOAD DESCRIPTION



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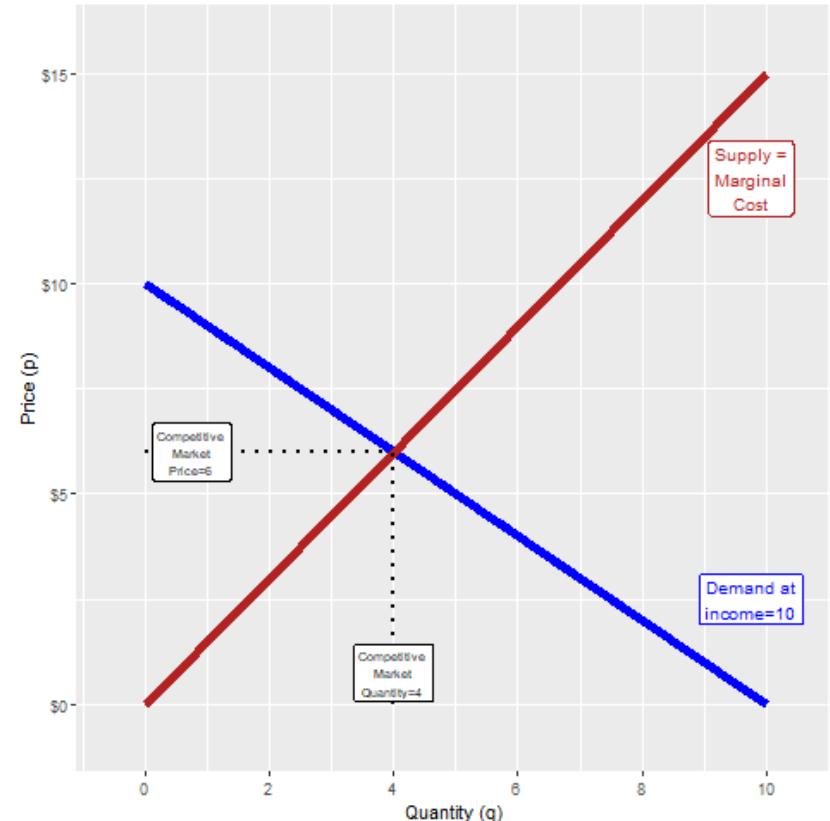
Speaker icon

- 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?



# 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!



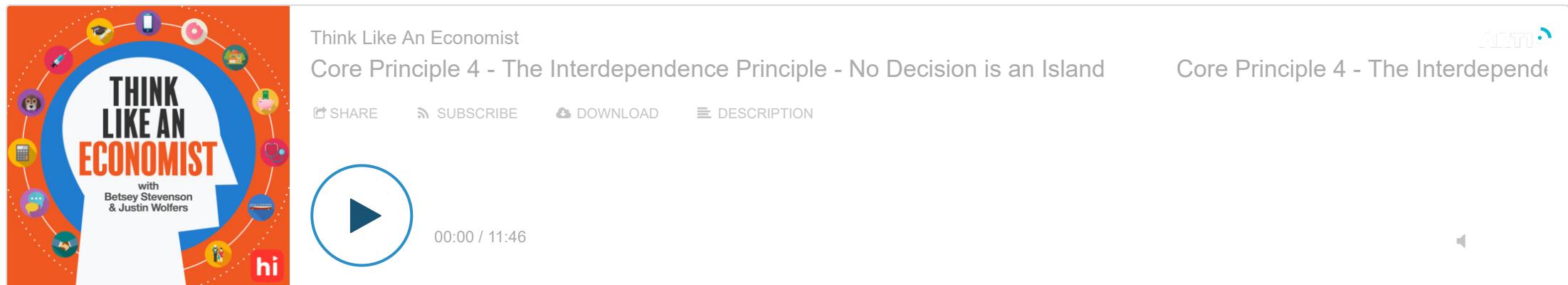
# More vocabulary

- 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**



# Wolfers and Stevenson's Basic Principles

## Principle # 4: The interdependence principle



- 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?

# 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)

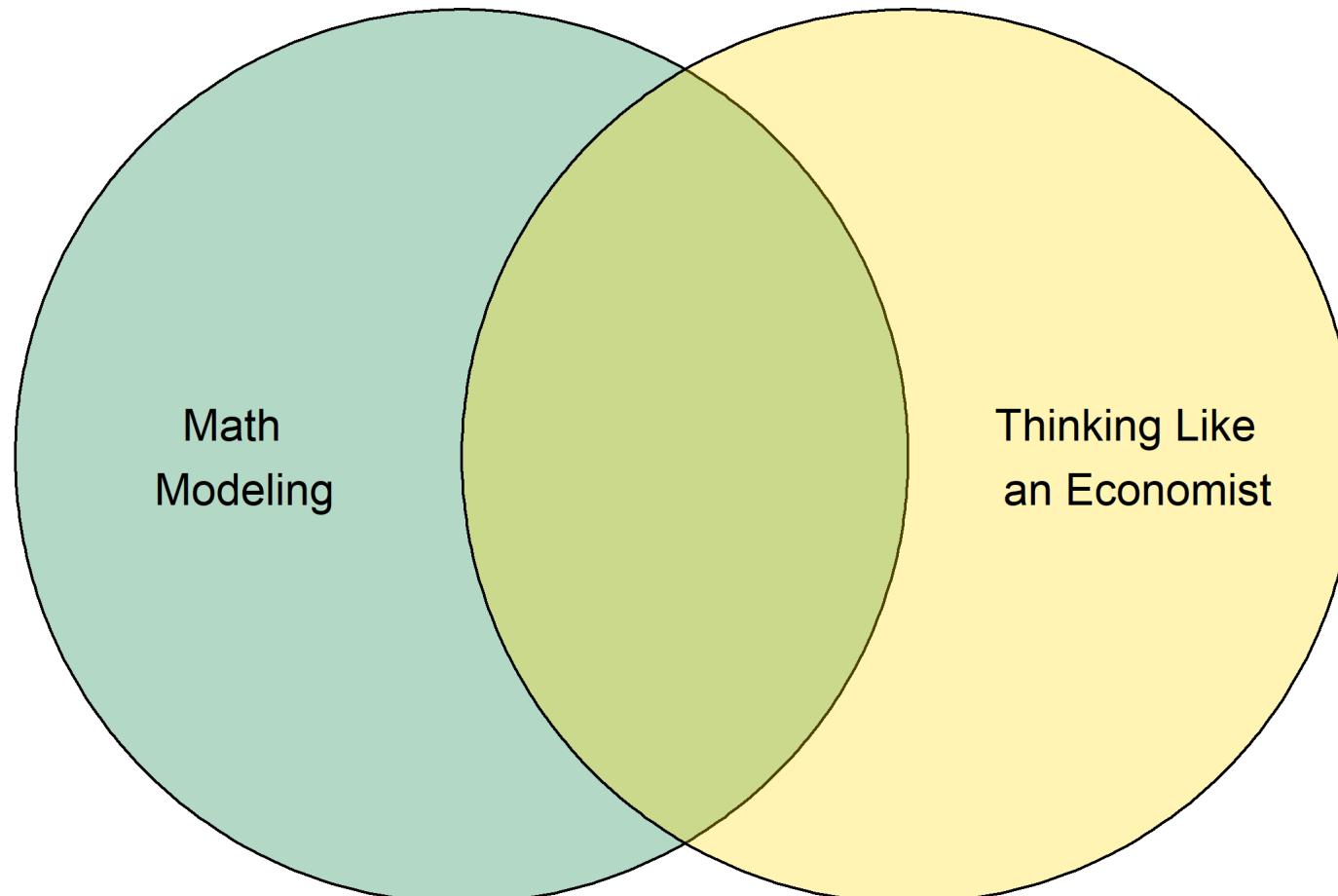
# Remember: All Models are Wrong!

**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

