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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@andrew_leach

Welcome!

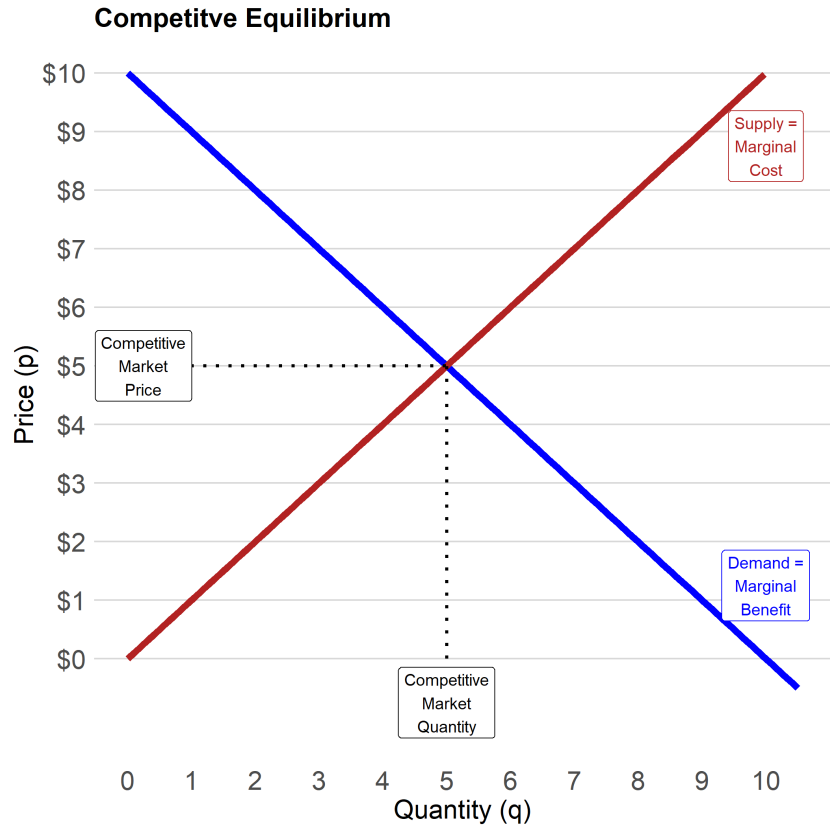
- Some quick facts about me:
  - I grew up in Ottawa
  - I have degrees in environmental science, economics and (soon) law
  - My academic interests are environmental policy and energy markets
  - I've also worked in various governmental advisory roles
  - This is my first time teaching this class and I'm excited to share my passion for economics with you

Welcome!

- Beyond the webcam
  - I have two kids who you'll likely see on the webcam at some point
  - I have a dog named Kona, and you may see him as well
  - My main hobby is cycling
  - I have a serious Twitter addiction
- Expectations
- Dealing with the circumstances as best we can

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

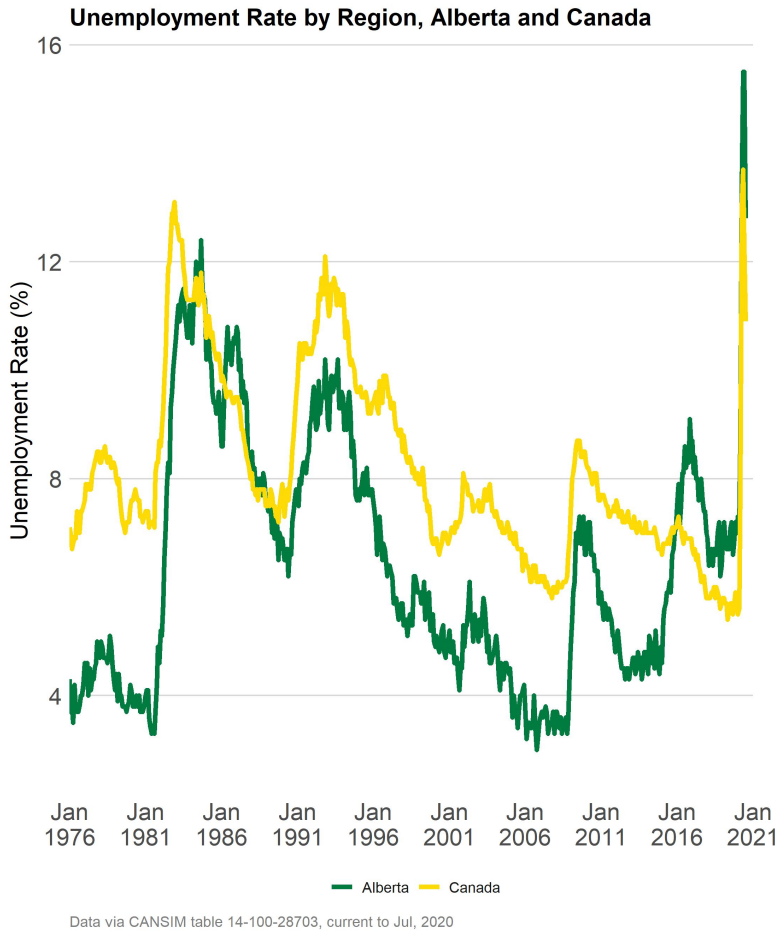


Micro-economics

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

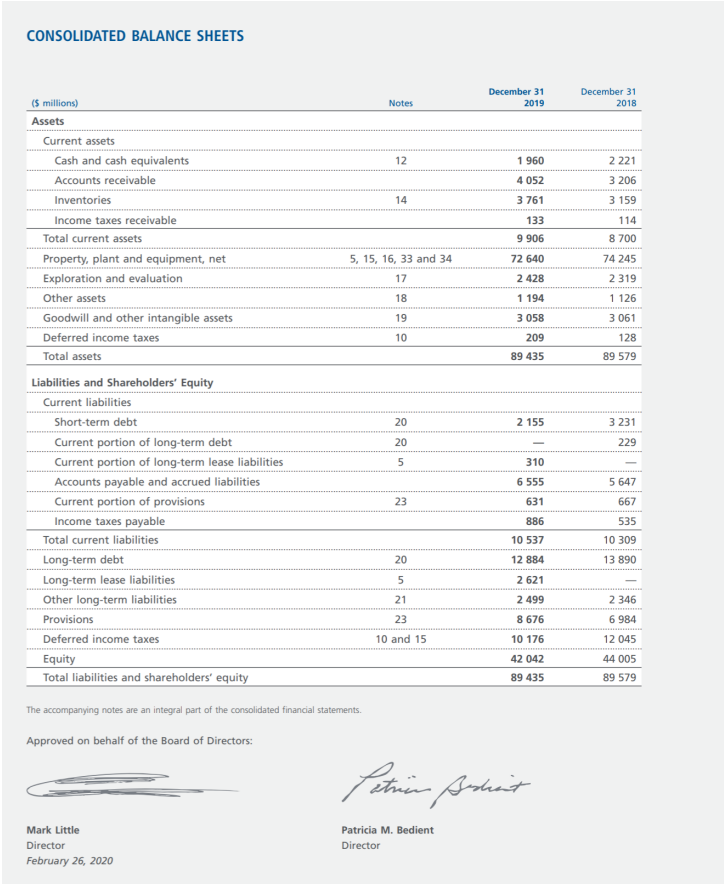
Micro- vs. Macro-economics

- 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 stratrgy translated into a different language



CONSOLIDATED BALANCE SHEETS

($ millions)	Notes	December 31 2019	December 31 2018
Assets			
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
Liabilities and Shareholders' Equity			
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?

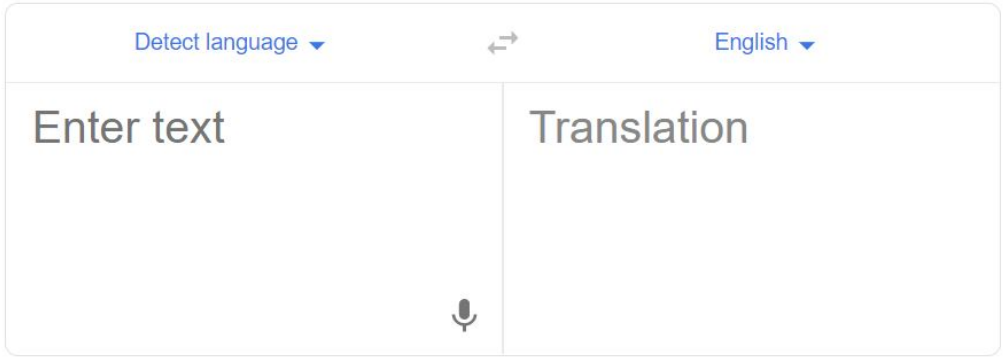
Economics has its own vocabulary

- You'll need to master a new vocabulary:

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

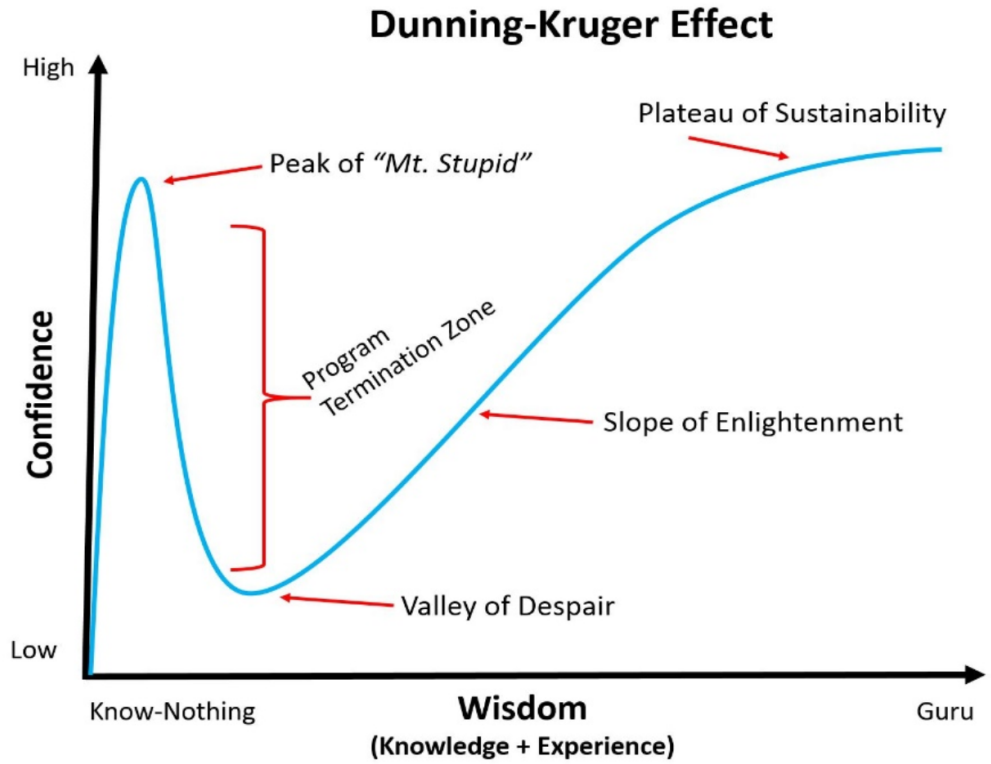
- While I'll try to avoid jargon, I'll be pedantic about certain terms with you because they are important for understanding and to convey consistent meanings

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 ★

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

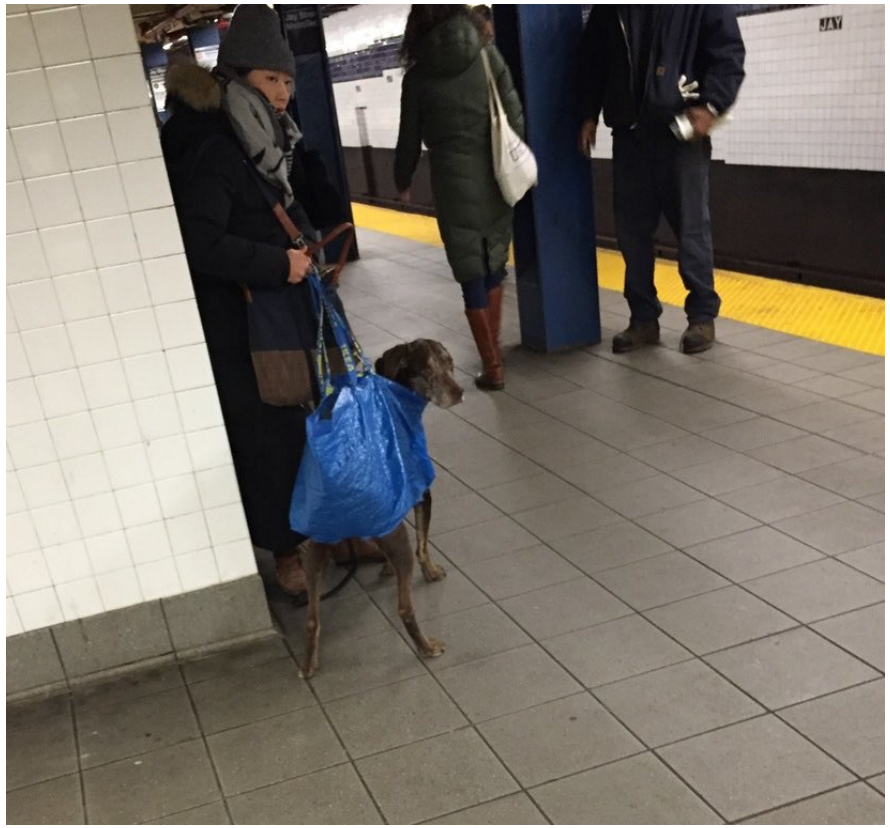
Economics as a *Way of Thinking*

- 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



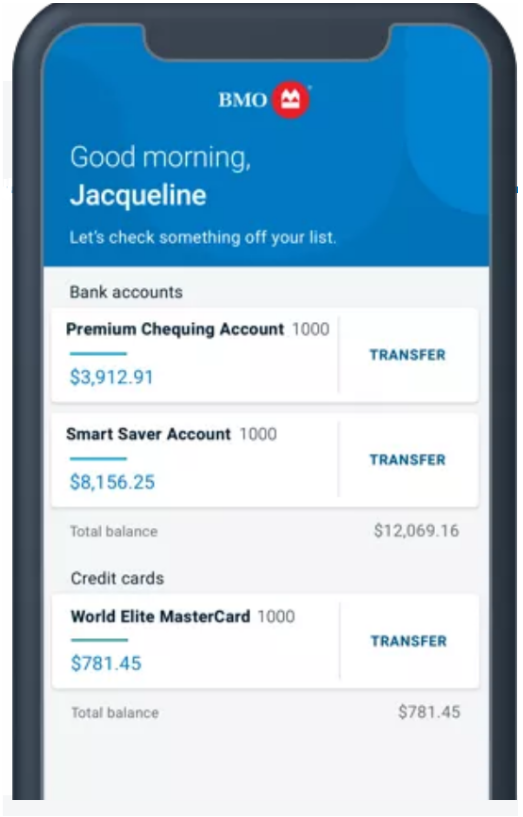
Pictures Source, via Ryan Safner

Incentives Example: England's window tax

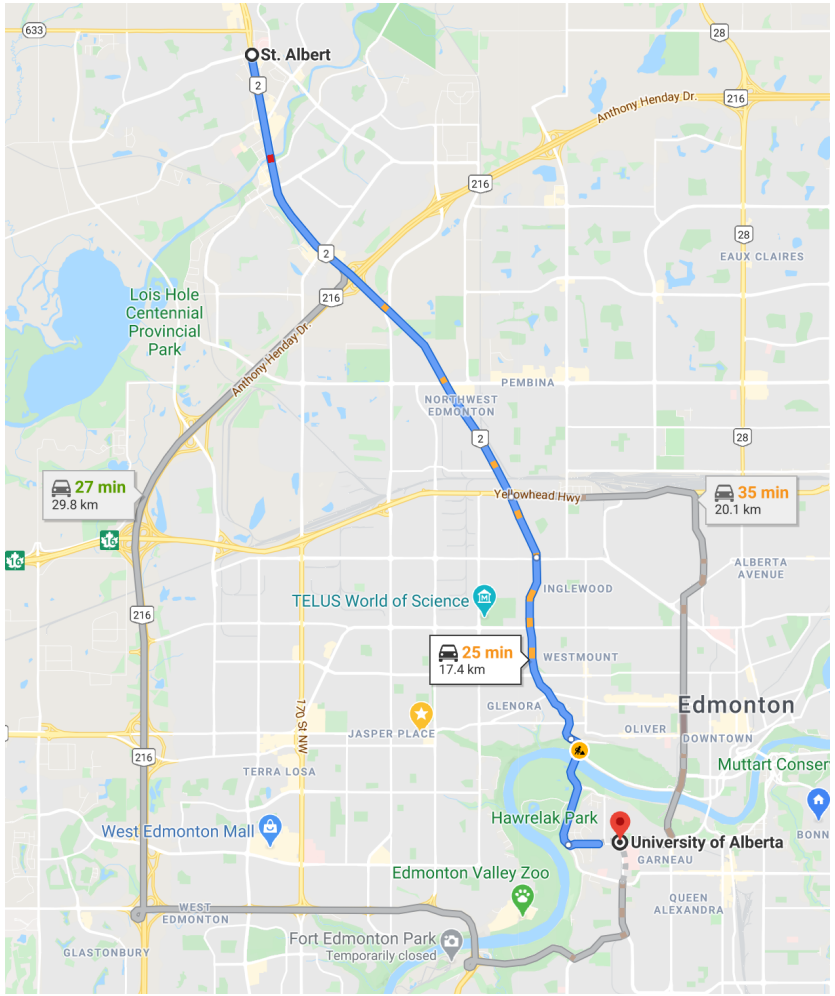
The British government, in 1696, was looking for a way to impose a wealth-based property tax. **Solution**: They imposed a tax payable based on the number of windows in your dwelling, on the premise that larger houses had more windows.

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**

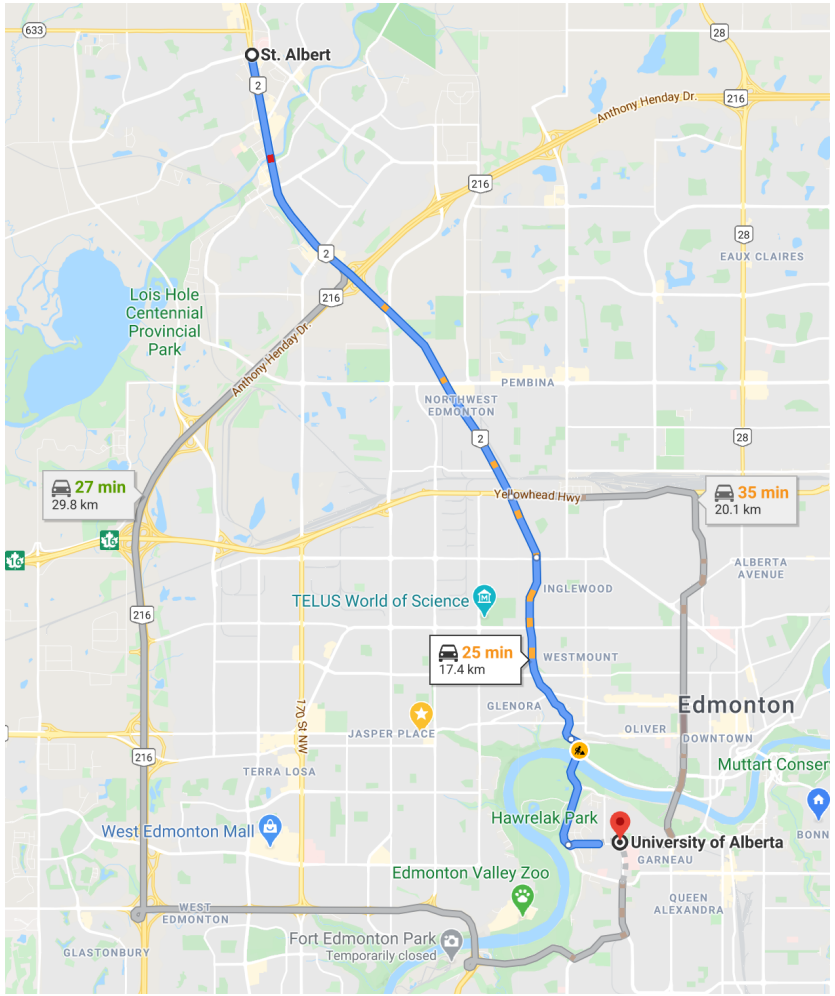


Equilibrium Example I



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

Equilibrium Example I



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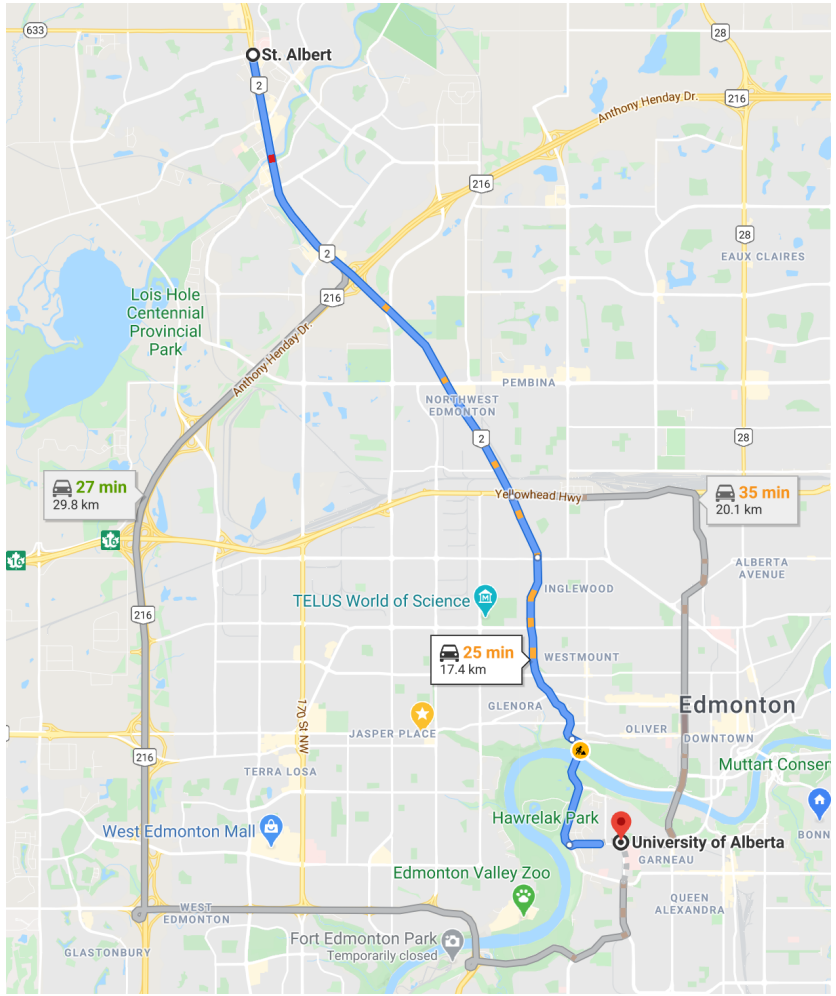
Equilibrium Example II



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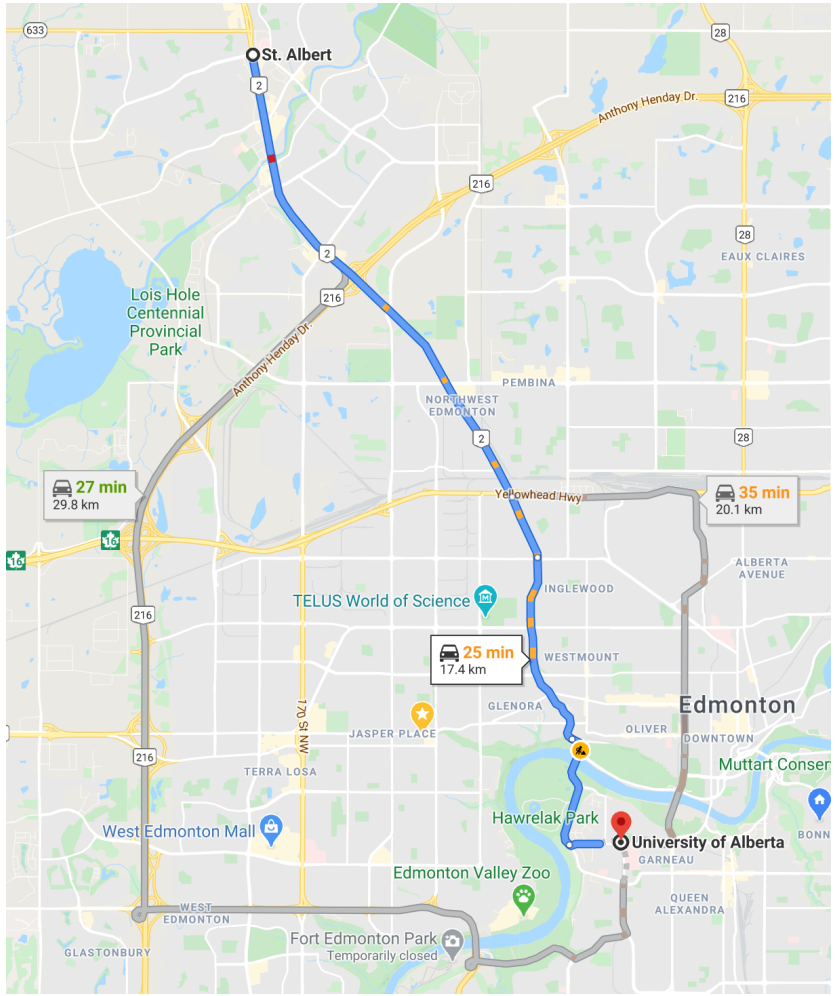
- **Scenario I: Fewer than 500 cars** choose Groat Road
  - What will people do?

Equilibrium Example III



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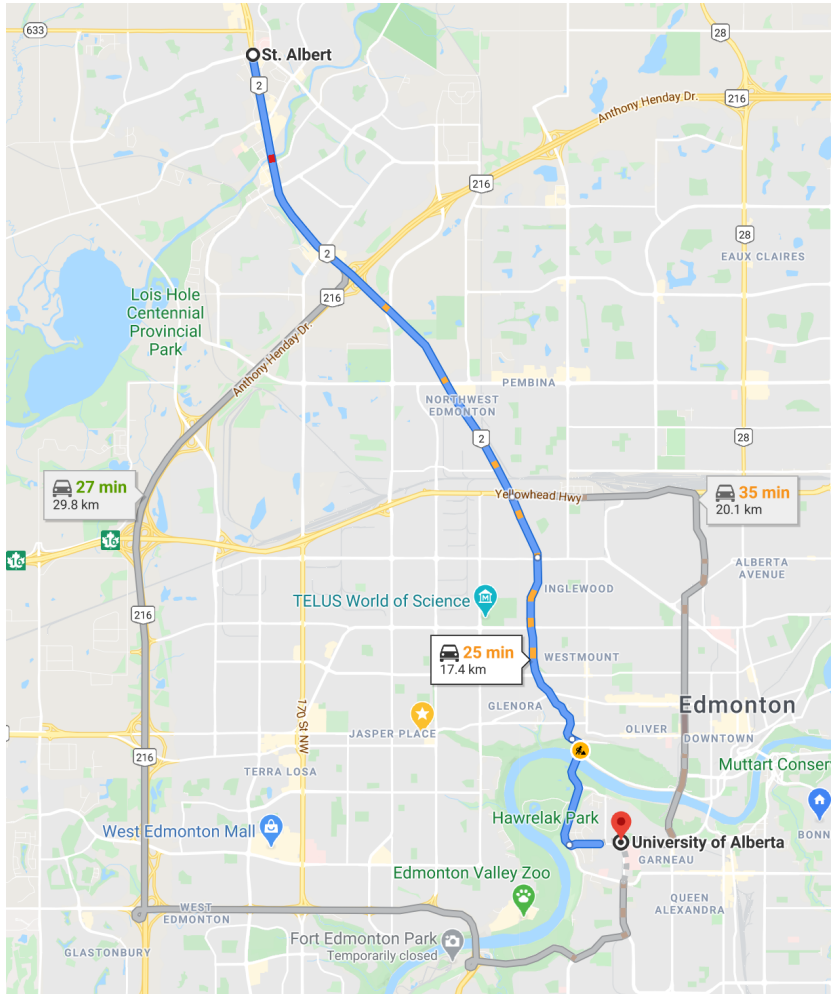
- **Scenario I: More than 500 cars** choose Groat Road
  - What will people do?

Equilibrium Example IV



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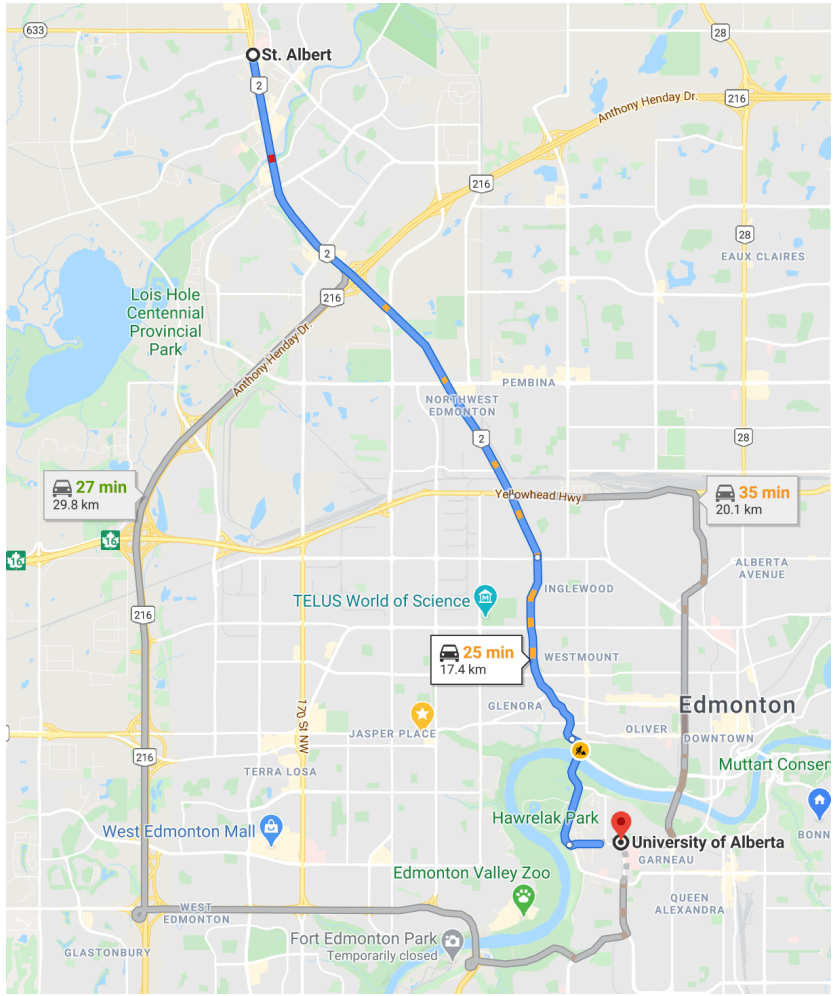
- **In Equilibrium**: How many cars are on each road?

Equilibrium Example IV



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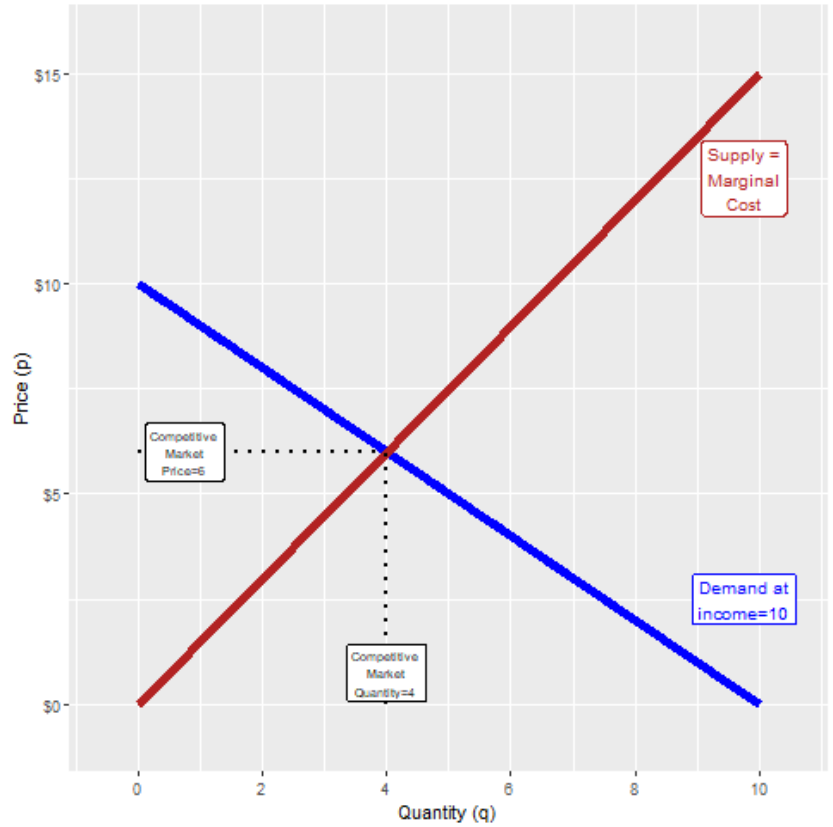
- What happens **in equilibrium** as Groat bridge is expanded, reducing commute time to 22 min + 1 min/ 100 extra cars?

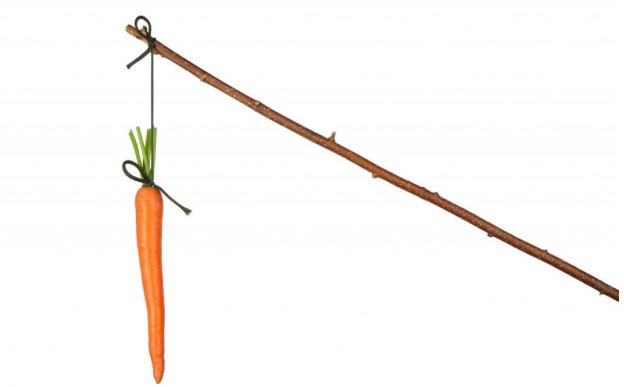
More vocabulary

- **Comparative statics**: examining changes in equilibria cased 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**



Economics Is Broader Than You Think

Source: [Ryan Safner]

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,

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

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

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

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

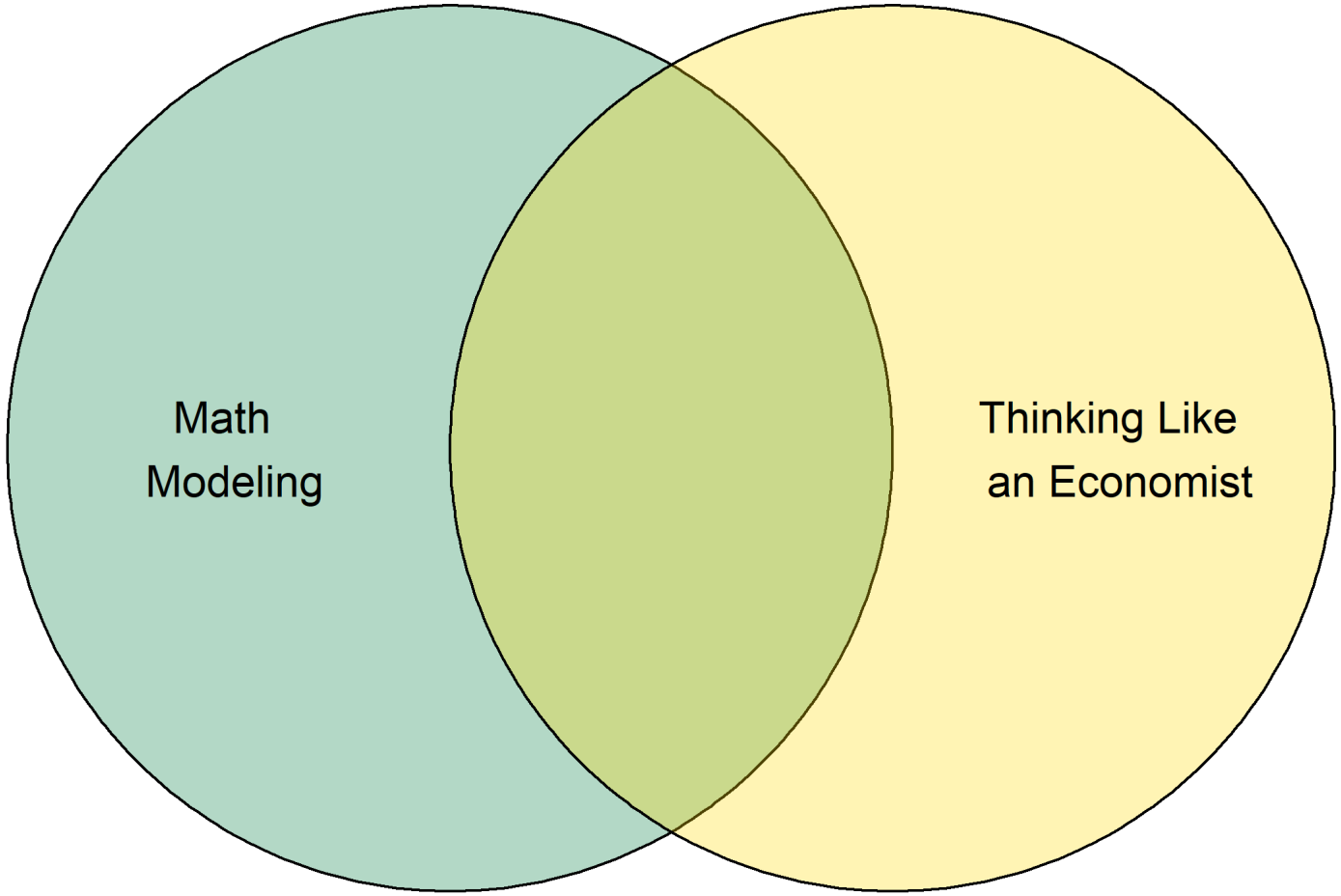
Esther Duflos, Nobel-prize-winning economist (Source: MIT)

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

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

On-line learning setup

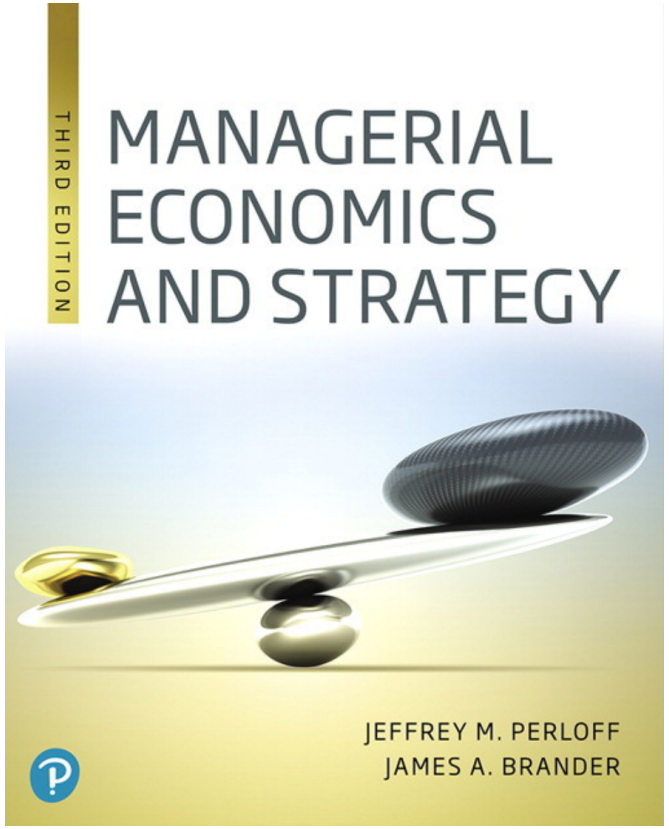
- Regular class meetings will be on Zoom, with Google Meet as a backup
- Each section will have 2 weekly synchronous meetings, plus a recorded problem solving and review session
  - T/TH classes during scheduled meeting times will last only (approximately) 50 minutes, supplemented by the recorded problem 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.



Communication

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

Assignments

Task	Type	Weight
Breakout Briefings (2+)	In class	20%
Quizzes (2)	In class	20%
Midterm	In class	20%
Final	As scheduled	40%

Evaluation

Minimum	Maximum	Grade
90	100.00	A+
85	89.99	A
80	84.99	A-
77	79.99	B+
73	76.99	B
70	72.99	B-
55	59.99	D+
67	69.99	C+
63	66.99	C
60	62.99	C-
55	59.99	D+
50	54.99	D
0	49.99	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 26th, details TBA
- Topic 3: The Consumer (Parts of Ch. 3 and 4)
- Topic 4: The Firm (Ch. 5, 6, 7)
- Midterm: Week of October 26th, details TBA
- Topic 5: The Market (Ch. 8, 9, 10)
- Quiz 1: Week of November 23, 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.