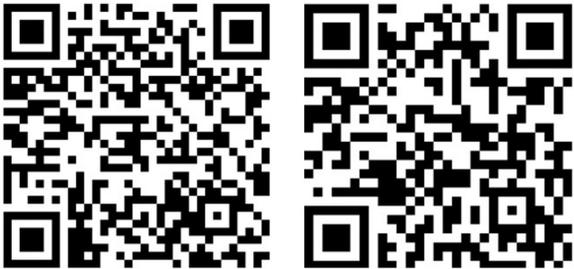


Course Syllabus & Ten Principles Translated

Course Syllabus: 10 Principles Translated:



▶ Textbook Ordering: See below...

2019/9/16 10 Principles of Economics Joseph Tao-yi Wang

N. GREGORY MANKIWI

PRINCIPLES OF
ECONOMICS
Eight Edition



CHAPTER
1 **Ten Principles of Economics**

Premium PowerPoint Slides by:
V. Andreea CHIRITESCU
Eastern Illinois University

Modified by Joseph Tao-yi Wang

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2

Look for the answers to these questions:

- What kinds of **questions** does economics address?
- What are the principles of how people **make decisions**?
- What are the principles of how people **interact**?
- What are the principles of how the **economy as a whole** works?

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3

Ten Principles of Economics

- **Resources are scarce**
- **Scarcity**: the limited nature of society's resources
 - Society has limited resources
 - Cannot produce all the goods and services people wish to have
- **Economics**
 - The study of how society manages its scarce resources

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4

Ten Principles of Economics

- **Economists study**:
 - How **people** decide what to buy, how much to work, save, and spend
 - How **firms** decide how much to produce, how many workers to hire
 - How **society** decides how to divide its resources between national defense, consumer goods, protecting the environment, and other needs

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5

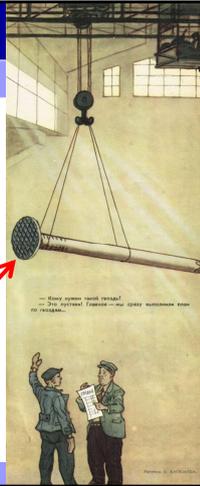
What Economics is **Really** About?

- ▶ **Traditionally**: Economics is the study of how society produces and distributes goods to satisfy the wants and needs of their members. **For me**,
- ▶ Economics is the study of **institutions and human behavior** (reactions to institutions)
 - ▶ I.e. 「**上有政策，下有對策**」
 - ▶ (Classical) **market mechanism** is just one example!
 - ▶ **Other mechanisms**: Auctions, match-making
 - ▶ **Other institutions**: governments, congress, national health insurance, families, social norms

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People Respond to Incentives!

- ▶ Central Planning in Soviet Union:
 - ▶ "...if the plan merely calls for tonnages of output,
 - ▶ there is every incentive to skimp on design or finish or quality, in order to concentrate on sheer weight."
 - ▶ The Economic Problem (1970), by Robert L. Heilbroner
- ▶ Interesting cartoon in Krokodil:
 - ▶ (Russian satirical magazine)



2019/9/16

10 Principles of Economics

How People Make Decisions

- Principle 1: People face trade-offs
- Principle 2: The cost of something is what you give up to get it
- Principle 3: Rational people think at the margin
- Principle 4: People respond to incentives

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8

Principle 1: People Face Trade-offs

- To get something that we like, we have to give up something else that we also like
 - Going to a party the night before an exam
 - Less time for studying
 - Having more money to buy stuff
 - Working longer hours, less time for leisure
 - Protecting the environment
 - Resources could be used to produce consumer goods

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9

Principle 1: People Face Trade-offs

- Society faces trade-offs:
 - The more it spends on national defense (guns) to protect its shores
 - The less it can spend on consumer goods (butter) to raise the standard of living at home
 - Pollution regulations: cleaner environment and improved health
 - But at the cost of reducing the incomes of the firms' owners, workers, and customers

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Principle 1: People Face Trade-offs

- **Efficiency:** society gets the most from its scarce resources
- **Equality:** prosperity is distributed uniformly among society's members
- **Tradeoff:**
 - To achieve greater equality, could redistribute income from wealthy to poor
 - But this reduces incentive to work and produce, shrinks the size of economic "pie"

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Principle 2: The Cost of Something Is What You Give Up to Get It

- **Making decisions:**
 - Compare costs w/ benefits of alternatives
 - Need to include opportunity costs
- **Opportunity cost**
 - Whatever must be given up to obtain some item

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12



Principle 2: The Cost of Something Is What You Give Up to Get It

- The opportunity cost of:
 - Going to college for a year
 - Tuition, books, and fees
 - **PLUS** foregone wages
 - Going to the movies
 - The price of the movie ticket
 - **PLUS** the value of the time you spend in the theater

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Principle 3: Rational People Think at the Margin

- Rational people
 - Systematically and purposefully **do the best they can** to achieve their objectives
 - Given the available opportunities
 - Make decisions by evaluating costs and benefits of **marginal changes**
 - Small incremental adjustments to a plan of action

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Principle 3: Rational People Think at the Margin

- Examples:
 - Cell phone users with **unlimited** minutes (the minutes are free at the margin)
 - Are often prone to making long/frivolous calls
 - Marginal benefit of the call > 0
 - A manager considers whether to increase output
 - Compares the cost of the needed labor and materials to the **extra** revenue

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Principle 4: People Respond to Incentives

- Incentive
 - Something that induces a person to act
- Examples:
 - When gas prices rise, consumers buy more hybrid cars and fewer gas guzzling SUVs
 - When cigarette taxes increase, teen smoking falls

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Active Learning 1 Applying the principles

- You are selling your old ASUS laptop.
 - You have already spent NT\$10,000 on repairs.
- At the last minute, the Blu-ray drive dies.
 - Can pay NT\$6,000 to replace it, or sell it “as is.”

In each of the following scenarios, should you have the Blu-ray drive repaired? Explain.

- Shopee value (what you could get for the laptop) is NT\$25,000 if Blu-ray drive works, NT\$17,000 if it doesn't.
- Shopee value is NT\$20,000 if Blu-ray drive works, NT\$15,000 if it doesn't.

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Active Learning 1 Answers

Cost of fixing the Blu-ray drive = NT\$6,000

- Shopee value is NT\$25,000 if Blu-ray drive works, NT\$17,000 if it doesn't
 - Benefit of fixing Blu-ray drive = NT\$8,000
(= NT\$25,000 – NT\$17,000)
 - **Get the Blu-ray drive fixed**
- Shopee value is NT\$20,000 if Blu-ray drive works, NT\$15,000 if it doesn't
 - Benefit of fixing Blu-ray drive = NT\$5,000
(= NT\$20,000 – NT\$15,000)
 - **Do not pay NT\$6,000 to fix it**

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How People Interact

- Principle 5:** Trade can make everyone better off
- Principle 6:** Markets are usually a good way to organize economic activity
- Principle 7:** Governments can sometimes improve market outcomes

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Principle 5: Trade Can Make Everyone Better Off

- People benefit from trade:
 - People can buy a greater variety of goods and services at lower cost
- Countries benefit from trade and specialization
 - Get a better price abroad for goods they produce
 - Buy other goods more cheaply from abroad than could be produced at home

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Principle 6: Markets Are Usually a Good Way to Organize Economic Activity

- Market
 - A group of buyers and sellers (need not be in a single location)
- “Organize economic activity” means determining
 - What goods and services to produce
 - How much of each to produce
 - Who produced and consumed these

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Principle 6: Markets Are Usually a Good Way to Organize Economic Activity

- A market economy allocates resources
 - Decentralized decisions of many firms and households – as they interact in markets
- Famous insight by Adam Smith in *The Wealth of Nations* (1776):
 - Each of these households and firms acts as if “led by an invisible hand” to promote general economic well-being

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Principle 6: Markets Are Usually a Good Way to Organize Economic Activity

- Prices:
 - Determined: interaction of buyers and sellers
 - Reflect the good’s value to buyers
 - Reflect the cost of producing the good
- Invisible hand:
 - Prices guide self-interested households and firms to make decisions that maximize society’s economic well-being

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Principle 7: Governments Can Sometimes Improve Market Outcomes

- Government - enforce property rights
 - Enforce rules and maintain institutions that are key to a market economy
 - People are less inclined to work, produce, invest, or purchase if large risk of their property being stolen

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Principle 7: Governments Can Sometimes Improve Market Outcomes

- **Government - promote efficiency**
 - Avoid **market failures**: market left on its own fails to allocate resources efficiently
 - **Externality** – source of market failure
 - Production or consumption of a good affects bystanders (e.g. pollution)
 - **Market power** – source of market failure
 - A single buyer or seller has substantial influence on market price (e.g. monopoly)

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Principle 7: Governments Can Sometimes Improve Market Outcomes

- **Government - promote equality**
 - Avoid disparities in economic well-being
 - Use tax or welfare policies to change how the economic “pie” is divided

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Active Learning 2 Discussion Question

In each of the following situations, what is the government’s role?

Does the government’s intervention improve the outcome?

- Public schools for K-12
- National health insurance
- Patent laws, which allow drug companies to charge high prices for life-saving drugs

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How the economy as a whole works

- Principle 8:** A country’s standard of living depends on its ability to produce goods and services
- Principle 9:** Prices rise when the government prints too much money
- Principle 10:** Society faces a short-run trade-off between inflation and unemployment

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How the economy as a whole works

- ▶ These are Principles of **Macroeconomics**
 - ▶ For the Spring semester, not for now
- ▶ Some are still controversial and under debate
- ▶ Blah blah blah...
 - ▶ See Yoram’s Translation of the Ten Principles

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Principle 8: Country’s Standard of Living Depends on Its Ability to Produce Goods and Services

- **Huge variation in living standards**
 - Across countries and over time
 - Average income in rich countries
 - Is more than ten times average income in poor countries
 - The U.S. standard of living today
 - Is about eight times larger than 100 years ago
 - **What about Taiwan?**

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Principle 8: Country's Standard of Living Depends on Its Ability to Produce Goods and Services

- **Productivity: most important determinant of living standards**
 - Quantity of goods and services produced from each unit of labor input
 - Depends on the equipment, skills, and technology available to workers
 - Other factors (e.g., labor unions, competition from abroad) have far less impact on living standards

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31



Principle 9: Prices Rise When the Government Prints Too Much Money

- **Inflation**
 - An increase in the overall level of prices in the economy
- **In the long run**
 - Inflation is almost always caused by excessive growth in the quantity of money, which causes the value of money to fall
 - The faster the government creates money, the greater the inflation rate

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Principle 10: Society Faces a Short-run Trade-off between Inflation and Unemployment

- **Short-run trade-off between unemployment and inflation**
 - Over a period of a year or two, many economic policies push inflation and unemployment in opposite directions
 - Other factors can make this trade-off more or less favorable, but the trade-off is always present

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33

Summary

- Fundamental lessons about **individual** decision making:
 - People face trade-offs among alternative goals
 - The cost of any action is measured in terms of forgone opportunities
 - Rational people make decisions by comparing marginal costs and marginal benefits
 - People change their behavior in response to the incentives they face

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34

Summary

- Fundamental lessons about **interactions** among people:
 - Trade and interdependence can be mutually beneficial
 - Markets are usually a good way of coordinating economic activity among people
 - The government can potentially improve market outcomes by remedying a market failure or by promoting greater economic equality

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35

Summary

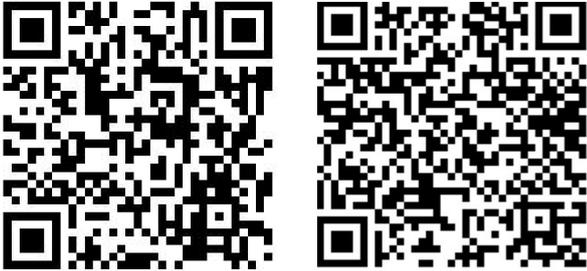
- Fundamental lessons about the economy **as a whole:**
 - Productivity is the ultimate source of living standards
 - Growth in the quantity of money is the ultimate source of inflation
 - Society faces a short-run trade-off between inflation and unemployment

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36

QR Code for Course Website & Textbook

9/27 Lecture Signup: Textbook Group Order:



▶ Deadline: 2019/9/13 (Fri) 14:30pm...

2019/9/16

10 Principles of Economics

Joseph Tao-yi Wang

Chapter 1: Ten Principles of Economics

- ▶ Seven in Micro-economics
 - ▶ Three in Macro-economics: Blah blah blah
- ▶ Homework:
 - ▶ Watch Ten Principles of Economics: A Translation and read its transcript online
 - ▶ Mankiw, Chap.1, Problem 1, 3, 8, 9
- ▶ Past Midterm Questions TBA

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10 Principles of Economics

Joseph Tao-yi Wang

FYI: How to Read the Textbook

1. Read before class.
 - ▶ You'll get more out of class.
2. Summarize, don't highlight.
 - ▶ Highlighting is a passive activity
 - ▶ Won't improve your comprehension
 - ▶ Summarize each section in your own words
 - ▶ Then, compare it to end-of-chapter summary

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10 Principles of Economics

Joseph Tao-yi Wang

FYI: How to Read the Textbook

3. Read before class. Test yourself!
 - ▶ Try Quick Quiz before moving on
4. Practice, practice, practice.
 - ▶ Work through end-of-chapter review questions & homework problems.
 - ▶ The more you use your new knowledge, the more solid it will become.

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10 Principles of Economics

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FYI: How to Read the Textbook

5. Go online.
 - ▶ The book comes with excellent web resources:
 - http://homepage.ntu.edu.tw/~josephw/principles_19F.htm
 - <http://academic.cengage.com/economics/mankiw>
6. Study in groups
 - ▶ Get together with a few classmates to
 - ▶ review each chapter, quiz each other, and
 - ▶ help each other understand the material.

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10 Principles of Economics

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FYI: How to Read the Textbook

7. Teach someone.
 - ▶ The best way to learn something is to teach it
8. Don't skip the real world examples.
 - ▶ Read Case Studies, In The News and Ask the Experts in each chapter.
 - ▶ As you read the online news, see if you can find connections with what you've learned.

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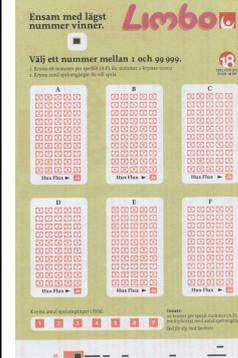
10 Principles of Economics

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What Economics is Really About?

- ▶ Economics is a study of institutions and human behavior (reactions to institutions)
 - ▶ 「上有政策，下有對策」
- ▶ (Classical) market mechanism is one example
- ▶ Other mechanisms: **auctions, matching**
- ▶ Other institutions: **Governments, congress,**
 - ▶ Welfare systems, national health insurance,
 - ▶ Families, social norms

Classroom Experiment 1: The LUPI Game



- ▶ Swedish Lottery in 2007
 - ▶ Lowest Unique Positive Integer (LUPI) Game
 - ▶ 最小唯一者勝的賽局
- ▶ Choose a positive integer from 1 to 100
- ▶ Win if choose the **Lower** but **Unique** number
- ▶ Prize?

Economic Lessons of The LUPI Game

1. A Set of Rules (= Institution)
 - ▶ 一套遊戲規則:可以是明文規定或不成文的潛規則
2. Individuals Optimize
 - ▶ 個人決策謀求最佳化, 因為人們對誘因有反應!
3. You Need to React to Others Optimizing
 - ▶ 其他人也在最佳化, 所以你要因應。即使多數人循規蹈矩, 制度設計者仍須考慮有人惡搞會怎樣?
4. What should the aggregate data look like?
 - ▶ 整體結果長怎樣? 理論的預測為何?

Solving the LUPI Game Equilibrium

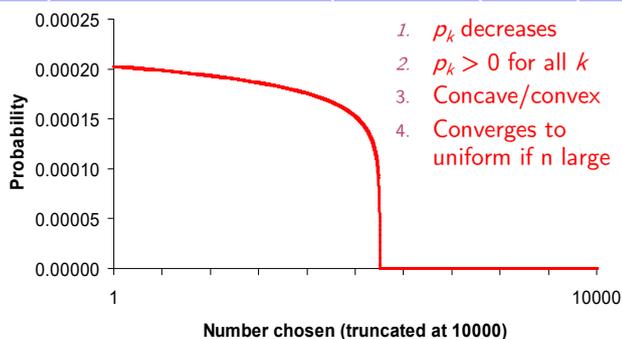
- ▶ Win by Choosing k if no other chooses k, and nobody "uniquely chooses 1 to (k - 1)"
 - ▶ Assume Number of Players is Poisson(n)
 - ▶ Mixed Strategy Equilibrium requires:
 - ▶ $Pr(\text{win} | \text{choose } 1) = Pr(\text{win} | \text{choose } 2) = \dots$
- $$e^{-np_1} = (1 - np_1 e^{-np_1}) \cdot e^{-np_2}$$

Nobody chose 1

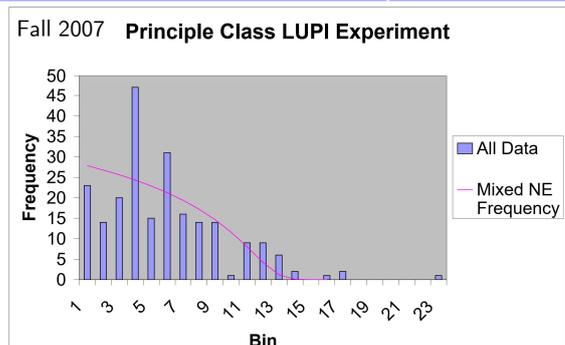
Nobody uniquely chose 1

Nobody chose 2

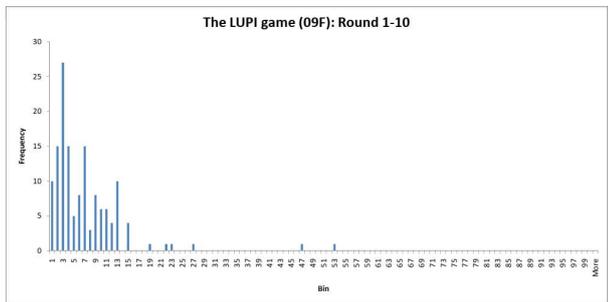
Unique Poisson-Nash Equilibrium (Mixed)



Are We in the LUPI Game Equilibrium?

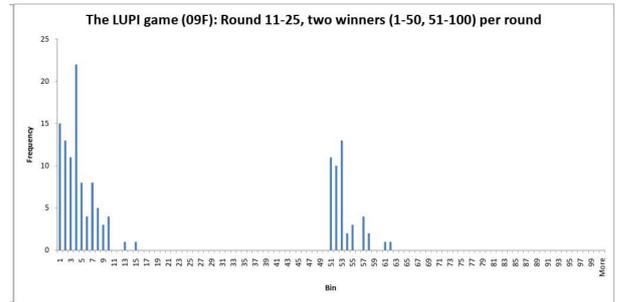


Are We in the LUPI Game Equilibrium?



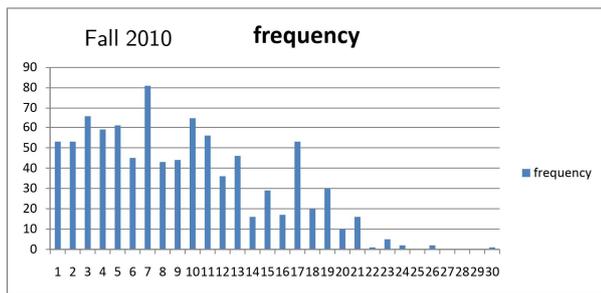
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Are We in the LUPI Game Equilibrium?



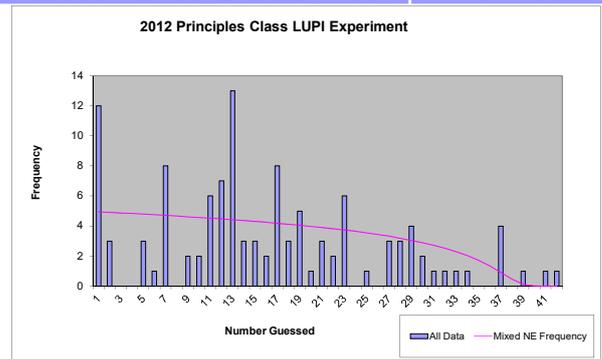
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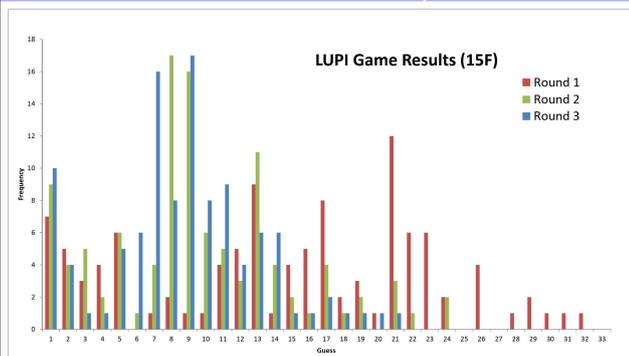
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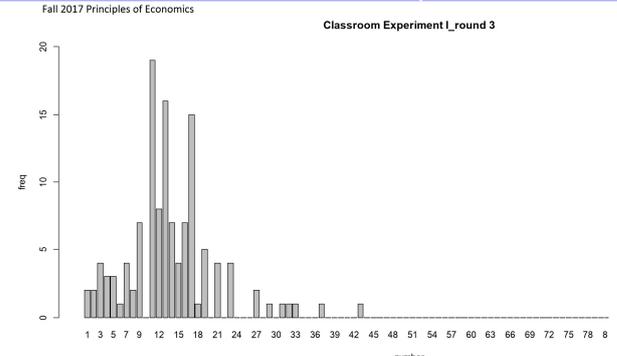
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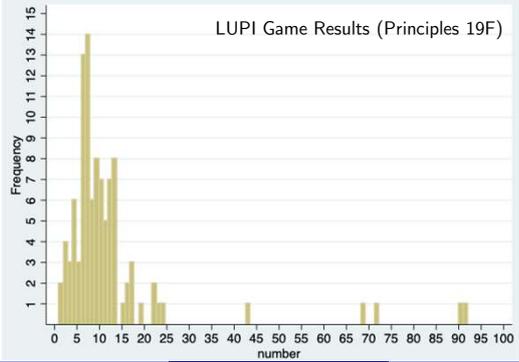
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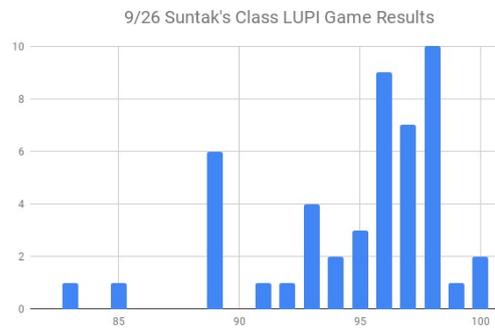
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Are We in the LUPI Game Equilibrium?



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More LUPI Data (Largest Unique)



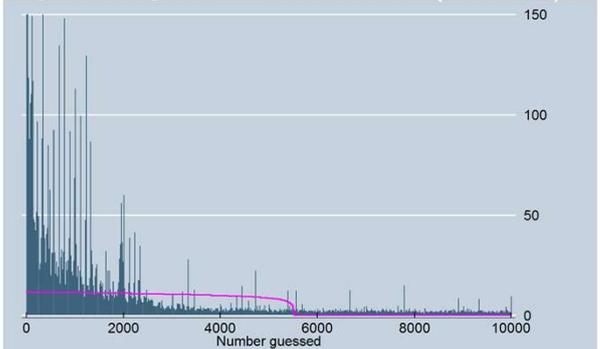
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Economic Lessons of The LUPI Game

- 5. Does empirical data match the theory?
 - ▶ 實證資料是否支持你的預測? 蒐集資料來看看「整個社會」的結果如何

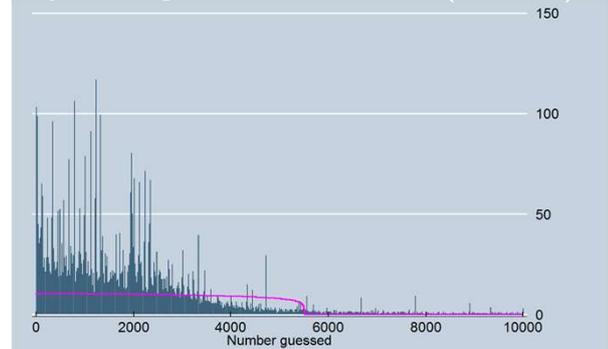
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Daily Average of Each Number (Week 1)



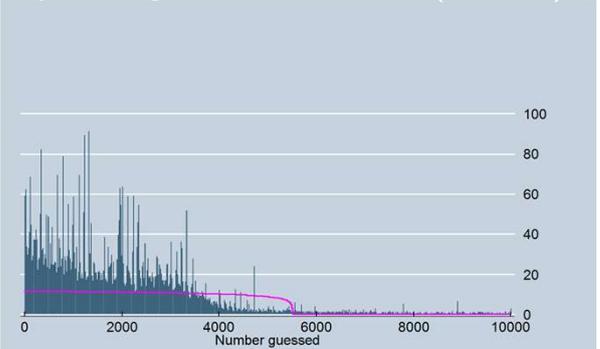
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Daily Average of Each Number (Week 3)



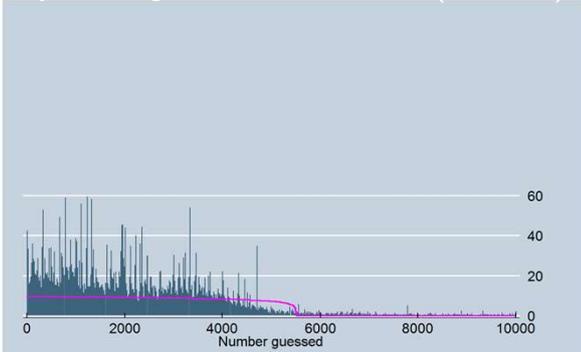
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Daily Average of Each Number (Week 5)



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Daily Average of Each Number (Week 7)



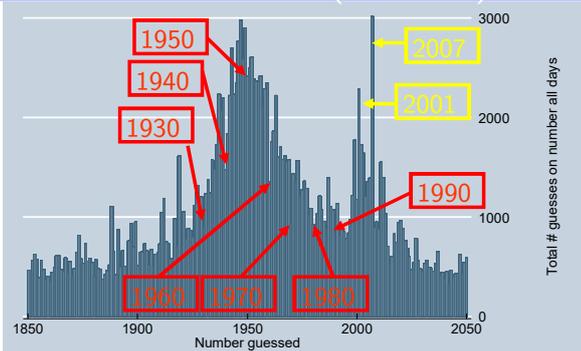
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Economic Lessons of The LUPI Game

- 5. Does empirical data match the theory?
 - ▶ 實證資料是否支持你的預測？蒐集資料來看看「整個社會」的結果如何
- 6. Can individual differences be explained?
 - ▶ (資料中)個別差異能否解釋？理論有改進空間嗎？

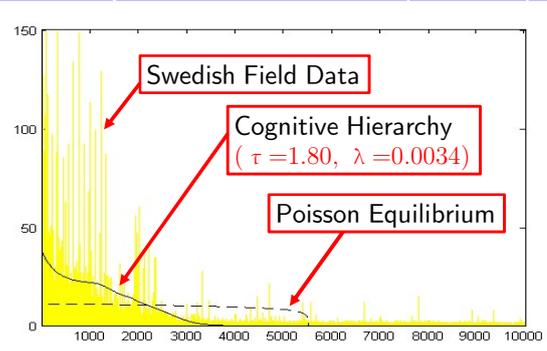
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Choose Own Birth Year (and 2007)?



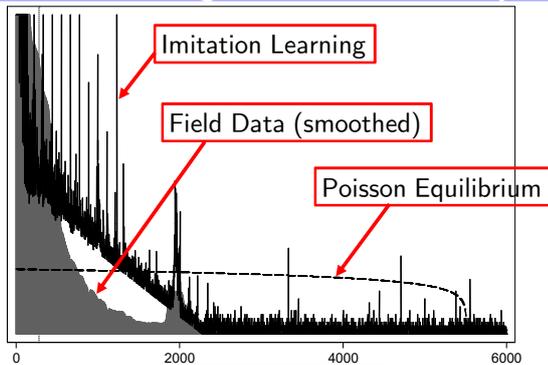
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Initial Frequencies: Field Data (Week 1)



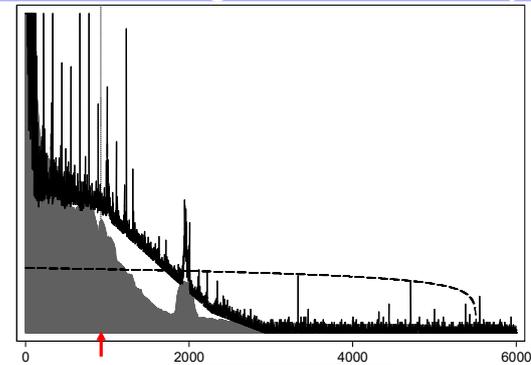
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Imitation Learning vs. Field Data - Day 2



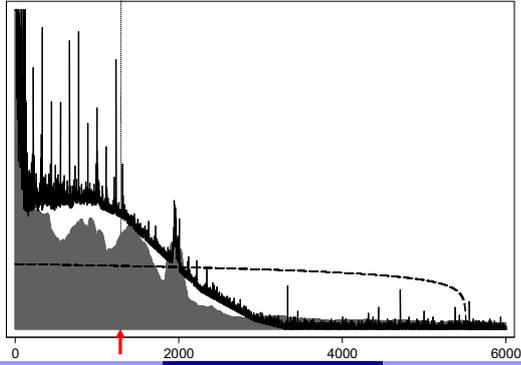
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Imitation Learning vs. Field Data - Day 3



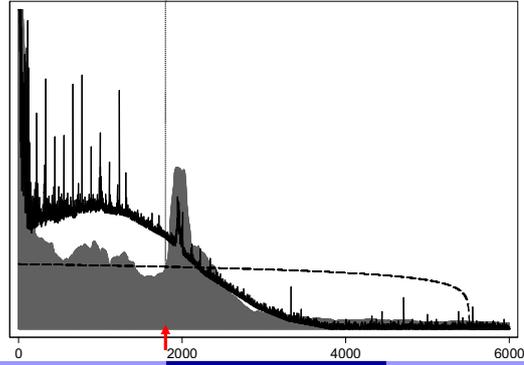
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Imitation Learning vs. Field Data - Day 4



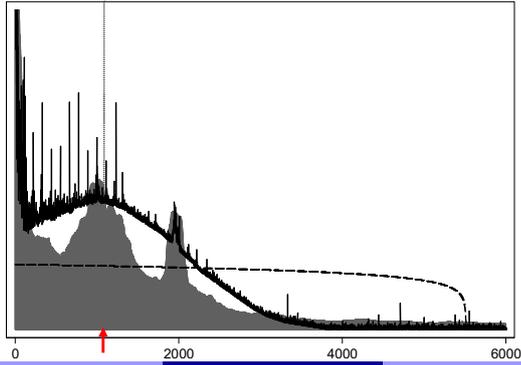
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Imitation Learning vs. Field Data - Day 5



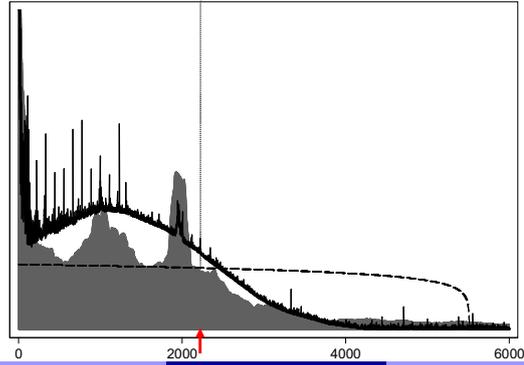
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Imitation Learning vs. Field Data - Day 6



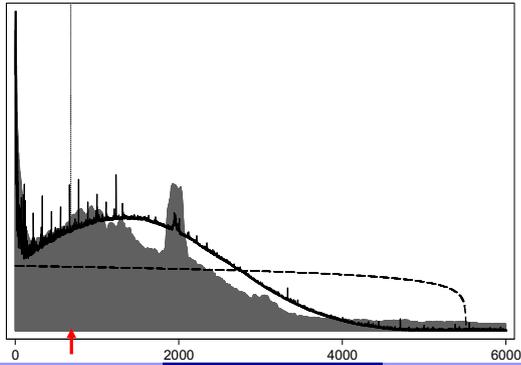
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Imitation Learning vs. Field Data - Day 7



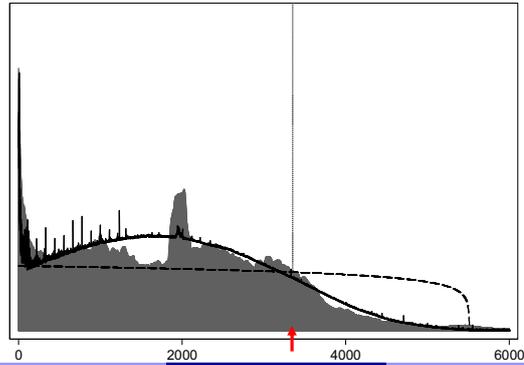
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Imitation Learning vs. Field Data - Day 14



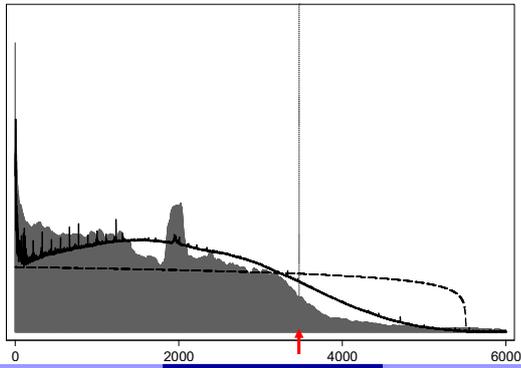
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Imitation Learning vs. Field Data - Day 21



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Imitation Learning vs. Field Data - Day 28

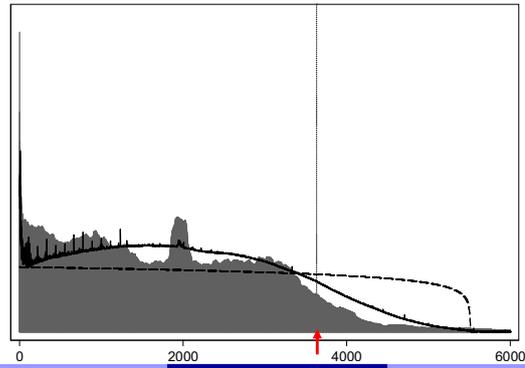


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Imitation Learning vs. Field Data - Day 35

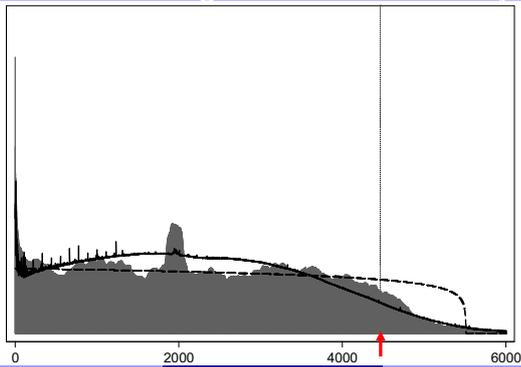


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Imitation Learning vs. Field Data - Day 42

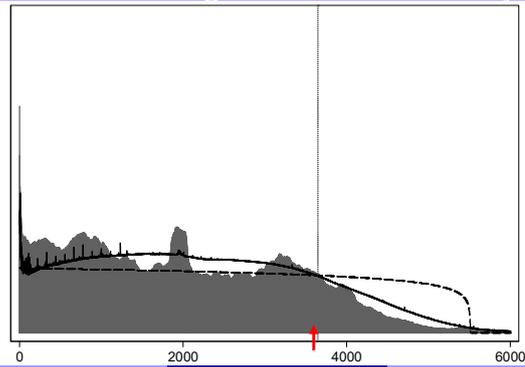


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Imitation Learning vs. Field Data - Day 49



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Economic Lessons of The LUPI Game

5. Does empirical data match the theory?
 - ▶ 實證資料是否支持你的預測？蒐集資料來看看「整個社會」的結果如何
6. Can individual differences be explained?
 - ▶ (資料中)個別差異能否解釋？理論有改進空間嗎？
7. How can the institution be improved?
 - ▶ 工程師問：制度(遊戲規則)有沒有可以改進的地方？
8. Where did this institution come from?
 - ▶ 這套制度是哪裡來的？現況的邏輯是什麼？

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What is Economics?

Joseph Tao-yi Wang