

## *Who Needs Cost Curves?*

1

## **Motivating Firms' Long-Run Micro Equilibrium and Invisible Hand Outcomes *without* Cost Curves**

Journal of Economic Teaching Symposium on Economic Teaching  
St. Louis 2025

Avi J. Cohen  
University of Toronto and York University

2

What is the *single most important concept* in microeconomics?

3

3



4

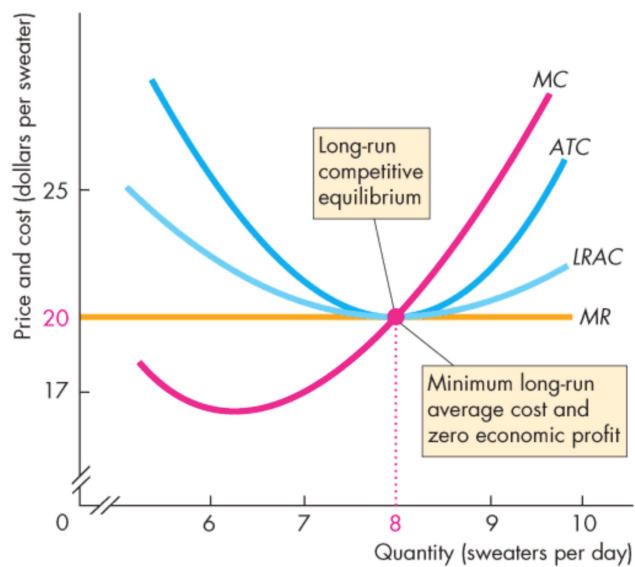
4

What is the *single most important graph* in microeconomics?

5

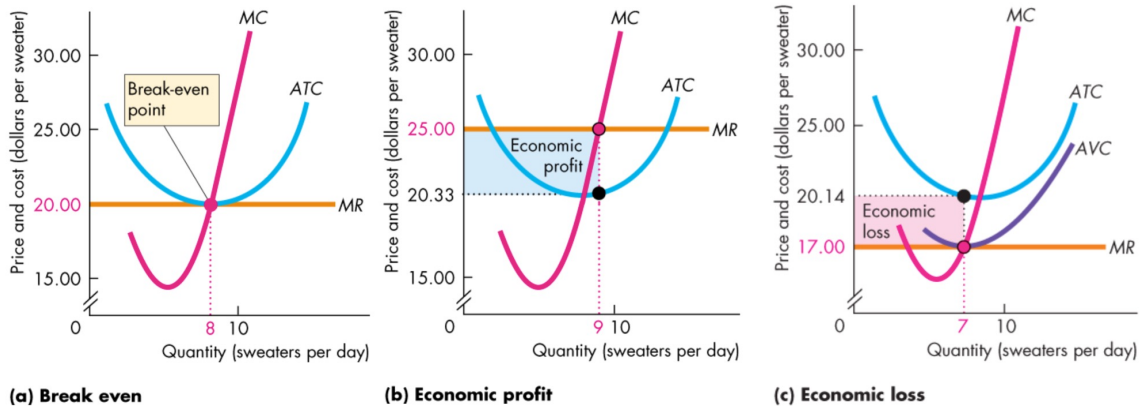
5

### Long-Run Equilibrium in Perfect Competition



6

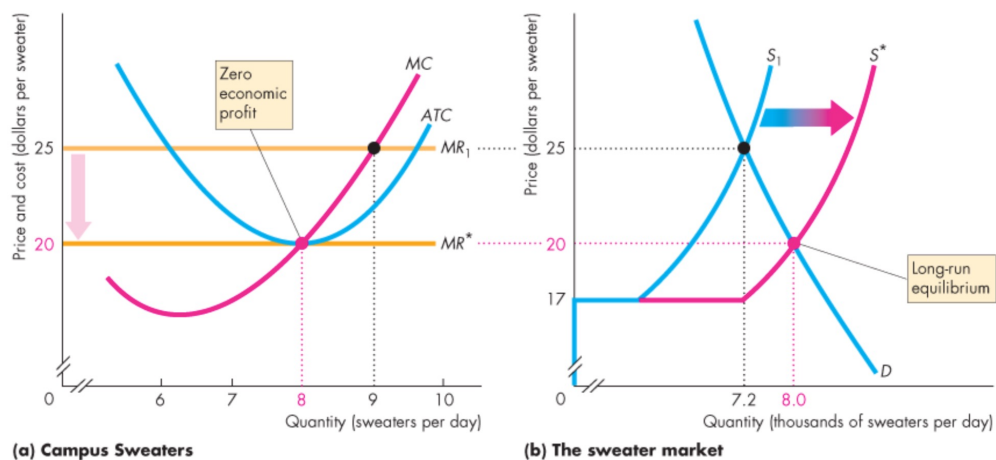
## Traditional Exposition of Perfect Competition – Firm's Profit Maximizing Quantity Decision



All "traditional" graphs from *Economics: Canada in the Global Environment*, 10<sup>th</sup> ed, by Parkin and Bade (Pearson Canada, 2019)

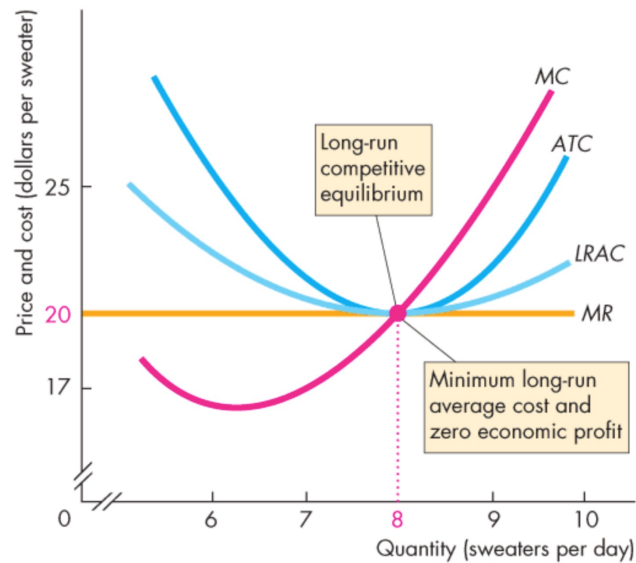
7

## Invisible Hand Story Leading to Most Important Graph In Micro ...



8

## Long-Run Equilibrium in Perfect Competition



9

## Traditional Exposition of Firm's Price and Quantity Decisions

- Upward-sloping  $MC$  and U-shaped  $AVC$ ,  $ATC$ ,  $LRAC$  curves based on diminishing returns and decreasing returns to scale
- Revenues depend on market structure
- Priority given to market structure of Perfect Competition
  - Perfect Competition –  $\text{Price} = MR$
  - Simplest model since only quantity decision
  - Exemplar of efficiency; benchmark for relative (in)efficiency of other market structures

10

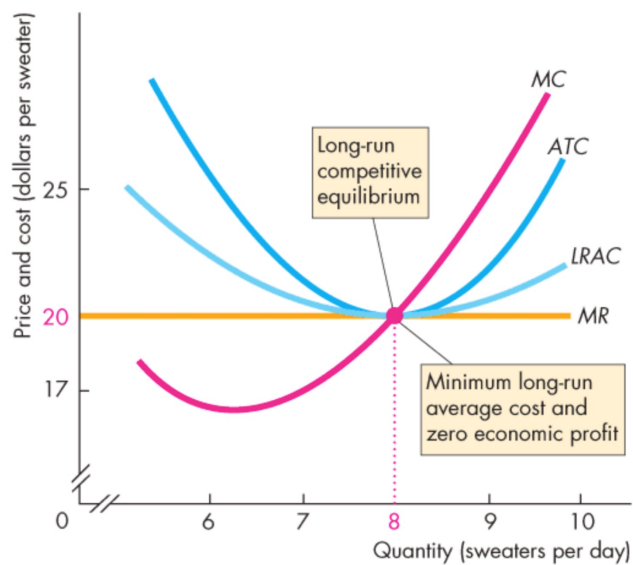
10

How many hours of course time  
does it take you to develop  
these results?



11

### Long-Run Equilibrium in Perfect Competition



12

## Father Guido Sarducci's Five-Minute University



13

13

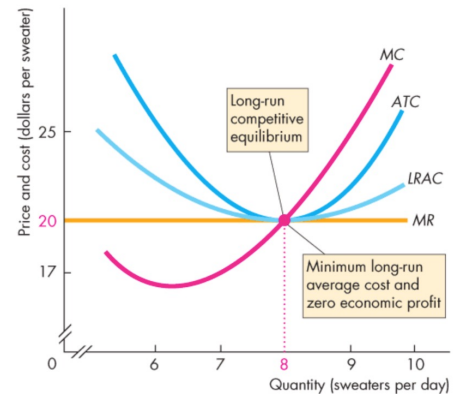
## How Economic Profits Direct the Invisible Hand



14

## How Economic Profits Direct the Invisible Hand

- For me, from an LT perspective, what's important about this graph is the invisible hand story behind it
- How economic profits direct the invisible hand of markets to an efficient allocation of resources across industries
- Economic profits as a signal to reallocate resources through entry and exit, (moving from short-run long-run equilibrium)



15

## LT Approach to Principles

The Literacy-Targeted (LT) approach to teaching principles emphasizes mastering core economic concepts, rather than exposing students to a wide range of theories and techniques they are unlikely to use again.

Use freed-up course time for repeated application of core concepts, strengthening retention, so that students can use economic reasoning throughout their lives.

16

16



## 5 AposLTes...



George Stigler



John Siegfried



Mike Salemi



W. Lee Hansen



Robert Frank

of the **LT Approach to Principles**

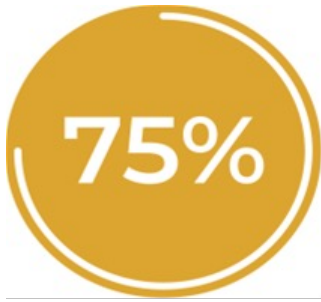
17

17

Empirical Motivation for the LT Approach

18

18



75% of North American post-secondary students never take any economics!



Of the students who take principles, over 80% are one-and-done — they never take another economics course.



Only 2% go on to major in economics.

19

Something about the principles courses scares away students  
or does not interest them...



20

Textbooks have chapter titles like:

- Elasticity
- Perfect Competition
- Oligopoly
- Externalities
- Consumption and Savings
- Aggregate Demand
- Exchange Rates ...



*Will that get an 18-year-old's  
curiosity pumping?*

Taught as a disparate set of models  
and graphical/mathematical tools  
majors will need in upper-level courses.

21

**There is an opportunity to do better, and evidence that an LT approach  
will appeal to, and better serve, a broader audience than  
traditional approaches to teaching principles.**



22

## LT Approach Answers the Question ...

What should go into the  
only economics course  
that students will ever take,  
(while not disadvantaging majors)?

*Or*

What should be in the  
Five-Minute University for  
Principles of Economics?

23

23



*2024 Journal of  
Economic Education  
Symposium 55(2):*  
**What Should Go Into the  
Only Economics Course  
Students Will Ever Take?**

Who Does (and Does Not) Take Introductory Economics?  
Wendy Stock

What Do We Want Principles Students to (Know and) Be Able To Do:  
Learning Outcomes, Competencies, and Content  
Avi Cohen

Assessments to Promote Learning in a Literacy-Targeted (LT)  
Economics Course  
Mark Maier & Phil Ruder

Cognitive Science Teaching Strategies and Literacy-Targeted  
Economics Complementarities  
Bill Goffe & Scott Wolla

Curriculum Lag Challenges and Strategies for LT Principles:  
Lessons from Closing the Monetary Policy Curriculum Gap  
Jane Ihrig, Mary Clare Peate & Scott Wolla

How LT Principles Can Improve Diversity, Inclusiveness  
and Student Interest  
Gary Hoover & Ebonya Washington

24

## Core Characteristics of the LT Approach

1. Prioritizing core concepts means excluding some content, some graphs and some math
2. Exclusions allow repeated application of core concepts and increased mastery
3. Narrative/storytelling approaches to student engagement

“

”

25

25

# The New York Times

THE WALL STREET  
JOURNAL.

Let's talk about...

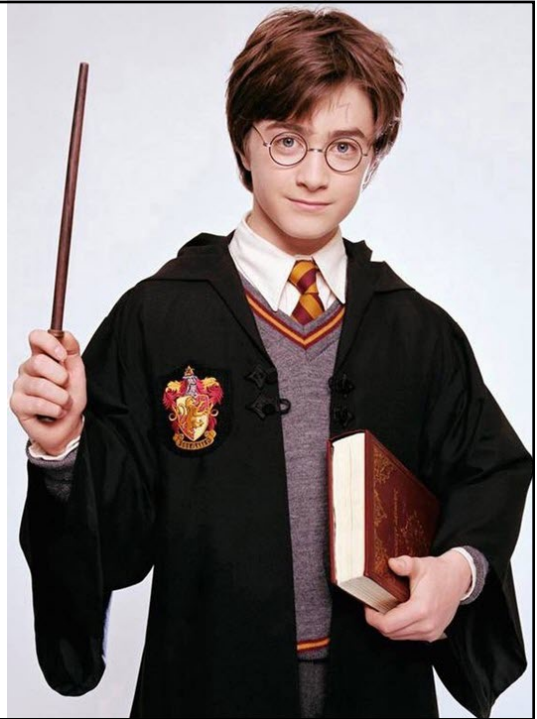
The  
Economist

26

“ Economic theory formulates thoughts via what we call “models.” The word model sounds more scientific than the word fable or tale, but I think we are talking about the same thing. The author of a tale seeks to impart a lesson about life to his readers. He does this by creating a story that hovers between fantasy and reality. It is possible to dismiss any tale on the grounds that it is unrealistic, or that it is too simplistic. But this is also its advantage....

In economic theory, as in Harry Potter, the Emperor’s New Clothes, ... we amuse ourselves in imaginary worlds. Economic theory spins tales and calls them models.”

Ariel Rubinstein, 2012



27

How to tell the invisible hand story  
without cost curves.

28



29

**More for More Money**  
**The Law of Supply**

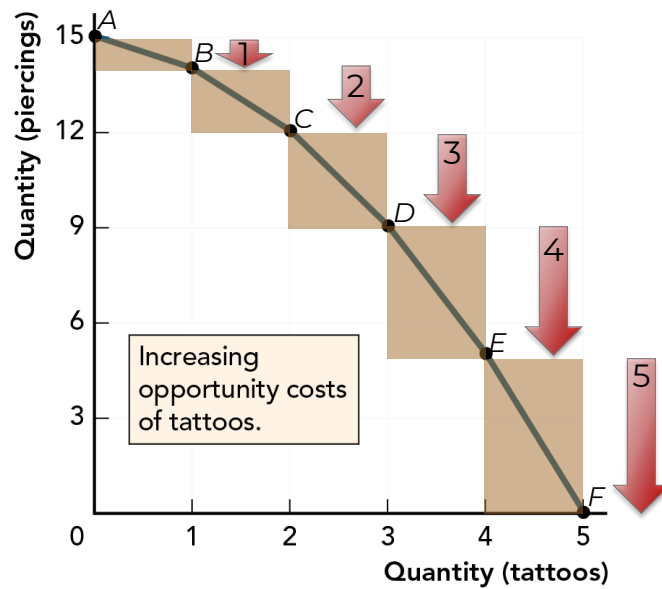
If the price of a product or service rises, quantity supplied increases.

Businesses increase production when higher prices either create higher profits or cover higher marginal opportunity costs of production.

30

## Paola's Parlour Production Possibilities Frontier

Combination	Piercings	Tattoos
A	15	0
B	14	1
C	12	2
D	9	3
E	5	4
F	0	5

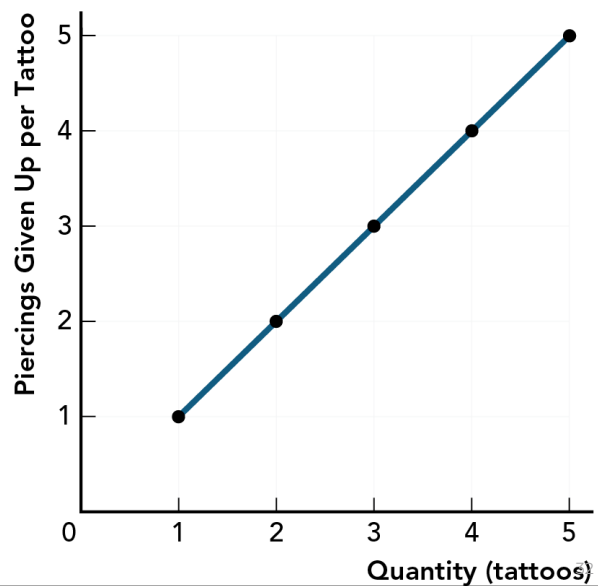


31

31

## Marginal Opportunity Costs of Additional Tattoos Measured in Piercings

Marginal Opportunity Cost of Additional Tattoos (piercings sets given up)	Quantity Supplied (tattoos)
1	1
2	2
3	3
4	4
5	5

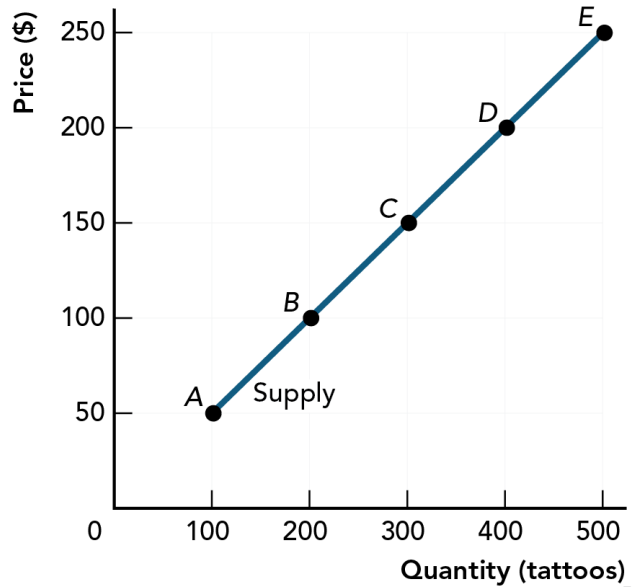


32



## Market Supply of Tattoos

Row	Price (marginal opportunity cost or minimum willing to accept per tattoo)	Quantity Supplied (tattoos)
A	\$ 50	100
B	\$100	200
C	\$150	300
D	\$200	400
E	\$250	500



33

## Red Light, Green Light How Economic Profits Direct the Invisible Hand

The simplest rule for smart business decisions is "Choose only when economic profits are positive."

When businesses pursue economic profits, markets produce the products and services consumers want.

34



## Willie's Web Wonders

35

35

### Economist's One-Year Business Plan for Willie

<b>Total Expected Revenues</b>		<b>\$60,000</b>
<b>Explicit Costs</b>	Depreciation	\$ 5000
	Rent	\$14,000
	Web Hosting	\$ 3000
	Phone	\$ 1000
	Advertising	\$ 2000
<b>Total Explicit Costs</b>		<b>\$ 25,000</b>
<b>Accounting Profits</b>		<b>\$ 35,000</b>
<b>Implicit Costs</b>	Willie's Time	\$38,000
	Willie's Money	\$ 8000
<b>Total Implicit Costs</b>		<b>\$ 46,000</b>
<b>Economic Profits</b>		<b>(\$ 11,000)*</b>

\*On business plans and balance sheets, losses are indicated with parentheses: (\$11,000) is an eleven thousand dollar loss.

36

36

## Alternative Profit Scenarios for Willie's Web Wonders

Scenario	One	Two	Three
Revenues	\$60,000	\$71,000	\$80,000
Total Explicit Costs	\$25,000	\$25,000	\$25,000
Total Implicit Costs	\$46,000	\$46,000	\$46,000
Accounting Profits	\$35,000	\$46,000	\$55,000
Economic Profits	(\$11,000)	\$ 0	\$ 9000

37

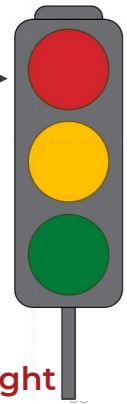
37

## Alternative Profit Scenario 1

- **Economic losses** — businesses contract and leave industry, supply decreases, pushing prices up, until prices just cover opportunity costs of production, economic profits = zero

Scenario	One	Two	Three
Revenues	\$60,000	\$71,000	\$80,000
Total Explicit Costs	\$25,000	\$25,000	\$25,000
Total Implicit Costs	\$46,000	\$46,000	\$46,000
Accounting Profits	\$35,000	\$46,000	\$55,000
Economic Profits	(\$11,000)	\$ 0	\$ 9000

**Negative  
Economic  
Profit (Loss)**



**Economic losses are Red Light**

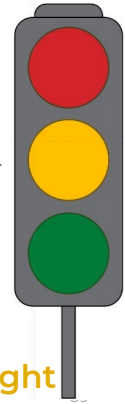
38

## Alternative Profit Scenario 2

- **Economic Breakeven point** — businesses just earning normal profits.  
Market equilibrium with zero economic profits or losses.  
No tendency for change.

Scenario	One	Two	Three
Revenues	\$60,000	\$71,000	\$80,000
Total Explicit Costs	\$25,000	\$25,000	\$25,000
Total Implicit Costs	\$46,000	\$46,000	\$46,000
Accounting Profits	\$35,000	\$46,000	\$55,000
Economic Profits	(\$11,000)	\$ 0	\$ 9000

Zero  
Economic  
Profit →



Breakeven point is Yellow Light

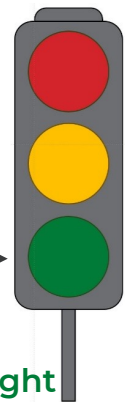
39

## Alternative Profit Scenario 3

- **Economic profits** — businesses expand and enter industry, supply increases, pushing prices down, until prices just cover all opportunity costs of production, economic profits = zero

Scenario	One	Two	Three
Revenues	\$60,000	\$71,000	\$80,000
Total Explicit Costs	\$25,000	\$25,000	\$25,000
Total Implicit Costs	\$46,000	\$46,000	\$46,000
Accounting Profits	\$35,000	\$46,000	\$55,000
Economic Profits	(\$11,000)	\$ 0	\$ 9000

Positive  
Economic  
Profit →



Economic profits are Green Light

40

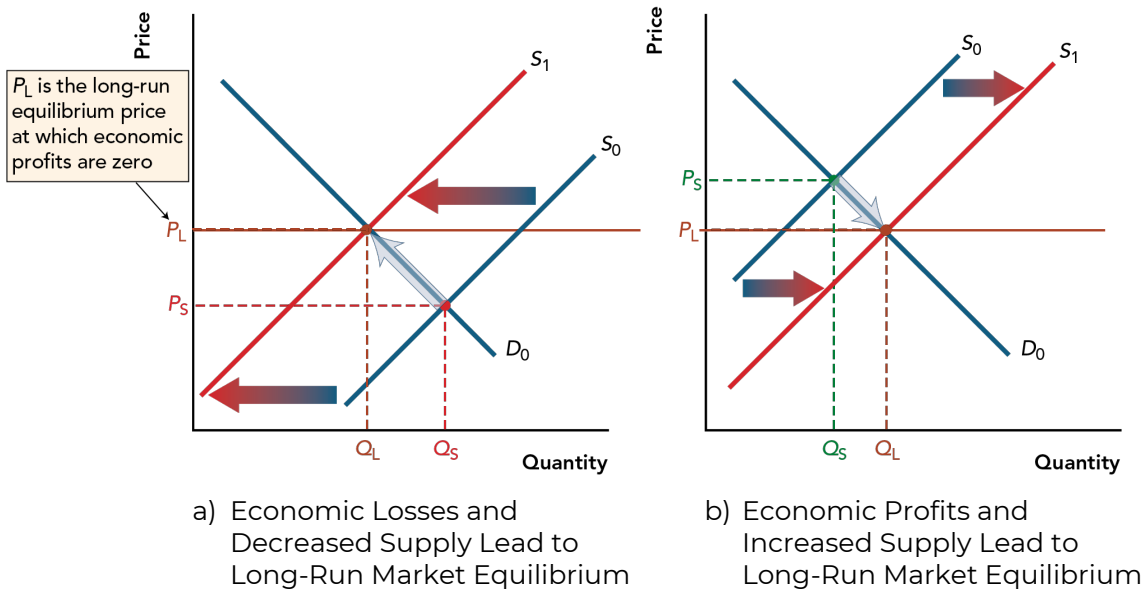
## How Economic Profits Direct the Invisible Hand

- **Short-run market equilibrium** — quantity demanded equals quantity supplied, but economic losses or profits lead to changes in supply
- **Long-run market equilibrium** — quantity demanded equals quantity supplied, economic profits = zero, no tendency for change
  - Price consumers willing and able to pay just covers businesses' opportunity costs of production, including normal profits

41

41

## Short-Run and Long-Run Market Equilibrium



42

42

## How Economic Profits Direct the Invisible Hand

- Difference between short-run and long-run market equilibrium is the additional time it takes for supply changes to adjust economic profits to zero
- Economic profits or losses are the key signal directing businesses to produce the products and services consumers want
- Changes in economic profits cause
  - Changes in supply
  - Changing prices
  - Moving industry from short-run market equilibrium to long-run market equilibrium

43

43

## Adam Smith on Normal Profits

“ ... If in the same neighbourhood, there was any employment evidently either more or less advantageous than the rest, so many people would crowd into it in the one case, and so many would desert it in the other, that its advantages would soon return to the level of other employments. ”



*Adam Smith*  
The Wealth of Nations, 1776

*250<sup>th</sup> Anniversary Next Year !*

44

44

*Who Needs Cost Curves?*

or

*What is the Opportunity Cost of Cost Curves?*

45

The *LT approach emphasizes mastering core economic concepts* rather than exposing students to a wide range of theories and techniques they are unlikely to use.

Prioritization means keeping content lean and focused.

*It's not about dumbing down; it's about choosing wisely.*

Some concepts are more critical than others, and *repeated application of key principles strengthens retention*, ensuring that students can use economic reasoning throughout their lives.

Covering more concepts means weaker mastery/retention.

*Every choice has an opportunity cost.*

46

46

“It is less important that everyone agree on what constitutes the best possible short list of principles, than that instructors begin with a plausible short list, and then hammer away at each of its items repeatedly.”

*Frank, 2012*

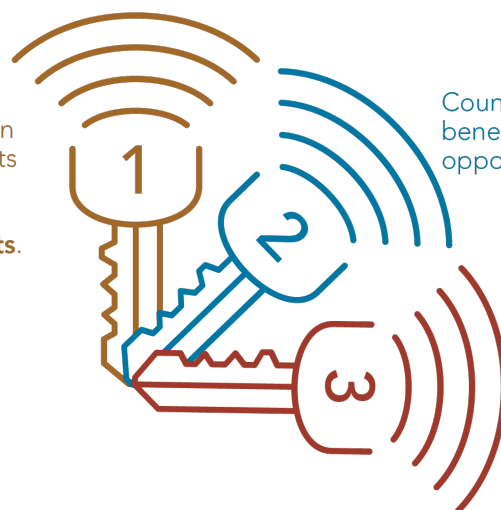


47

47

### Our Five-Minute University Takeaway: Three Keys Model to Smart Choices

Choose only when additional benefits are greater than additional **opportunity costs**.



Count only **additional** benefits and **additional** opportunity costs.

Be sure to count **all** benefits and costs, including **implicit costs** and **externalities**.

48

48



# Thank You !

Avi J. Cohen  
avi.cohen@utoronto.ca

49

## References

- Benjamin, D., Cohen, A., and G. Hamilton 2020. A Pareto-improving way to teach principles of economics: Evidence from the University of Toronto. *AEA Papers and Proceedings* 110 (May): 299–303.
- Cohen, A.J. 2024. What do we want students to (know and) be able to do: Learning outcomes, competencies, and content in literacy-targeted principles courses. *Journal of Economic Education* 55 (2): 128-45.
- Endresen, J. 2020. Bob Frank's legacy as a teacher, behavioral economist, economic naturalist, and author. Cornell Enterprise, August 7. Ithaca, NY: Cornell University, SC Johnson College of Business. <https://business.cornell.edu/hub/2020/08/07/bob-frank-legacy-teacher-behavioral-economist-economic-naturalist-author/>
- Frank, R. 1998. Some thoughts on the micro principles course. In *Teaching undergraduate economics: A handbook for instructors*, ed. W. B. Walstad and P. Saunders, 13–20. New York: Irwin McGraw-Hill.

50

50

Frank, R. 2012. A less-is-more approach to introductory economics. *Journal of Economic Methodology* 19 (3): 193-98.

Gilleskie, D. and M. Salemi. 2012. The cost of economic literacy: How well does a literacy-targeted principles of economics course prepare students for intermediate theory courses? *Journal of Economic Education* 43 (2): 111-32.

Hansen, W. L., Salemi, M., and J. Siegfried 2002. Use it or lose it: Teaching literacy in the economics principles course. *American Economic Review* 92 (2): 463-72.

Rubinstein, A. 2012. *Economic fables*. Cambridge, UK: Open Book Publishers.

Salemi, M. and J. Siegfried 1999. The state of economic education. *American Economic Review* 89 (2): 355-61.

Stigler, G. 1963. Elementary economic education. *American Economic Review* 53 (2): 653-59.

51

51

## 5 AposLTes...



George Stigler



John Siegfried



Mike Salemi



W. Lee Hansen



Robert Frank

of the **LT Approach to Principles**

52

52

“An introductory-terminal course in economics makes its greatest contribution to the education of students if it **concentrates upon a few subjects** which are developed in sufficient detail and **applied to a sufficient variety of actual economic problems** to cause the student to absorb the basic logic of the approach.”

*Stigler, 1963*



53

53

“Teach students to use a **limited number of central ideas** like opportunity cost, incentives, and comparative advantage ... [and] emphasize **depth of understanding**, and the **application** of abstract principles to the real world.”

*Salemi and Siegfried, 1999*



54

54

“ A Principles course **targeted to literacy** must focus more on basic concepts than today’s courses and texts do. Educational resources released by limiting the number of topics must be used to deepen student understanding of core ideas.”

*Hansen, Salemi, and Siegfried, 2002*



55

“ The best way to teach introductory microeconomics ... is to expose students to **repeated applications of a short list of the core ideas** of the discipline....[B]egin with a well-articulated short list of *some* sort, and then doggedly hammer away at it, illustrating and applying each principle in context after context.”

*Frank, 1998*



56

56