

Principles of Economics – Lecture 3 (Time) • Study Notes

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Big Picture

- **Time is the ultimate resource.** All scarcity originates from the scarcity of time.
 - Every economic action unfolds across time; production requires time as an input.
 - Because humans are mortal, time is limited and irreversible – making it the most fundamental economic good.
 - Julian Simon’s work (*The Ultimate Resource*) frames time as the key to understanding scarcity and abundance.
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Core Claims

1. **Time as an Economic Good**
2. Scarce and valuable, like other goods, but unique because it is irreversible.
3. You can replace goods, but you cannot buy back time.
4. **Scarcity Comes From Time**
5. Physical materials on Earth are practically infinite relative to human use.
6. What makes goods scarce is the **time** required to make them usable.
7. **Opportunity Cost Defined by Time**
8. Every action has a cost: the foregone action you could have taken with the same time.
9. Time’s scarcity ensures all decisions involve trade-offs.
10. **Resources Are Human Creations**
11. Oil, gold, iron – they are not “resources” until humans dedicate time to make them usable.

12. Proven reserves grow as we spend more time searching and producing.
 13. **Abundance vs. Scarcity**
 14. Proven reserves of raw materials have increased over decades despite growing consumption.
 15. Commodities get cheaper in terms of human labor (time prices fall), showing abundance grows with time.
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Key Concepts & Mental Models

- **Ultimate Resource:** Time is the binding constraint, not Earth's finite size.
 - **Proven Reserves:** Not a cap on total supply, just what humans have discovered with time investment.
 - **Opportunity Cost:** The foregone best alternative when time is allocated.
 - **Time Preference:** Universal human preference for present goods over future goods (explored deeper in Lecture 13).
 - **Labor vs. Leisure:** Two main uses of time — productive work for future gain vs. enjoyment for its own sake.
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Illustrative Examples

- **Oil Reserves:** From 1950 to 1990, population and GDP grew, yet proven reserves of oil and other materials multiplied (oil $\times 13$, bauxite $\times 16$). Scarcity fears proved wrong.
 - **Swimming Pool Analogy:** All global mining to date equals half a cup of water taken from an Olympic pool — negligible compared to Earth's abundance.
 - **Simon-Ehrlich Bet:** Ehrlich predicted resources would run out; Simon bet prices would fall. Simon won across all five commodities, showing abundance increases with time and human ingenuity.
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Quotable Ideas

- “Time is the ultimate resource.” — Julian Simon
 - “The only real scarcity is human time.” — Ammous
 - “Value is created by human action. Resources don’t exist until we make them.”
— Ammous
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Study Prompts

- Why is time considered the ultimate resource?
 - Explain how scarcity of goods is rooted in the scarcity of time.
 - What is opportunity cost, and how does time give rise to it?
 - How did the Simon-Ehrlich bet illustrate the difference between physical limits and economic scarcity?
 - What trade-offs exist between **labor** and **leisure**?
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TL;DR

Time is the binding constraint on all human action and production. While Earth’s materials are abundant, their availability as resources depends on the time we dedicate to making them useful. All scarcity, therefore, is ultimately time scarcity. Opportunity cost reflects this reality: every choice is a trade-off in how we spend our limited time. Proven reserves and commodity prices demonstrate that abundance grows as humans invest time and ingenuity, not that Earth is “running out.” At its heart, economics is about economizing time — balancing labor for the future with leisure in the present.
