David Ricardo

Father of political economy

Broad outline

- Who was David Ricardo?
  - Brief bio and why he matters for history of econ thought, early life and career
- Theory of rent and profits
  - Formal model and why it mattered for land use and income distribution
- Political economy: Economic basis of conflict between capitalists and landlords, labor theory of value and price determination with different compositions of capital as well as the distribution of income
- Macroeconomics: impossibility of gluts, machinery, comparative advantage, international trade

Today: three things you will be able to do

- 1. Compute rent. Given net produce on three or more plots, say what rent each pays and what profit each farmer earns, and why competition among farmers forces that result. (HL p. 93, Fig. 5.1)
- 2. Trace the squeeze. On the margin-of-cultivation diagram, show that worse land raises rent and lowers the rate of profit even when the corn wage does not change, and name where accumulation stops. (HL pp. 95–98, Fig. 5.4)
- 3. State the policy and take a side. Why the landlord's interest is opposed to every other class, why Ricardo opposed the Corn Laws, and why Malthus, with the same rent theory, did not. (HL pp. 96, 98, 115–116)
- A video game to help us.
    - https://ricardo-farm.pages.dev/

David Ricardo

A sketch of his life

What was he like?

- He was born in London in 1772, died in 1823 at age 51
- Self-taught man with an almost insatiable intellectual curiosity
  - Reads Smith's Wealth of Nations in 1799 (age 27)
  - From then until his death, divides his time between studying and writing about issues in "political economy" and building wealth
- Reserved, but approachable and highly respected by his peers
  - Considered the most rigorous theorist of the classical economists, bar none
  - Could build a model of how capitalism worked and then depict all of its logical implications
- Had a big impact on the flow of economics after him
  - Influences include John Stuart Mill and Karl Marx, both the conservative and radical traditions in economic thought of the 19th and 20th centuries
  - Top five most influential economist of modern times

His father, family and faith

- His early years were shaped by a family very focused on finance
  - Family was affluent and orthodox in religious practices
- His father was a Dutch-Jewish stock market trader
  - Father was Abraham Ricardo, a very successful stock market trader
- His father, Abraham, was rigid, traditional, emphasized faith and finance

Malthus and Ricardo: Complex Friendship

- Despite differing views, Malthus and Ricardo were close personal friends
- Malthus generally favored the Corn Laws
  - it was grounded in his belief that high agricultural prices would benefit the nation by raising profits and stimulating agricultural production and make the nation less dependent on foreign imports
- Ricardo held the antithetical position which illustrates deeper disagreements of theirs in economic theory
- Ricard's arguments seemed more rooted in a general belief in the efficiency of markets (though "efficiency" is not yet in his vocabulary), but recall Malthus had a deeply pessimistic view about markets, and tended to emphasize market failures

Malthus and Ricardo's Complex Friendship

- **Shared influences**: both lived through the French Revolution, the industrial revolution, and major social upheavals which shaped their views
- **Working class**: Ricardo admired Malthus's work on population and accepted his conclusions regarding workers' poverty
- **Primary Social and Theoretical Differences:**
  - Ricardo was a defender of the capitalist class, but they disagreed on the landlord-capitalist conflict
  - Also differed on the theory of value and Malthus's theory of gluts

Quotes

- Ricardo on Malthus's population theory and workers' poverty:
  - "Of Mr. Malthus's *Essay on Population* I am happy in the opportunity here afforded me of expressing my admiration. The assaults of the opponents of this great work have only served to prove its great strength; and I am persuaded that its just reputation will spread with the cultivation of that science of which it is so eminent an ornament."
- Preface to his *Principles of Political Economy and Taxation,* he states what he considered as the central problem of political economy:
  - "The produce of the earth-all that is derived from its surface by the united application of labour, machinery, and capital, is divided among three classes of the community, namely, the proprietor of the land, the owner of the stock of capital necessary for its cultivation, and the labourers by whose industry it is cultivated. To determine the laws which regulate this distribution is the principal problem in Political Economy."

Theory of Rent and First Approach To Profit

1815: Malthus, then Ricardo

- Malthus publishes An Inquiry into the Nature and Causes of Rent.
  - Ricardo reads it at once and sees that it completes a theory of profit he has been working on.
- Ricardo already believed the price of corn is set by the worst land in use, and that the rate of profit falls as worse land is cultivated.
- Three weeks later: Essay on the Influence of a Low Price of Corn on the Profits of Stock. The model you are about to see, aimed at the Corn Laws.
- The question it answers: as population grows and worse land comes under the plough, who gets the produce?

Rent, and what it comes out of

- Ricardo: rent is “that portion of the produce of the earth which is paid to the landlord for the use of the original and indestructible powers of the soil.” (HL p. 92)
- Not the modern meaning. Not a payment for any property; only for the soil's difference in fertility.
- **Net produce**: total output minus everything needed to produce it, wages included. It is the surplus, and it goes to profit or to rent, nowhere else. (HL pp. 92–93)

The logic, step by step (HL p. 95)

1. One good, corn. Three classes: landlords, capitalists, laborers.
2. Profit is a surplus: what is left after the costs of production.
3. Competition equalizes profit across plots, so profit everywhere equals profit on the no-rent, marginal land.
4. Malthus: population growth pushes wages to subsistence.

The logic, continued

5. So profit on the marginal land = its produce minus the subsistence of the labor working it.
6. Capital is the corn advanced as wages. So the rate of profit = net produce on the no-rent land ÷ wages, both in corn.
7. As worse land comes in, net produce at the margin falls while the corn wage holds. The rate of profit must fall.
8. Competition equalizes profit across sectors, so manufacturing's rate of profit is set on the no-rent land too.

The equilibrium and what it implies

- Equilibrium: no farmer gains by moving. One rate of profit everywhere; zero rent at the margin.
- Growth enriches landlords without their doing anything, and squeezes the capitalists who drive it.
- Accumulation stops when the marginal plot's produce equals the wage: the stationary state (HL p. 114).
- Anything that pushes the margin out, such as the Corn Laws blocking imports, transfers income from everyone else to landlords.

Why it matters

- It is the first fully worked abstract model in economics: assumptions, deduction, policy. That method is still ours.
- It takes Malthus's own theory of rent and turns it against Malthus's class, with the same assumptions.
- It answers our spine question with conflict, but a specific one: the landlord against everyone, capitalist and worker on the same side.
- It is the bridge to Marx, who will ask why profit is not also a deduction from what labor produces.

Key Assumptions in Ricardo’s Theory

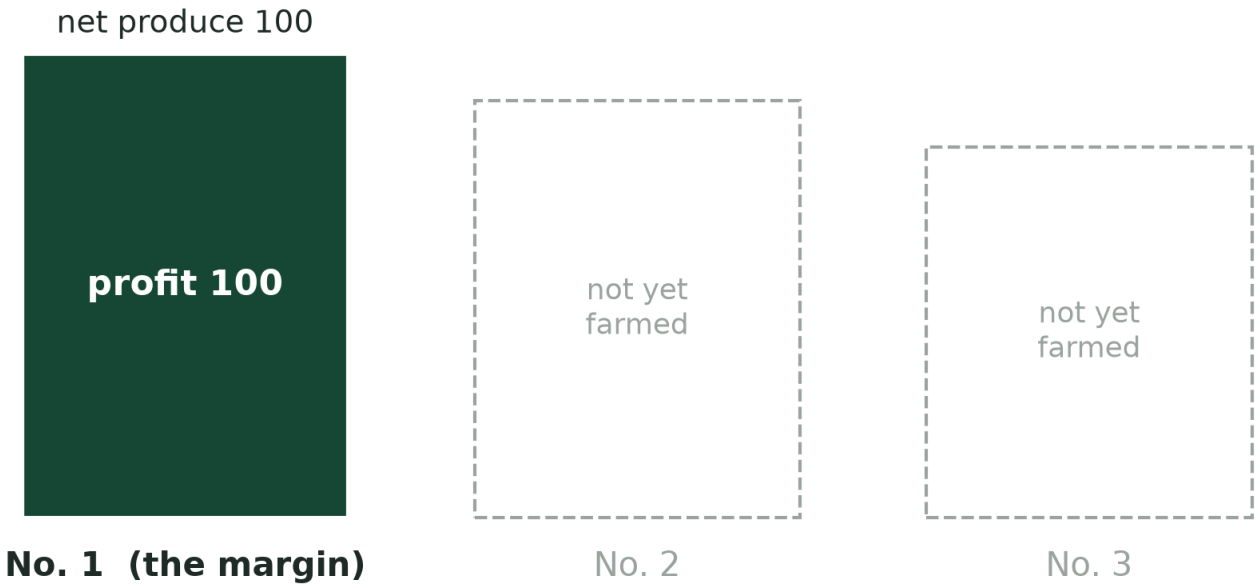
- **Fertility Variation**: One of Ricardo's first assumptions was that land varies in its fertility levels.
- **Profit Equalization**: His second assumption was that competition among capitalist farmers would equalize the rate of profit across different lands.

Read the example together

- Each plot gets the same dose of capital and labor. Plots differ only in fertility.
- The worst land in use, the margin, pays no rent and sets the profit every farmer earns.
- Keep one question in mind: what changes when the next plot comes in?
- Start at the top of the section and read Ricardo's three plots aloud (HL p. 93).

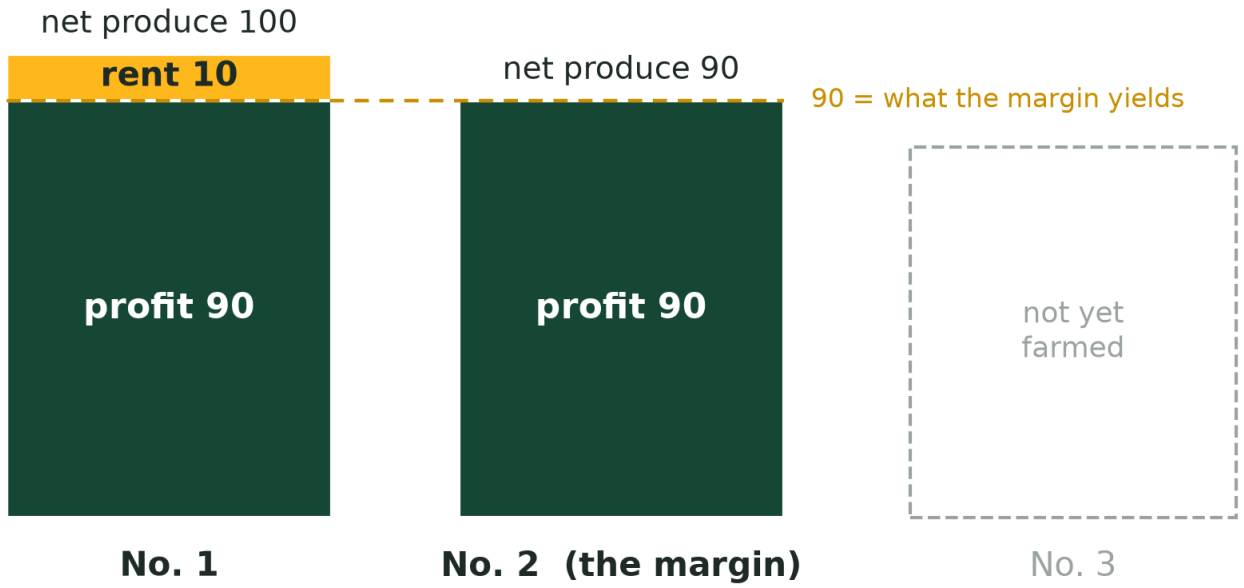
Ricardo’s rent model

Initial Scenario: Initially, only land number 1 is under cultivation, and the capitalist farmer on this land makes a profit of 100 quarters (a unit of measure).



Ricardo’s rent model

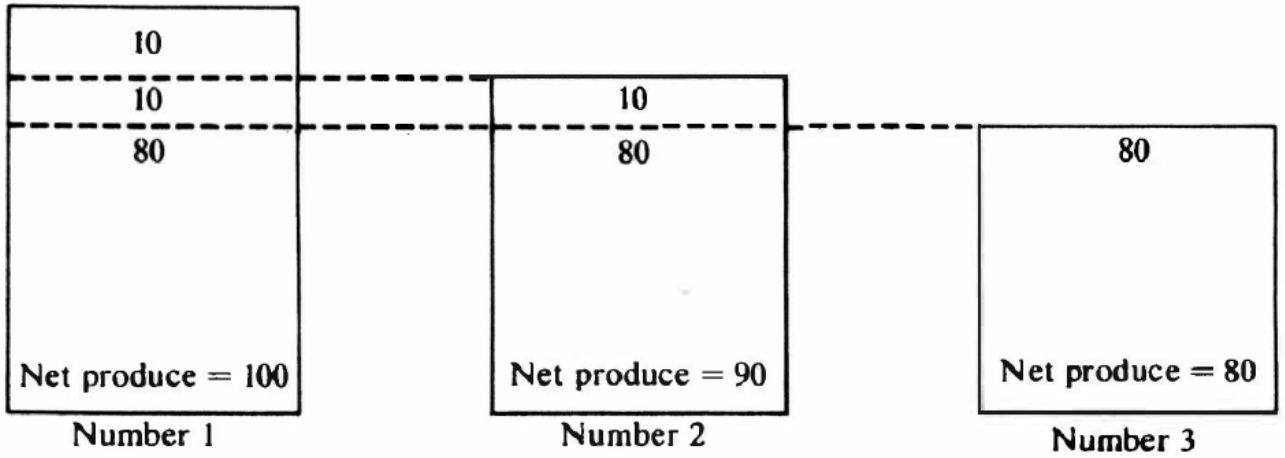
Expansion to Land Number 2: When land number 2 is cultivated, competition drives the rent on land number 1 up to 10 quarters, equalizing the profit on both lands to 90 quarters.



Ricardo’s rent model

Further Expansion to Land Number 3: The cultivation of land number 3 leads to competitive bidding that pushes the rent on land number 1 to 20 quarters and on land number 2 to 10 quarters, equalizing the profit on all three lands to 80 quarters.

Figure 5.1 **Net Produce and Rent on Three Tracts of Land**



Why can't the farmer on No. 1 pay only 15?

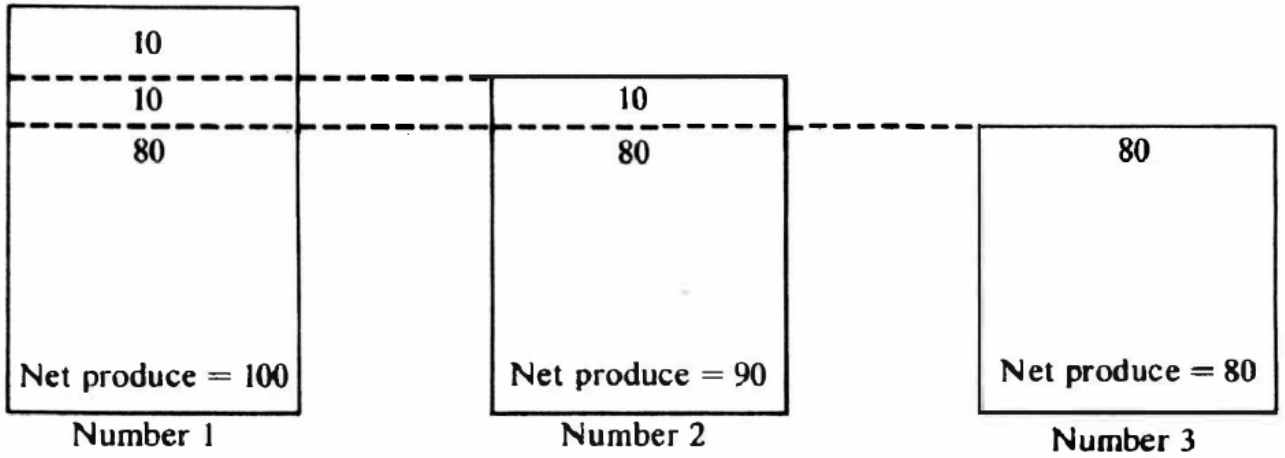
Three plots in use. At 15 he keeps 85. Every other farmer keeps 80.

A farmer on No. 3 offers the landlord of No. 1 more, say 18. He would still keep 82 there.

The bidding stops only at 20, where every farmer keeps 80 and no one gains by moving. (HL p. 93)

The rule: rent on a plot = its produce – produce on the marginal plot. Profit = what the marginal plot earns.

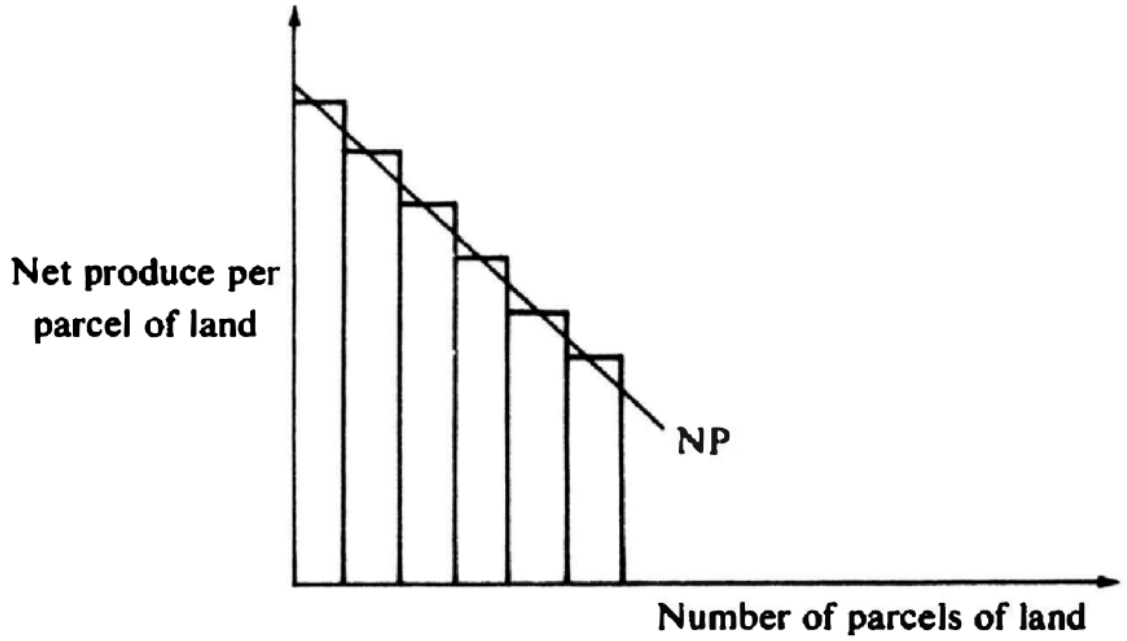
Figure 5.1 **Net Produce and Rent on Three Tracts of Land**



From bars to a line: Figure 5.2

- Make the parcels smaller and smaller. The tops of the bars become a line, NP.
- Net produce per parcel falls as the number of parcels in use rises.
- The last parcel in use is the margin. Everything above its height is rent.

Figure 5.2 **Diminishing Productivity in Agriculture**



The corn rate of profit

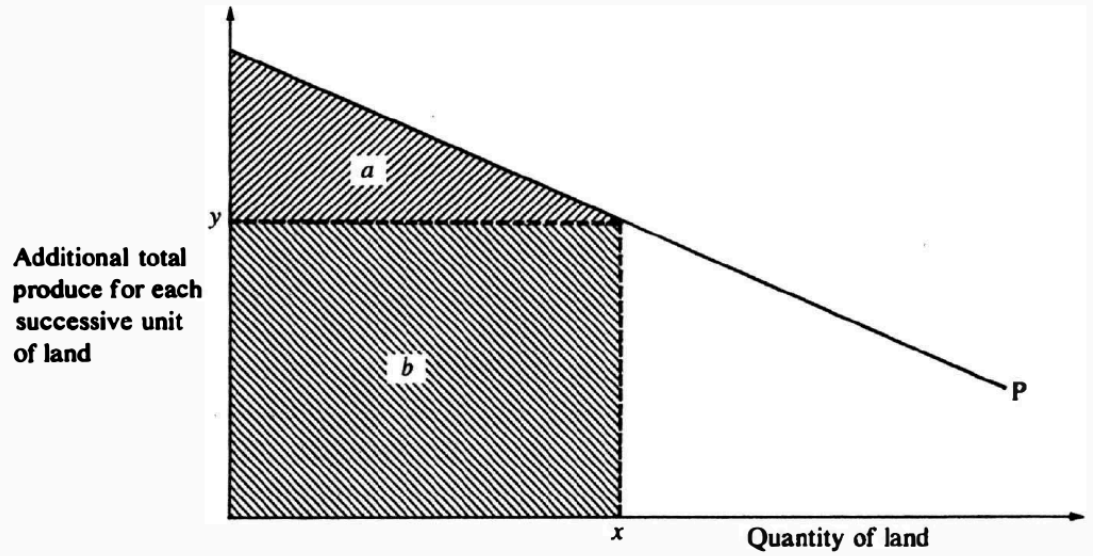
1. Wages sit at subsistence (Malthus). Profit on the no-rent land = its produce – the subsistence wage of the labor on it.
2. Capital is the corn advanced as wages, so r = net produce on the no-rent land ÷ the corn wage. (HL p. 95)
3. As worse land comes in, net produce on the margin falls and the wage does not. r falls.
4. Competition spreads the same r to manufacturing, so the whole economy's profit rate is set on the worst farm. (HL p. 95)

Economic Basis of Conflict Between Capitalists and Landlords

Introduction

- Ricardo's argument: Landlords' interest is opposed to other community classes.
- Economic prosperity linked with capital accumulation, driven by capitalist profits.

Figure 5.3 **Separation of Rent from Profits and Wages**



Agricultural Productivity

•With capital accumulation, demand for labor rises pushing wages above subsistence.

•Figure 5.3: triangle a is total rent; rectangle b is wages plus profit. Rent is each plot's gap over the marginal plot, summed.

Figure 5.3 **Separation of Rent from Profits and Wages**

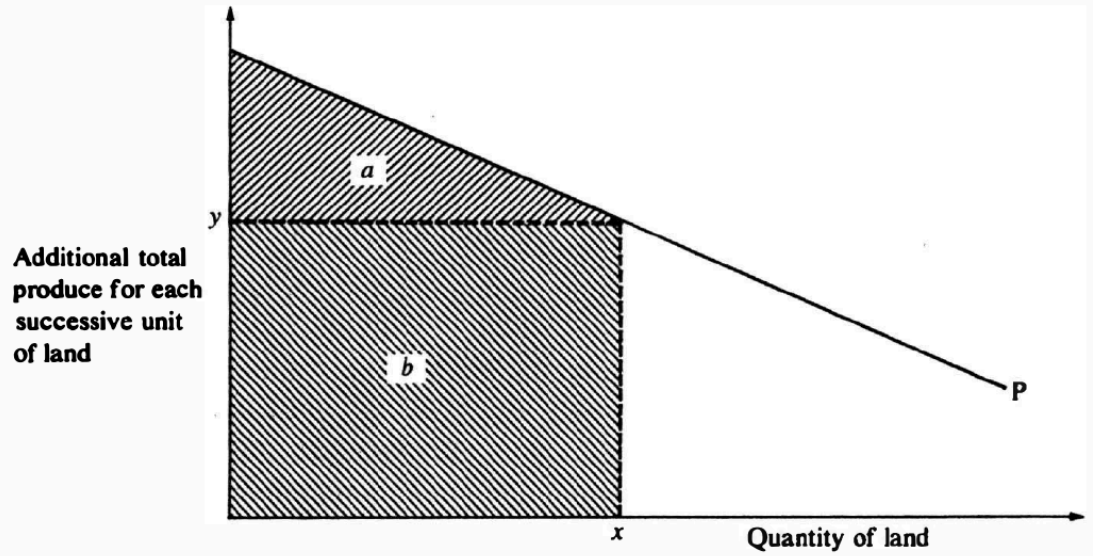
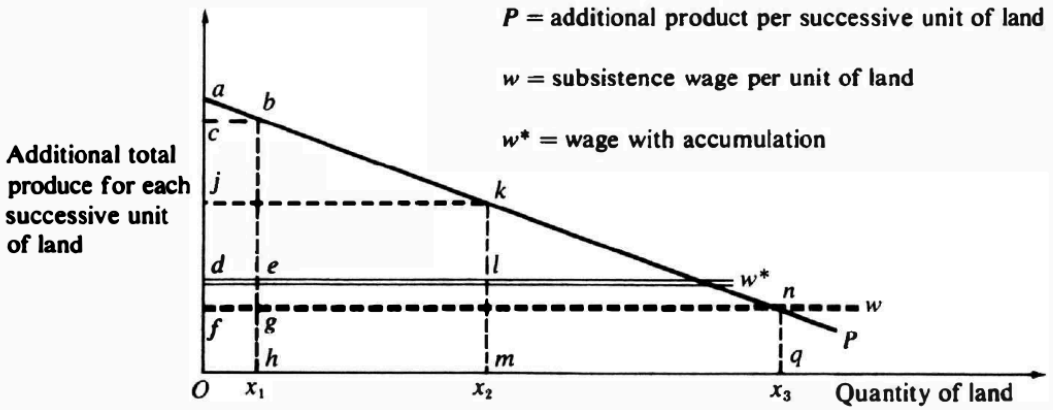


Illustration with Figure 5.4

- Expanding cultivation from x1 to x2 decreases total profits and the profit rate, despite constant wage rate.
- At x3, wages are back to subsistence, with no profits earned; rents consume the surplus.
- x3 is the stationary state (HL p. 114): marginal produce equals the wage, profit is zero, no motive to accumulate.

Figure 5.4 **Changes in the Distribution of Income as the Margin of Cultivation Is Extended**



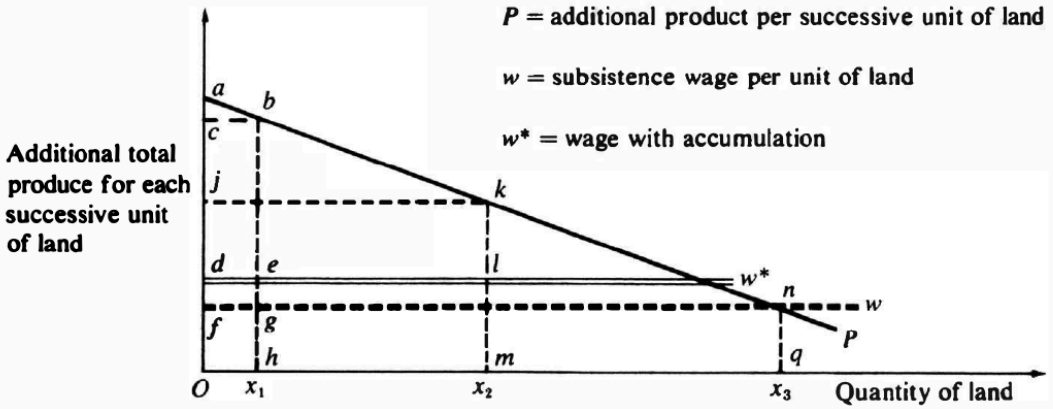
The squeeze in numbers

- Produce per plot 150, 140, 130, … , 60. Wage 80 per plot. Rent on a plot = its produce − marginal produce. Profit per plot = marginal produce − wage.
- 3 plots in use: marginal produce 130, profit per plot 50, r = 0.625, total rent 30
- 5 plots: 110, 30, r = 0.375, rent 100
- 7 plots: 90, 10, r = 0.125, rent 210
- 8 plots: 80, 0, r = 0, rent 280. The stationary state.
- The wage never moved. This table is on your worksheet and in the game.

Struggle for Surplus

- Diminishing productivity results in higher rents, squeezing out profits.
- Rent consumes previously obtained profits on land, not creating new revenue.
- Mechanism (HL p. 97): dearer corn raises the money wage; the higher wage lowers profit. Rent is the residual, not the cause.

Figure 5.4 **Changes in the Distribution of Income as the Margin of Cultivation Is Extended**



Impact of Corn Laws and Malthus’s Critique

- Ricardo opposes corn laws, attributing them to declining profits and halted economic progress.
- Malthus criticizes Ricardo's static price assumption, arguing profits are influenced by varying commodity prices.

Ricardo’s Response

- To defend his model, Ricardo develops a more comprehensive theory of prices in his Principles.
- Aims to address the varying price impact on profits, responding to Malthus's critique.

Ricardo’s Farm: play the model

- ricardo-farm.pages.dev · class code: corn
- Level 1, the bidding: find the rent at which no farmer moves. The ledger shows who gains by taking your plot.
- Level 2, the margin: press Next year until the capitalists earn nothing. Watch the entry test fall to zero.
- Level 3, the Corn Laws: the world price sets the no-rent level. Who wants the ban?
- Pencil first. The farm checks your arithmetic; Ricardo asks questions, he does not give numbers.
- Worksheet page 4 uses the same schedule: produce 150 down to 60, wage 80. Check it in My schedule.

Ricardo’s Farm: how to play

- Go to ricardo-farm.pages.dev. Class code: corn.
- Read Meet Ricardo. Then Level 1. Press “Watch a round” first: it plays p. 93 by itself, the farmer who offers 15 and gets outbid to 20.
- Pencil first. Four puzzles ask for a number; the farm will not show it until you commit to one.
- Ask Ricardo (bottom right) can see your farm. He will not give you the number; he will ask you a question. That is on purpose.

Ricardo’s Farm: the puzzles

- Level 1, the bidding: find the rent at which no farmer moves. The ledger shows who gains by taking your plot.
- Level 2, the margin: press Next year until the capitalists earn nothing. Watch the entry test fall to zero.
- Level 3, the Corn Laws: the world price sets the no-rent level. Who wants the ban?

QR code to game

.cardo-farm.pages.de

class code: corn

Economic Reforms and Policy Contributions

- Advocated for more government efficiency and reduced public expenditure
- Often found himself at odds with traditionalists but as he was such a careful, well reasoned person, tended to get a lot of respect
- He was also very interested in monetary policy, including the gold standard, and took active role in discussions about Britain’s monetary system with a sharp focus on the question of a “metallic” standard and the resumption of specie payments

The Bullion Controversy and Monetary Policy

- In the wake of Napoleonic Wars, Britain had suspended the convertibility of paper money into gold
- The Bullion Committee was formed to debate the issue, and although Ricard wasn't yet in Parliament, his written works were influential in shaping the committee's recommendations
- Ricardo's position: strong advocate for the gold standard as a *mechanism* for long-term economic stability
  - Argues for the resumption of specie payments where banknotes could be converted to a fixed amount of gold
  - Stable currency backed by gold would control inflation, encourage investments

Legacy and Impact in Parliament

- Ricardo's influence is felt in the passage of the 1821 act that resumed the gold standard
- His ideas on monetary policy gained traction among policymakers and played a role in shaping Britain's financial system (echo'ing back his family's life and his life in finance more generally) – steers the nation back to a metallic standard
- Contributions to monetary policy were perhaps one of the more defining features of his career and set the groundwork for future discussions on central banking and currency stability
- Remains a notable figure, in fact, for his arguments in favor of gold-backed currency in the history of economic though
- One of the better examples we have from economic history of an economist whose ideas have real world impact on policy (despite only four years in Parliament)

Ricardo’s Labor Theory of Value

Introduction

- Following slides encapsulate Ricardo's perspective on the labor theory of value, its significance, his extension of Adam Smith's assertions, and how he addresses various objections to this theory while navigating through the nuances of capitalist society.

Introduction

- Utility vs Value: Commodities derive value from scarcity and labor required, not utility.
- Freely reproducible commodities are the focus of Ricardo's theory of value.
- Rare, non-reproducible items like rare statues have value independent of labor.

Ricardo’s emphasis

- Ricardo emphasizes on the abundance of reproducible commodities through labor.
- Dismisses the utility theory of value for its lack of focus on capital accumulation.
- Capital accumulation seen as crucial for a nation's welfare.

Base Hypothesis

- Prices of commodities are proportional to the labor embodied in them.
- Labor theory is said to be rooted in the social aspects of production, contrasting with utility theory's individual focus.
- Labor's role in value creation seen as a doctrine of utmost importance in political economy.

Extension from Adam Smith

- Quotes Smith's example: the effort to kill a beaver or deer sets their exchange value.
- Ricardo extends this assertion to capitalist societies with modifications.
- Acknowledges qualifications to simple proportionality due to different circumstances in capitalist society.

Addressing Objections

- Tackles objection regarding differing skills and wage rates among laborers.
- Focused on relative price variations over time, not the exact structure of relative prices at a particular time.
- Suggests differences in skills reduce to time spent acquiring these skills, hinting at later developments in labor theory of value.

Labor vs Capital Contribution

- Argues tools and machinery are intermediate products of labor, aiding in final commodity production.
- Sees production as a strictly human endeavor, dismissing natural resources as a social cost.
- Emphasizes the role of past labor embodied in machinery and tools.

Ricardo’s View of Capital

- Considers capital as wealth employed in production, not solely tools or machinery.
- Assumes identical pricing system whether laborers own their capital or not.
- Overlooks the class relationship that defines capital, focusing instead on the physical means of production.

Profits, Wages and Prices

- Ricardo's model: all prices resolvable into wages and profits, excluding rents.
- Natural prices determined by the sum of wage costs and profit costs, influenced by labor.
- Rent seen as a residual income, not a component of the costs determining prices.

Market Price and Natural Price

- Supply and demand, by equalizing profit rates, push market price towards equality with natural price.
- Identifies rent as not a component of necessary costs of production.
- Natural price: a sum of wage and profit costs, determined by labor embodied in production.

Significance and Critique

- Labor theory of value enables a focus on capital accumulation and social aspects of commodity production.
- Ricardo's ahistorical view of capitalism critiqued for overlooking the social relationship defining capital.
- His theory serves as a foundation for later elaborations and critiques in economic thought.

Price Determination with Differing Compositions of Capital

Summarizing slides

- The narrative that follows intertwines the historical theories of value with practical examples and theoretical illustrations, constructing a nuanced understanding of price determination amid varying capital compositions

Plain Language Intro

- In simple terms, this section of the book explores how prices are determined in different scenarios, emphasizing the role of labor and capital in the production process.
- It shows how a change in wages or the composition of capital can affect the price of commodities.
- The text also dives into historical economic theories of value and price determination, shedding light on the complexities involved.

Plain Language Intro

- Imagine two bakeries. Bakery A spends most of its money on bakers while Bakery B spends most of its money on advanced baking machines.
- If the cost of hiring bakers increases, Bakery A will face a higher increase in its costs compared to Bakery B.
- This situation influences the price of the bread they sell.
- Even though both bakeries started with the same number of bakers, the way they allocate their funds - on labor or machines - impacts their cost structure and, eventually, the bread's price.

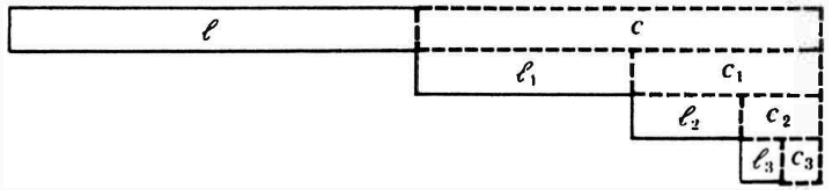
Historical Context

•Adam Smith, Ricardo, and Marx tackled the problem of price determination, focusing on the ratio of capital to labor in the production of commodities.

•Smith noted that for prices to reflect the labor involved, the ratio of profits to wages must be constant across all commodities. However, he realized this wasn't feasible due to varying capital-to-labor ratios across industries, leading him to a cost-of-production theory of prices.

•Ricardo and Marx believed in the labor theory of value, where competition equalizes profit rates, and natural prices correspond to production costs when labor and capital are compensated at socially average rates.

Figure 5.5 **Reduction of Capital to Past Labor**

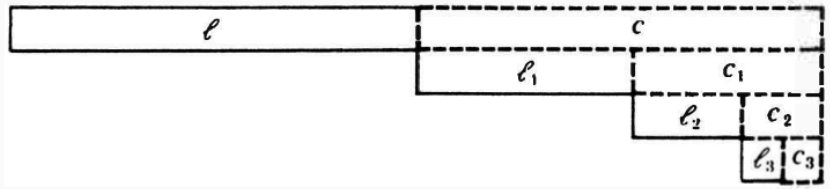


Labor Theory of Value

•Ricardo and Marx faced a challenge: prices are influenced by wages and profits, which are also prices.

•They aimed to find a non-price determinant, settling on the labor embodied in commodities.

Figure 5.5 **Reduction of Capital to Past Labor**



Capital Composition

•The scenario of two firms illustrates the implications of different capital compositions - one heavily invested in labor and the other in machinery.

•The text highlights how an increase in wage rates can disproportionately affect the firms, altering the price ratio between their products even when the labor embodied remains unchanged.

Figure 5.5 **Reduction of Capital to Past Labor**

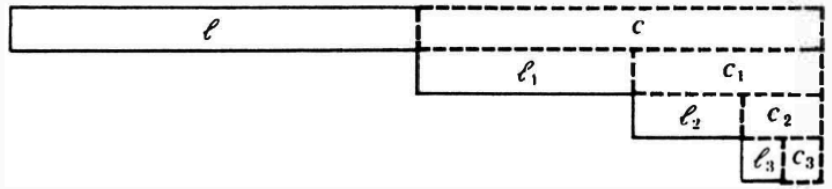


Illustration through Figures

•Figure 5.5 visualizes the recursive nature of capital, showing how current labor and commodities result from past labor and commodities, down several periods.

•Figure 5.6 simplifies this by eliminating the commodities, leaving a sequence of time-dated labor. This sequence is key to understanding how capital tied up over time accumulates profits, impacting the final commodity price.

Figure 5.5 **Reduction of Capital to Past Labor**

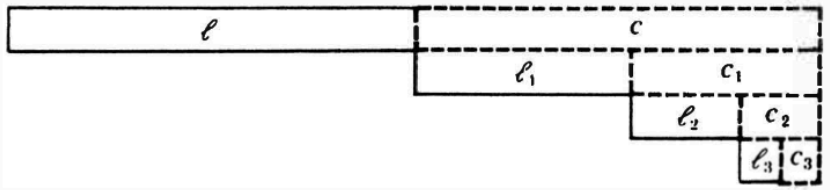
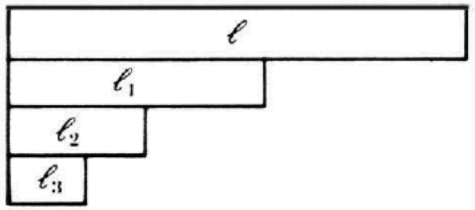


Figure 5.6 **Sequence of Time-Dated Labor**



Profits Accumulation

•Profits accrue over the production process duration, with earlier investments compounding over time.

•This compounding effect is visualized in Figure 5.6, demonstrating how earlier labor costs grow with compounded profits, affecting the final commodity price.

Figure 5.5 **Reduction of Capital to Past Labor**

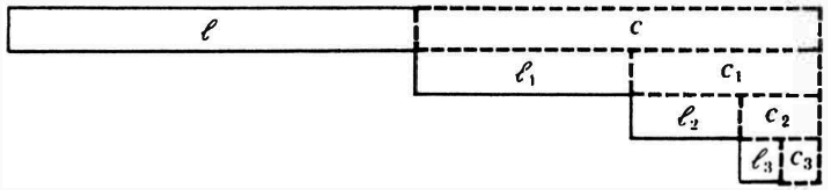
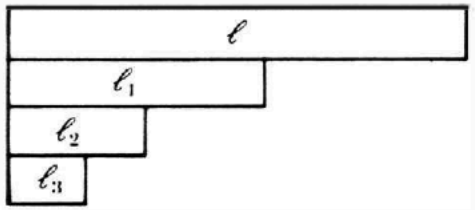


Figure 5.6 **Sequence of Time-Dated Labor**



Ricardo’s Special Cases

- Ricardo identifies three situations where a change in wage rates alters relative prices, despite unchanged labor embodied quantities.
- These scenarios highlight varying capital-to-labor ratios, durability of machinery, and capital turnover rates.

Profit Compounding

- An example illustrates how a capitalist can accumulate compounded profits over multiple periods, affecting the final commodity price.
- The text shows the equivalency of profits between different investment strategies over time, linking back to the capital composition and its time dimension.

Value of Capital over Time

- The text concludes by showing how the value of capital grows over time with compounded profits, emphasizing how either more capital per worker or a longer production period yields higher capital value at the end, albeit with the same initial labor costs.

Why can't the farmer on No. 1 pay only 15?

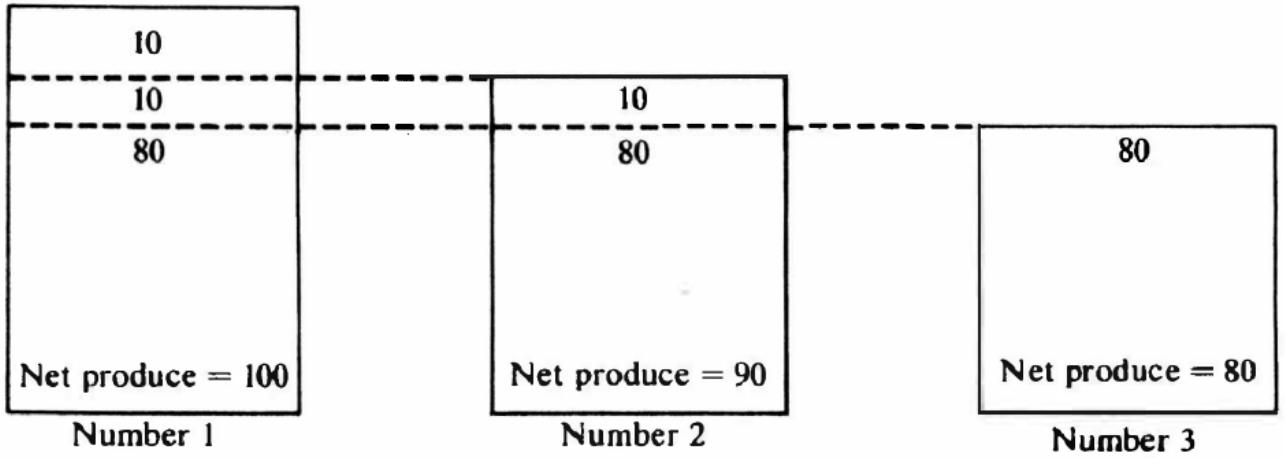
Three plots in use. At 15 he keeps 85. Every other farmer keeps 80.

A farmer on No. 3 offers the landlord of No. 1 more, say 18. He would still keep 82 there.

The bidding stops only at 20, where every farmer keeps 80 and no one gains by moving. (HL p. 93)

The rule: rent on a plot = its produce – produce on the marginal plot. Profit = what the marginal plot earns.

Figure 5.1 **Net Produce and Rent on Three Tracts of Land**



Why can't the farmer on No. 1 pay only 15?

Three plots in use. At 15 he keeps 85. Every other farmer keeps 80.

A farmer on No. 3 offers the landlord of No. 1 more, say 18. He would still keep 82 there.

The bidding stops only at 20, where every farmer keeps 80 and no one gains by moving. (HL p. 93)

The rule: rent on a plot = its produce – produce on the marginal plot. Profit = what the marginal plot earns.

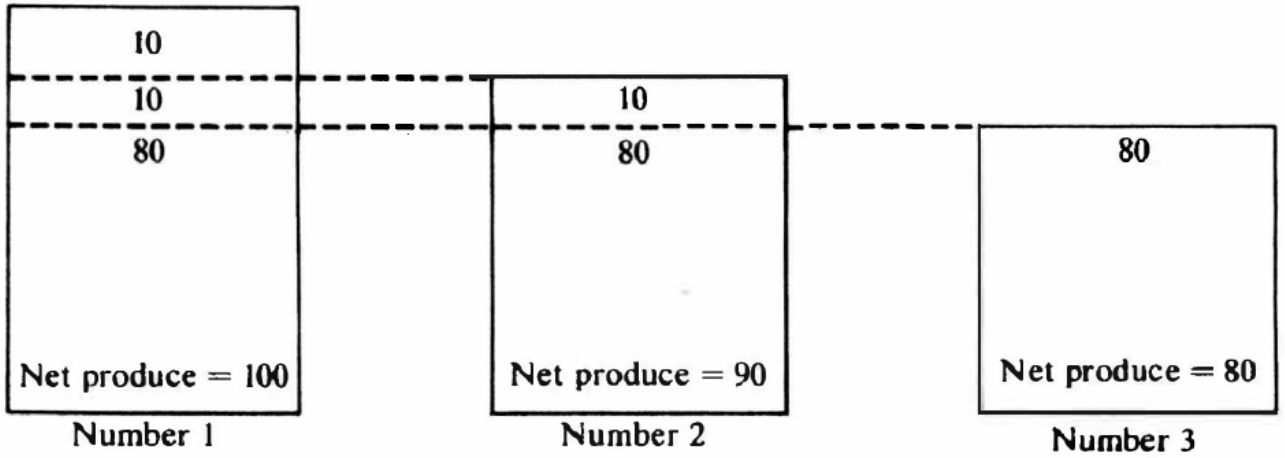



Figure 5.1 **Net Produce and Rent on Three Tracts of Land**