

2.4 – Ricardo & Rent

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Ryan Safner

Associate Professor of Economics

 safner@hood.edu

 ryansafner/thoughtF22

 thoughtF22.classes.ryansafner.com



Outline



The Corn Laws

The Ricardian System

Ricardian Rent Theory

David Ricardo



David Ricardo

1772-1823

- Family of Portuguese Jewish refugees emigrated to England
 - David elopes with a Quaker woman, converts to Unitarianism, gets disowned by his family
- A stockbroker, became independently wealthy and retired
 - careful investment earned him a large fortune (approx £1m)
 - became quite a large landowner himself (consider his views!)
- Friends and Political Economy Club-mates with other Classical Economists: Torrens, Mills, Malthus, etc.
- Became a Member of Parliament for last 4 years of his life
- Died suddenly at 51, followers take over

David Ricardo



David Ricardo

1772-1823

- First writes pamphlets in response to British political crises
 - *The High Price of Bullion, a Proof of the Depreciation of Bank Notes* (1810)
 - *Essay on the Influence of a Low Price of Corn on the Profits of Stock* (1815)
- Then writes his master treatise
 - *On the Principles of Political Economy and Taxation* (1817)
- A flurry of letters between him and Malthus (1810-1823)
 - *The Works and Correspondence of David Ricardo* (1951-73, collected by Neo-ricardian Piero Sraffa)

David Ricardo



David Ricardo

1772-1823

- Smith is extremely quotable, Ricardo is not
- Ricardo was a businessman, did not have university education
- Yet ironically, he wrote very abstractly and theoretically (though without math)
- So we will primarily understand him via his theoretical system



The Corn Laws

The Corn Laws



- Britain, long an exporter of corn, with population growth was no longer self-sufficient, became a net *importer* of corn after 1790
 - “Corn” = **grains**: wheat, barley, corn, etc.
- Corn prices (and land rents) rising rapidly

Period	Price per $\frac{1}{4}$ ton
1770-1779	45 shillings
1780-1789	45 shillings
1790-1799	55 shillings
1800-1809	82 shillings



The Corn Laws



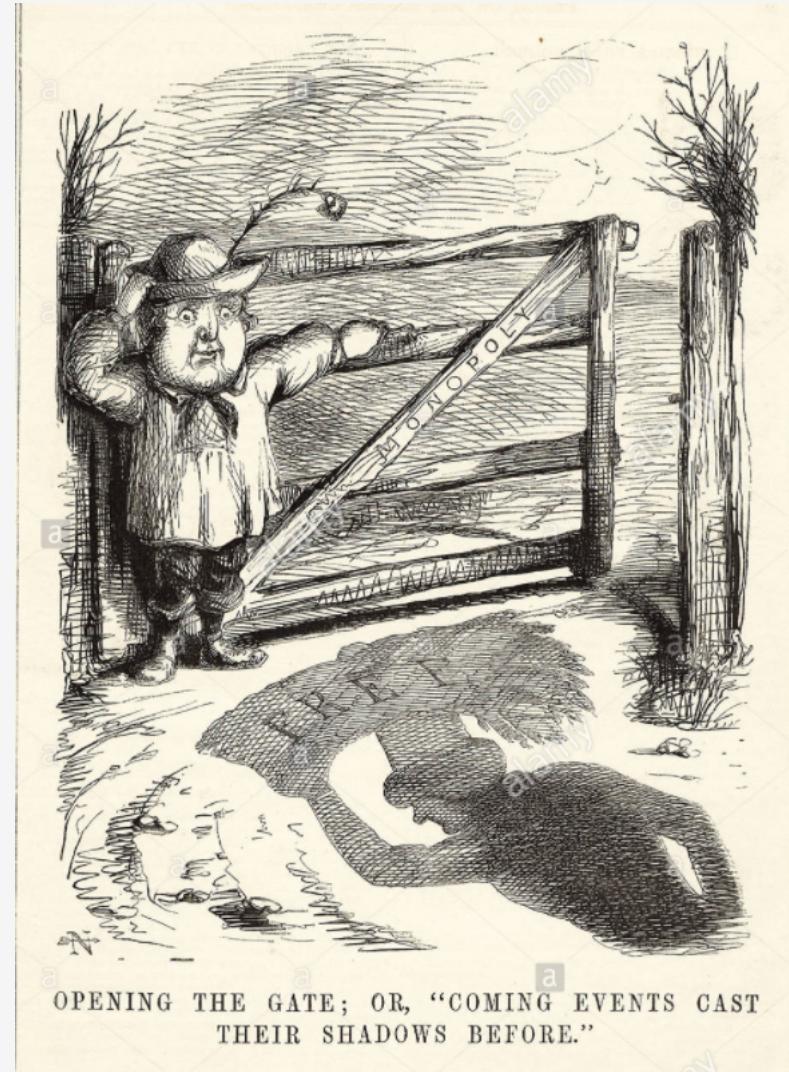
- Britain at war with France in Napoleonic Wars (1803-1815)
- Further disrupting imports of corn into Britain (and further raising corn prices (and thus land rents))
 - and artificially protecting British corn producers from cheaper foreign competition



The Corn Laws



- Landlords, fearing the end of the war, petitioned Parliament to get legal protection from cheaper, imported Corn
- **The Corn Laws:** a series of tariffs and price floors by Parliament
 - 1791: Floor at 50 shillings
 - 1803: Floor at 63 shillings



The Corn Laws



- In 1813 nearing the end of the war, proposal to keep high price floor of 80 schillings per $\frac{1}{4}$ ton
- Becomes the major political issue of the day, riots in London
- David Ricardo, Robert Torrens, Thomas Malthus, and Edward West enter the debate
- Parliament collects facts and issues an 1814 report



Thomas Malthus: In Favor of the Corn Laws



Thomas Robert Malthus

1766-1834

- Only classical economist to defend the Corn Laws, on two grounds:
 1. “National security”: Britain should not depend on other countries for her food supply; in bad times, they will feed themselves and not export to Britain
 2. A sudden fall in Corn prices would destabilize the British economy

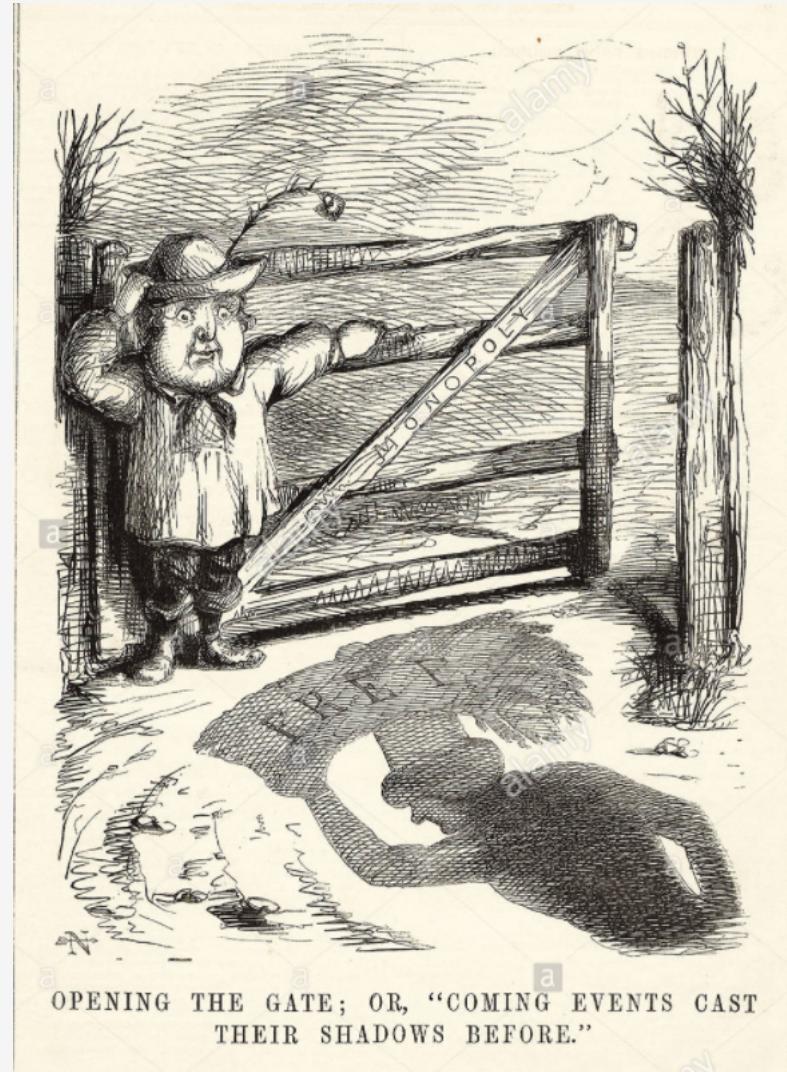
Malthus, Thomas, 1814, *Observations on the Effects of the Corn Laws*

1815, *The Grounds of an Opinion on the Policy of Restricting the Importation of Foreign Corn*

The Corn Laws



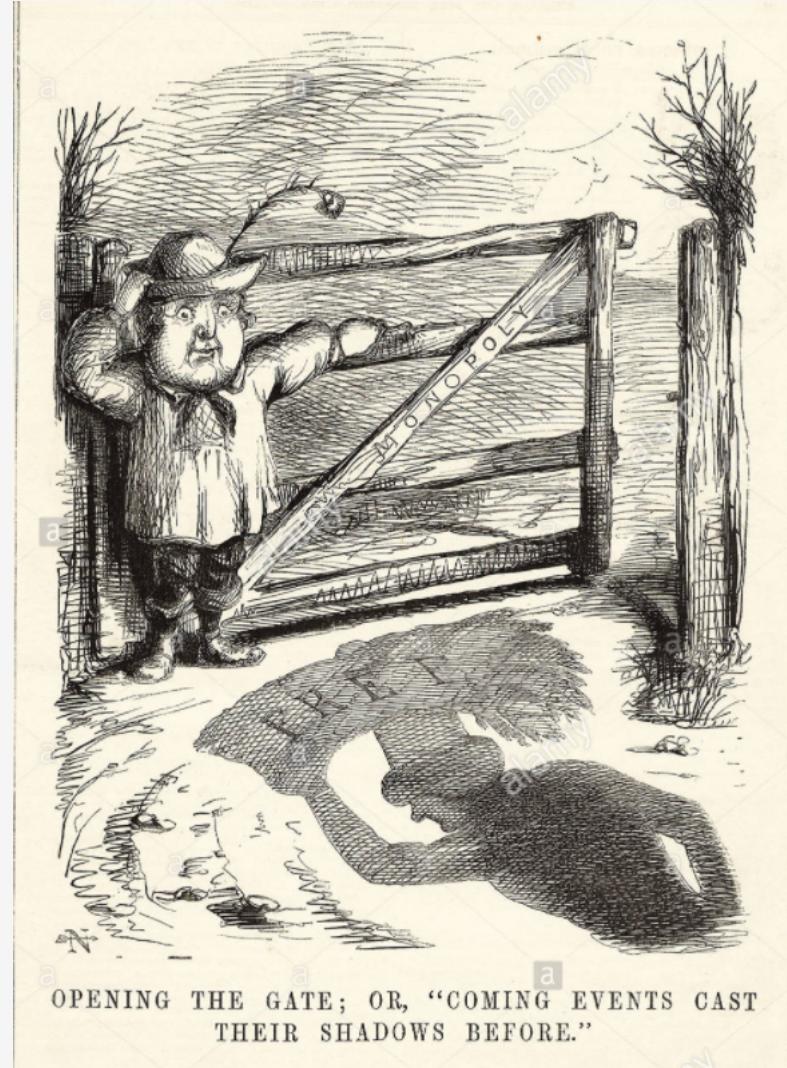
- Landlords argue: high tariffs will keep grain prices low
 - Would encourage greater investment in British agriculture, increasing supply which would ultimately lower prices
- Also argue that if corn prices allowed to fall, land would no longer be cultivated, leading to a greater shortage of corn than ever



The Corn Laws



- If Ricardo and his allies could show:
 1. increased investment in agriculture had *diminishing returns*, and
 2. price of corn was partially determined by quantity of labor used in production
- Then they could show that high price of corn was caused by extension of cultivation and increase of labor needed to produce more marginal land
 - Inefficient use of labor, better for England to import corn from abroad!



Opposition to the Corn Laws



- Ricardo, Malthus, West, and Torrens all formulated a concept of **diminishing returns** in agriculture, and a theory of differential rent
- Reductio ad absurdum: if diminishing returns were not true, could grow the entire world's food supply in a flowerpot!



Opposition to the Corn Laws



- Edward West's pamphlet opposing the Corn Laws:

“each equal additional quantity of work bestowed on agriculture, yields an actually diminished return, and of course if each equal additional quantity of work yields an actually diminished return, the whole of the work bestowed on agriculture in the progress of improvement, yields an actually diminished proportionate return.”

- Note **diminishing returns** and the (beginnings of a) **distinction between average and marginal product**

West, Edward, 1815, *Essay on the Application of Capital to Land, with Observations Shewing the Impolicy of Any Great Restriction of the Importation of Corn*

Opposition to the Corn Laws



David Ricardo

1772-1823

- Extend Adam Smith's primitive idea of **labor as measuring the price** (beaver & deer example)

“The exchangeable value of all commodities, rises as the difficulties of their production increase. If then new difficulties occur in the production of corn, from more labour being necessary, whilst no more labour is required to produce gold, silver, cloth, linen, etc. the exchangeable value of corn will necessarily rise, as compared with those things. On the contrary, facilities in the production of corn, or of any other commodity of whatever kind, which shall afford the same produce with less labour, will lower its exchangeable value.”

- Continuing to extend cultivation will *lower* value due to diminishing returns!
 - Prohibiting importations is like prohibiting superior land at home!

Ricardo, David, 1815, *Essay on the Influence of a Low Price of Corn on the Profits of Stock*

Apology for The Corn Laws



Thomas Robert Malthus
1766-1834

- Malthus writes a pamphlet *Inquiry into the Nature and Progress of Rent* (1815)
- Argues that land rent arises from three causes:
 1. Land produces a surplus over the expenses of cultivation
 2. This surplus always creates new demand (and boosts population)
 3. The most fertile land is scarce
- Rent is a useful social institution

Ricardo vs. Malthus: Round 1



David Ricardo

1772-1823

- Ricardo strongly disagrees with Malthus
- Only Malthus' reason #3 makes any sense to Ricardo, rent is only paid because of the “[fickleness] of nature in providing fertile land”
 - rent is merely value transferred away from capitalists to landlords

“If all land had the same properties, if it were unlimited in quantity, and uniform in quality, no charge could be made for its use, unless where it possessed peculiar advantages of situation...It is only, then, because land is not unlimited in quantity and uniform in quality...that rent is ever paid for the use of it.”

Ricardo, David, 1815, *Essay on the Influence of a Low Price of Corn on the Profits of Stock*

Ricardo vs. Malthus: Round 1



David Ricardo

1772-1823

- Ricardo believes landlords' interests are in fact always *opposed to the interests of society*

“If the interests of the landlord be of sufficient consequence, to determine us not to avail ourselves of all the benefits which would follow from importing corn at a cheap price, they should also influence us in rejecting all improvements in agriculture, and in the implements of husbandry; for it is as certain that corn is rendered cheap, rents are lowered, and the ability of the landlord to pay taxes, is for a time, at least, as much impaired by such improvements, as by the importation of corn. To be consistent then, let us by the same act arrest improvement, and prohibit importation.”

- 🤦 last sentence is satire!

Ricardo, David, 1815, *Essay on the Influence of a Low Price of Corn on the Profits of Stock*

Ricardian Comparative Advantage



- Sought to explain an apparent paradox: countries often produce & export goods they don't seem to be “good at producing!”
- Answer: citizens of the importing country are *even better* at producing *something else* (in relative terms)
 - Worthwhile for the exporting country to buy this from abroad (with exports as payment)

David Ricardo

Ricardo, David, 1817, *Principles of Political Economy and Taxation*

1772-1823

Ricardian Comparative Advantage



David Ricardo

1772-1823

“To produce the wine in Portugal, might require only the labour of 80 men for one year, and to produce the cloth in the same country, might require the labour of 90 men for the same time. It would therefore be advantageous for her to export wine in exchange for cloth. This exchange might even take place, notwithstanding that the commodity imported by Portugal could be produced there with less labour than in England. Though she could make the cloth with the labour of 90 men, she would import it from a country where it required the labour of 100 men to produce it, because it would be advantageous to her rather to employ her capital in the production of wine, for which she would obtain more cloth from England, than she could produce by diverting a portion of her capital from the cultivation of vines to the manufacture of cloth.”

Ricardian Comparative Advantage



David Ricardo

1772-1823

Maximum Possible Production

	Wine	Cloth
England	5	10
Portugal	4	2

Opportunity Costs

	1 Wine	1 Cloth
England	2c	0.5w
Portugal	0.5c	2w

Ricardian Comparative Advantage

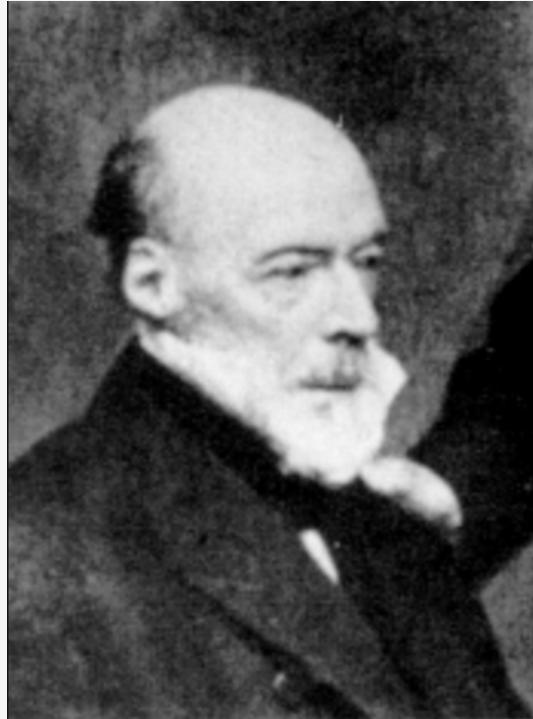


David Ricardo

1772-1823

- Even in the presence of **absolute advantage** (one country is more efficient at producing *all* goods), still better for them to specialize
 - A high opportunity cost of producing everything
- Pay others to perform a task, or purchase a good, and specialize in producing goods where you have the **lowest opportunity cost**
- This is the principle of **comparative advantage**
- Ricardo called this the principle of “comparative cost”; Torrens calls it “comparative advantage” (and to be fair, Torrens wrote about it first)
 - in favor of free trade (import cheaper corn!)
 - preventing imports is like preventing superior production at home!

Torrens on Comparative Advantage



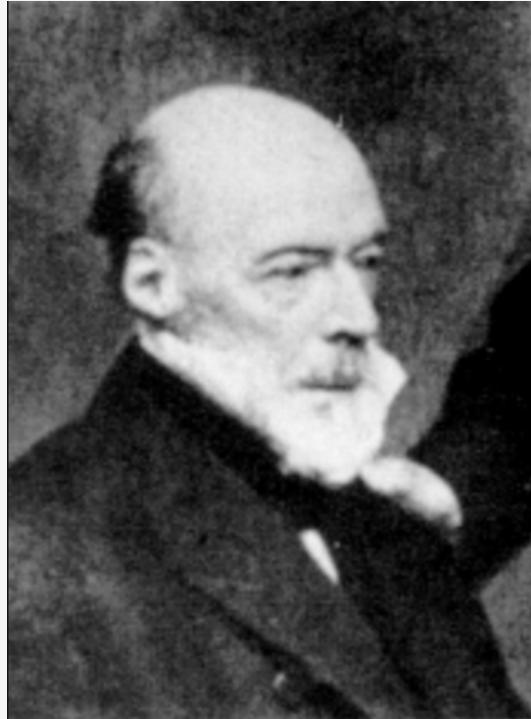
Col. Robert Torrens

1780–1864

“Let us suppose, that there are, in England, unclaimed districts, from which corn might be raised at as small an expense of labour and capital, as from the fertile plains of Poland. This being the case, and all other things the same, the person who should cultivate our unclaimed districts, could afford to sell his produce at as cheap a rate as the cultivator of Poland; and it seems natural to conclude, that if industry were left to take its most profitable direction, capital would be employed in raising corn at home, rather than bringing it in from Poland at an equal prime cost, and at much greater expense of carriage.”

Torrens, Robert, 1815, *Essay on the External Corn Trade*

Torreens on Comparative Advantage



Col. Robert Torreens

1780–1864

“But this conclusion, however obvious and natural it may, at first sight, appear, might, on closer examination, be found entirely erroneous. If England should have acquired such a degree of skills in manufacturews, that, with any given portion of her capital, she could prepare a quantity of cloth, for which the Polish cultivator would give a greater quantity of corn, than she [England] could, with the same portion of capital, raise from her own soil, then, tracts of her territory, though they should be equal, nay, even though they should be superior, to the lands in Poland, will be neglected; and a part of her supply of corn will be imported from that country.”

Torreens, Robert, 1815, *Essay on the External Corn Trade*

James Mill on Comparative Advantage



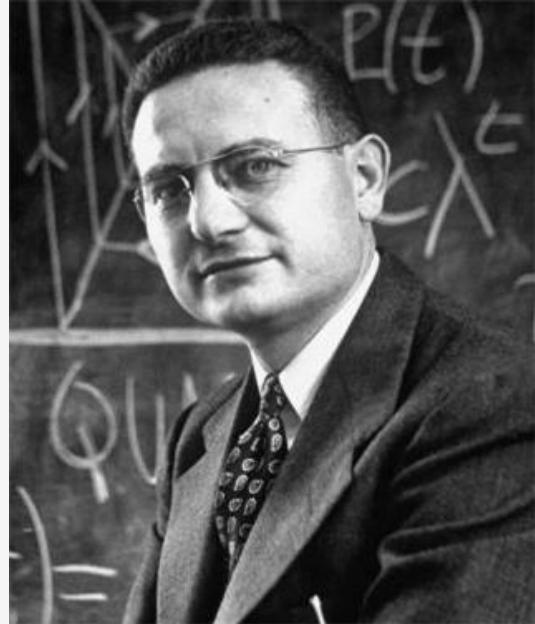
“When a country can either import a commodity or produce it at home, it compares the cost of producing at home with the cost of procuring from abroad; if the latter cost is less than the first, it imports. The cost at which a country can import from abroad depends, not upon the cost at which the foreign country produces the commodity, but upon what the commodity costs which it sends in exchange, compared with the cost which it must be to produce the commodity in question, if it did not import it.”

Mill, James, 1821, *Elements of Political Economy*

James Mill

1773-1836

Aside: Comparative Advantage



Paul Samuelson

1915-2009

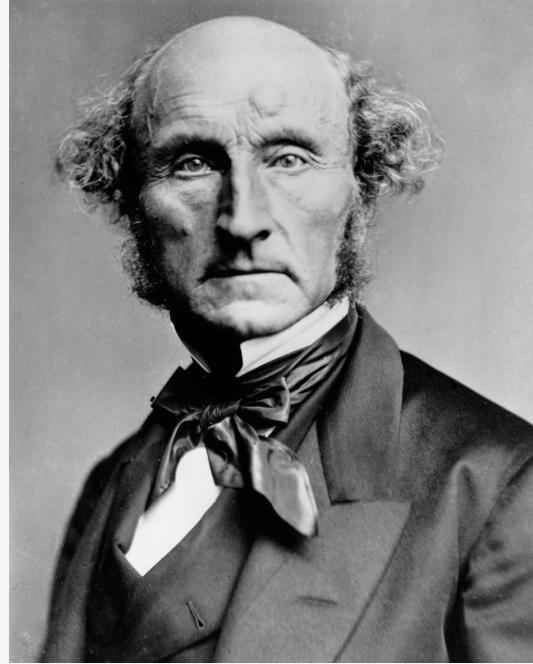
Economics Nobel 1970

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- - #
 - Sanislaw Ulam once challenged Samuelson to “*name me one proposition in all of social sciences which is both true and non-trivial*”
 - Samuelson’s answer: comparative advantage

“That it is logically true need not be argued before a mathematician; that is is not trivial is attested by the thousands of important and intelligent men who have never been able to grasp the doctrine for themselves or to believe it after it was explained to them,”

The Corn Laws

The Corn Laws Controversy...After Ricardo



John Stuart Mill

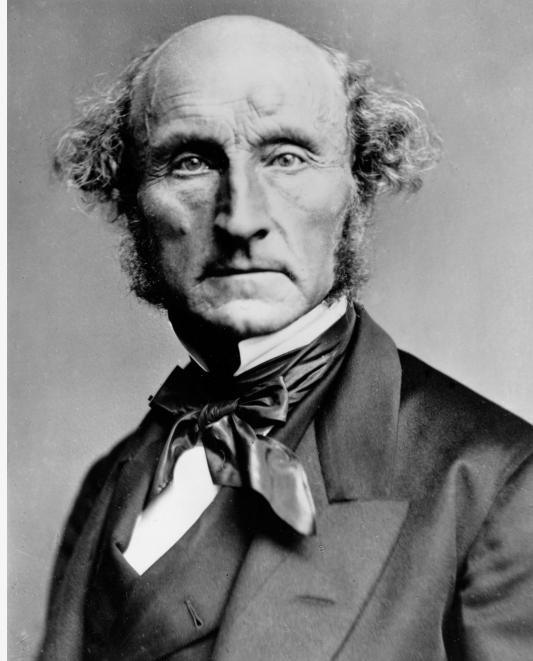
1806-1873

“[I]f there were nothing in the whole process but a transfer; if whatever is lost by the consumer and by the capitalist were gains by the landlord; there might be robbery, but there would not be waste, there might be a worse distribution of the national wealth, but there would be no positive diminution of this aggregate wealth.”

“[But the Corn Laws] occasion in all cases an absolute loss, greatly exceeding the gain which can be derived from them by the receivers of rent; and for every pound which finds its way in the pockets of the landlords...the community is robbed of several.”

Mill, John Stuart, 1825, *The Corn Laws*

The Corn Laws Controversy...After Ricardo



“It would be better, however, to have a repeal of the Corn Laws, even clogged by a compensation [to landlords], than to not [repeal] at all; and if [repeal with compensation to landlords] were our only alternative, no one could complain of a chance, by which, though an enormous amount of evil would be prevented, no one would lose.”

Mill, John Stuart, 1825, *The Corn Laws*

John Stuart Mill

1806-1873

The Corn Laws Controversy...After Ricardo



- Corn Laws remained a huge political issue in England in 1830s-1840s

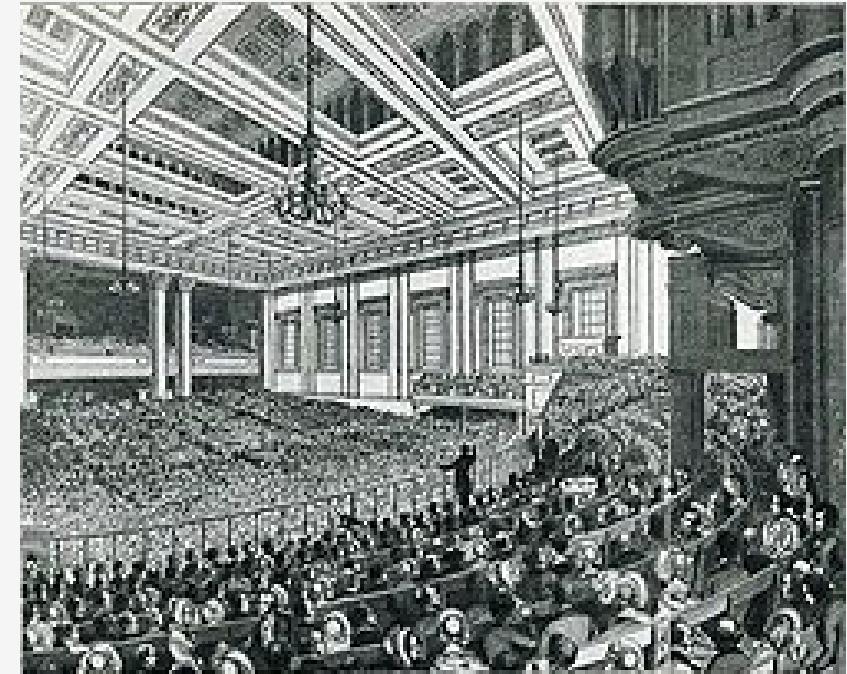
- Industrialization, rising population, but rising price of bread

- Great Famine in Ireland 1845-1849

- Radical liberals Richard Cobden & John Bright create the *Anti-Corn Law League* 1838

- large rallies, major riots in London
- Classical economists wrote vehemently against Corn Laws

A Meeting of the Anti-Corn Law League



The Corn Laws Controversy...After Ricardo



Richard Cobden

"[Repealing the Corn laws would solve four problems.] First, it would guarantee the prosperity of the manufacturer by affording him outlets for his products. Second, it would relieve the Condition of England question by cheapening the price of food and ensuring more regular employment. Third, it would make English agriculture more efficient by stimulating demand for its products in urban and industrial areas. Fourth, it would introduce through mutually advantageous international trade a new era of international fellowship and peace. The only barrier to these four beneficent solutions was the ignorant self-interest of the landlords, the "bread-taxing oligarchy, unprincipled, unfeeling, rapacious and plundering."

The Corn Laws Controversy...After Ricardo



Robert Peel

1788-1850

- Tory Robert Peel becomes P.M. 1841-1846
- Repeals the Corn Laws in 1846
 - ruins his political career
 - splits the Tory Party into the Whigs; radicals leave and become the Liberal Party
- Price of corn plummets
 - working classes can now afford food, more shift from farms to factories
 - last vestiges of feudal privileges eroding

The Corn Laws Controversy...After Ricardo



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The Ricardian System

Ricardo on the Scope of Economics



David Ricardo

1772-1823

- Focus is on the **long-run** & on the **income distribution** across economic groups (land, labor, capital)

“To determine the laws which regulate this distribution [of income], is the principal problem in Political Economy: much as the science has been improved by the writings of Turgot, Stuart, Smith, Say, Sismondi, and others, they afford very little satisfactory information respecting the natural course of rent, profit, and wages.”

Ricardo, David, 1817, *On the Principles of Political Economy and Taxation*

The Ricardian Vice



David Ricardo

1772-1823

- Ricardo wrote very abstractly, making heroic assumptions, to construct a theoretical model isolated from complex reality, from which he could deduce policy implications
 - deductive reasoning but not mathematical (no equations, all verbal!)
- “**The Ricardian vice**”: economists’ predilections towards abstract theory above all else
- Very different from Smith (and later, Mill and Marshall)

Ricardo, David, 1817, *On the Principles of Political Economy and Taxation*

Fundamentals of the Ricardian System



- **Diminishing returns:** holding all other factors of production constant, increasing intensive use of one factor will increase output at a decreasing rate
 - focused primarily on diminishing returns to *agriculture*
 - seem to have assumed *increasing returns* to *manufacturing* (less clear on this, but a good Smithian argument: extending the market, extending division of labor, increasing productivity)

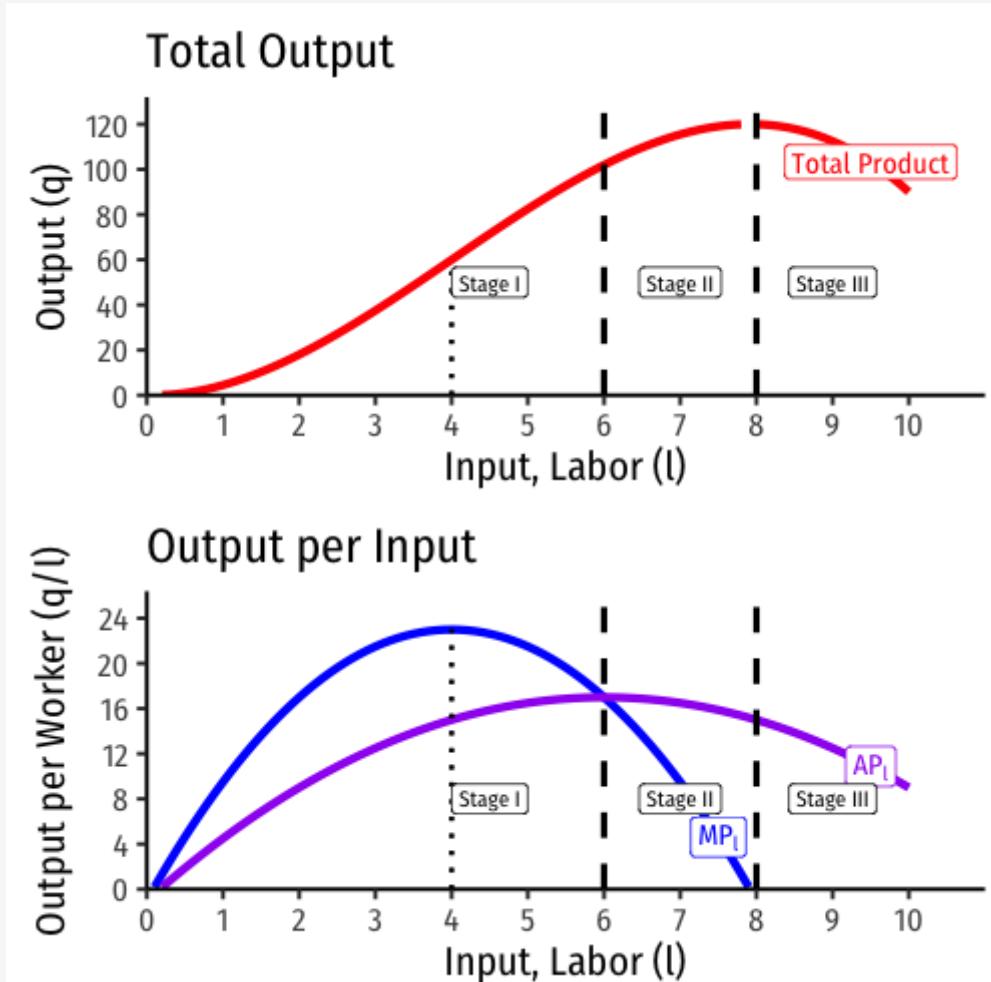
David Ricardo

1772-1823

Diminishing Returns



- Applying Ricardian logic *beyond* agriculture, we arrive at the modern **law of diminishing returns**
 - “**Law of variable proportions**” or “**variation of returns**”
- For any one variable factor (holding all others constant), increasing use will eventually yield a diminishing marginal product
 - use labor as example



Diminishing Returns

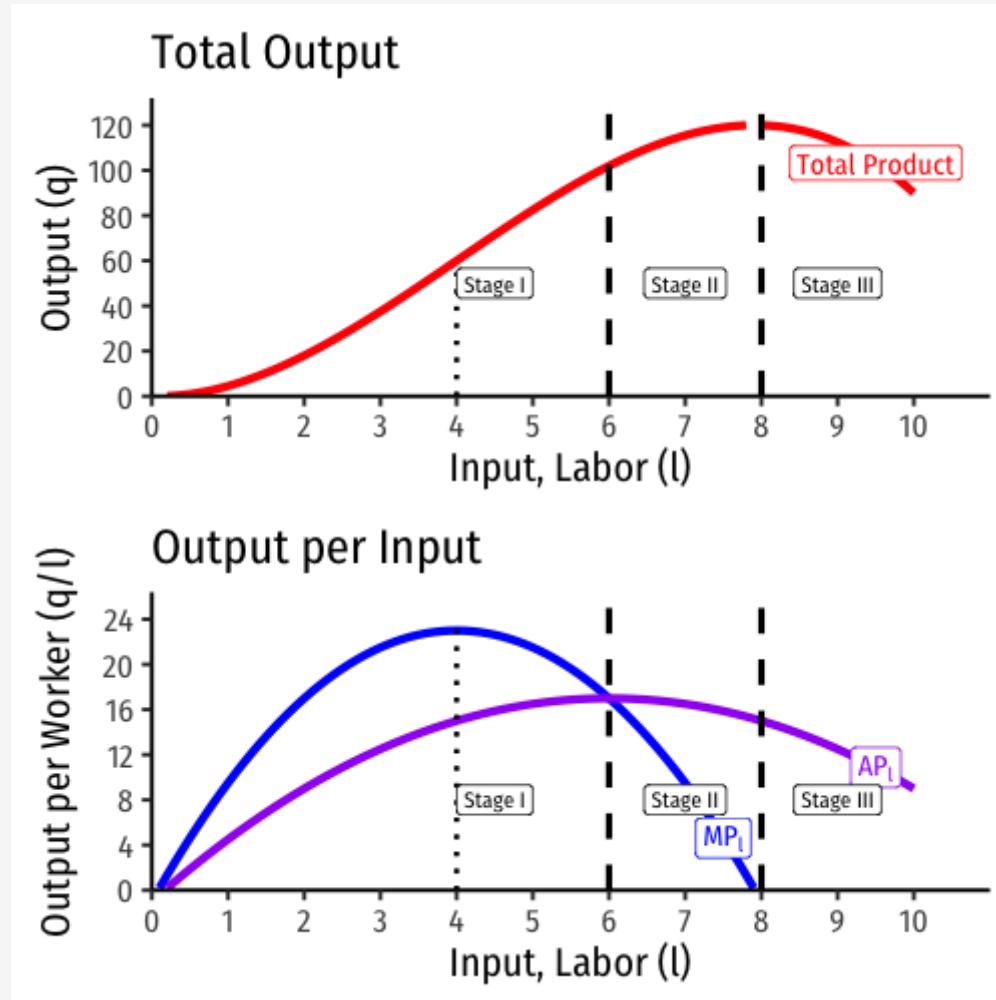


- **Marginal product of labor (MP_l)**: additional output produced by adding one more unit of labor (holding k constant)

$$MP_l = \frac{\Delta q}{\Delta l}$$

- MP_l is slope of TP at each value of l
- **Average product of labor (AP_l)**: additional output produced by adding one more unit of labor (holding k constant)

$$AP_l = \frac{q}{l}$$



Fundamentals of the Ricardian System



- **Labor theory of value:** a good enough approximation for most purposes
 - Tried to extend Smith's beaver-deer example
 - Recognized a pure labor theory of value has problems (Smith's different levels of "ingenuity" and "disagreeableness")
 - Stigler: Ricardo had "a 93% labor theory of value"

Stigler, George, 1958, ["Ricardo and the 93% Labor Theory of Value,"](#) *American Economic Review* 48(3): 357-367

David Ricardo

1772-1823

Fundamentals of the Ricardian System



- Ricardo clearly recognized this does not work for:
 - goods with fixed supply (Rembrandt paintings, etc.)
 - paper money
 - monopolized products
 - international trade (if capital and labor are immobile across countries)

David Ricardo

1772-1823



Ricardian Rent Theory

Ricardian Production Theory



David Ricardo

1772-1823

- “**Ricardian Corn model**”: models the economy as if it were a single firm, producing corn as the output
- Assumptions:
 - Labor cost theory of value
 - Money is neutral
 - Diminishing returns in agriculture
 - Constant or increasing returns in manufacturing
 - Fixed coefficients in production

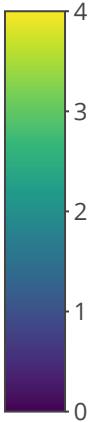
Ricardian Production Theory



- Assumption of fixed coefficients in production

$$q = \min(l, k)$$

- a Leontief production function
- i.e. perfect complements
- Labor and capital must be combined in a fixed proportion, a constant $\frac{L}{K}$ ratio
- Ex: 1 worker and 1 shovel can produce 1 bushel of corn
- Ricardo will talk about adding constant “**doses**” of **labor & capital** (combined)



Ricardian Production Theory



- **Intensive Margin:** adding an additional dose of labor & capital to an existing site
 - experiences diminishing returns to doses of L+K
- **Extensive Margin:** bringing new sites of land into cultivation
 - diminishing returns to land, start at superior site, extend into inferior sites

Total Product of Land

	K+L Dose	Extensive Margin👉		
		Plot A	Plot B	Plot C
Intensive Margin👉	1	120	110	100
	2	230	210	
	3	330		

Marginal Product of Land

	K+L Dose	Extensive Margin👉		
		Plot A	Plot B	Plot C
Intensive Margin👉	1	120	110	100
	2	110	100	
	3	100		

Ricardian Production Theory



David Ricardo
1772-1823

- “Rent” to landowner in everyday language is not precise!
 - Contains both elements of “profits” and “rents” (payment for land improvements)

“If, then, good land existed in quantity much more abundant than the production of food for an increasing population required, or if capital could be indefinitely employed without a diminished return on the old land, there could be no rise of rent; for rent invariably proceeds from the employment of an additional quantity of labour with a proportionally less return.”

Ricardian Production Theory



- Example adapted from Blaug (1996)
- Let price of corn be \$1/bushel
 - so marginal physical product = marginal revenue product (just add a \$ in front)
- Let price of one homogenous unit of K+L (“man-with-shovel”) be \$100
- Assume each farmer (A, B, C) will apply a K+L dose so long as $MR > MC$

Total Product of Land

		Extensive Margin 🤲			
		K+L Dose	Plot A	Plot B	Plot C
Intensive Margin 🤲	1	120	110	100	
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Marginal Product of Land

		Extensive Margin 🤲			
		K+L Dose	Plot A	Plot B	Plot C
Intensive Margin 🤲	1	120	110	100	
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	3	100			

Ricardian Production Theory



- Farmer on C will apply only 1 K+L dose (\$100) to produce \$100 of output
- Competition will equalize marginal (value) product of K+L at all plots of land
 - Plot C is the **extensive margin** (worse land where $MR = MC$)
 - If it pays to apply K+L to C, it should also pay to apply them more **intensively** to A and B
 - Continues until **extensive margin** equals with **intensive margin**
 - Last increment of K+L on superior land (A,B) also $MR = MC$

Total Product of Land

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	K+L Dose	Plot A	Plot B	Plot C
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Marginal Product of Land

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Ricardian Production Theory



- C makes \$100 using 1 K+L (costs \$100):
profit \$0
- B makes \$210 using 2 K+L (costs \$200):
profit \$10
- A makes \$330 using 3 K+L (costs \$300):
profit \$30
- **Rent**: payment to plot owners that **equalizes profits** across land of different fertilities

Total Product of Land

	K+L Dose	Extensive Margin👉		
		Plot A	Plot B	Plot C
Intensive Margin👉	1	120	110	100
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Marginal Product of Land

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Ricardian Production Theory



- Competitive markets \implies profits to A, B, C will eventually equalize
 - Farmers working B or C willing to pay owner of A to produce on A instead of B or C!
- Rent to A: \$30
- Rent to B: \$10
- Rent to C: \$0

Total Product of Land

		Extensive Margin 🤲			
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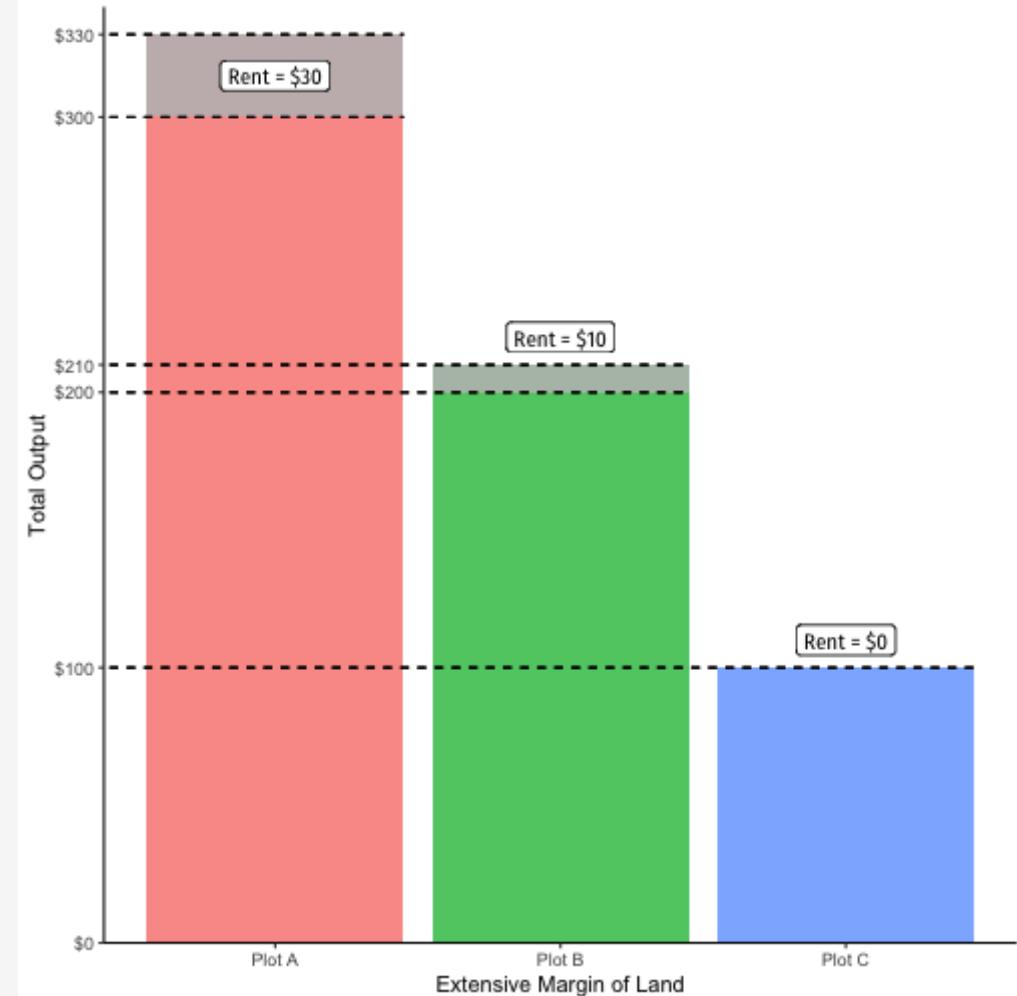
Marginal Product of Land

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	3	100			

Ricardian Rents



- Rent comes from *differential productivities* of land
- Rent that equalizes profits of A, B, & C:
 - C: \$0 (“rentless margin”)
 - B: \$10
 - A: \$30
- Rent on any plot = differences between marginal product of dose of L&K at intensive margin and the marginal product of earlier, inframarginal doses



Ricardian Rent Theory



David Ricardo
1772-1823

- In Ricardian theory, the **fixed factor of production** (land) earns all inframarginal residuals, i.e. gets paid rent
 - variable factors are paid their marginal products
- Ricardo assumed **land is fixed, and has no opportunity cost**
 - Assumes “land” in general, rather than modern assumption: *land for specific uses* (which would have opportunity costs)!
 - That is why the extensive margin of land earns *no rent* (has no alternative use)

Ricardian Rent Theory



David Ricardo

1772-1823

- When people use the term “rent” in ordinary language, they mean “contract rent” (what you pay your landlord)
 - this constitutes multiple things: profit, payment for their improvements to land, and pure (Ricardian) rents
- **Ricardian rents** or **Scarcity rents**: Ricardo’s careful definition of rent “the use of the original and indestructible powers of the soil”
 - i.e. permission for using something that already exists (and the landlord did not *produce*)!
 - only exists because of a fixed supply (of land)
- Can apply **Ricardian Rents** to *anything* in scarce supply:
 - talent, intellectual property, monopoly!

Ricardian Rent Theory



- Because land is fixed in supply, **rent is price-determined, not price-determining!**
 - Rents change to equalize all profits
 - “Rent does not enter into price”

“[The price of] corn is not high because a rent is paid, but a rent is paid because [the price of] corn is high.”

Ricardo, David, 1817, *On the Principles of Political Economy and Taxation*

David Ricardo

1772-1823

Ricardian Rent Theory & Tax Incidence Implications



- Since landlords contribute nothing to production, it would make no difference if landlords were thrown to the wolves
 - Expropriation of rents by the State would have no impact on production!
 - Opening for Georgism: A tax on land rent (Henry George)

David Ricardo

1772-1823