ECON 400: History of Economic Thought

Lecture Slides 4

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Sabancı University, Spring 2024

Classical Economists

- David Hume (1711–1776)
- Adam Smith (1723-1790)
- Jeremy Bentham (1748–1832)
- Thomas Robert Malthus (1766–1834)
- David Ricardo (1772–1823)
- Jean-Baptiste Say (1767–1832)
- John Stuart Mill (1806–1873)
- Karl Marx (1818-1883)

Classical School

David Ricardo (1772–1823)

- Started as a stockbroker, retired early, purchased land to become a parliament member, took an interest in economics in his 30s without formal training.
- Following up on Turgot, Smith, Malthus, systematized the theories of value and rent developed before him in a very modern sense.
- Going against landed aristocracy, argued that we should stop worrying about long-run growth (as there would be none) and start worrying about how the final income distribution will look like.
- Developed theories on international trade and taxation which are still very much in use.
- **Key aspect:** Given the extent of the subjects covered, Ricardo was the first one to develop abstract economic theories.

David Ricardo (1772–1823)

- Theory of value
- Market dynamics and stationary state
- Foreign trade
- Taxation
- Technological progress

Theory of value

- Began his exposition by crediting Adam Smith's labor-embodied theory of value:
  - *The value of a commodity, or the quantity of any other commodity for which it will exchange, depends on the relative quantity of labour which is necessary for its production, and not on the greater or less compensation which is paid for that labour.*

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- Realizing that this ignores the idea that production depends on three inputs: labor, capital, and land, adopted a "commodity production" approach:
  - Going back to deer-beaver example, let's assume that the production of each "good" requires a different weapon.
  - Then one can actually calculate the labor required to produce the corresponding weapon and sum up the hours embodied in the production of "final good".

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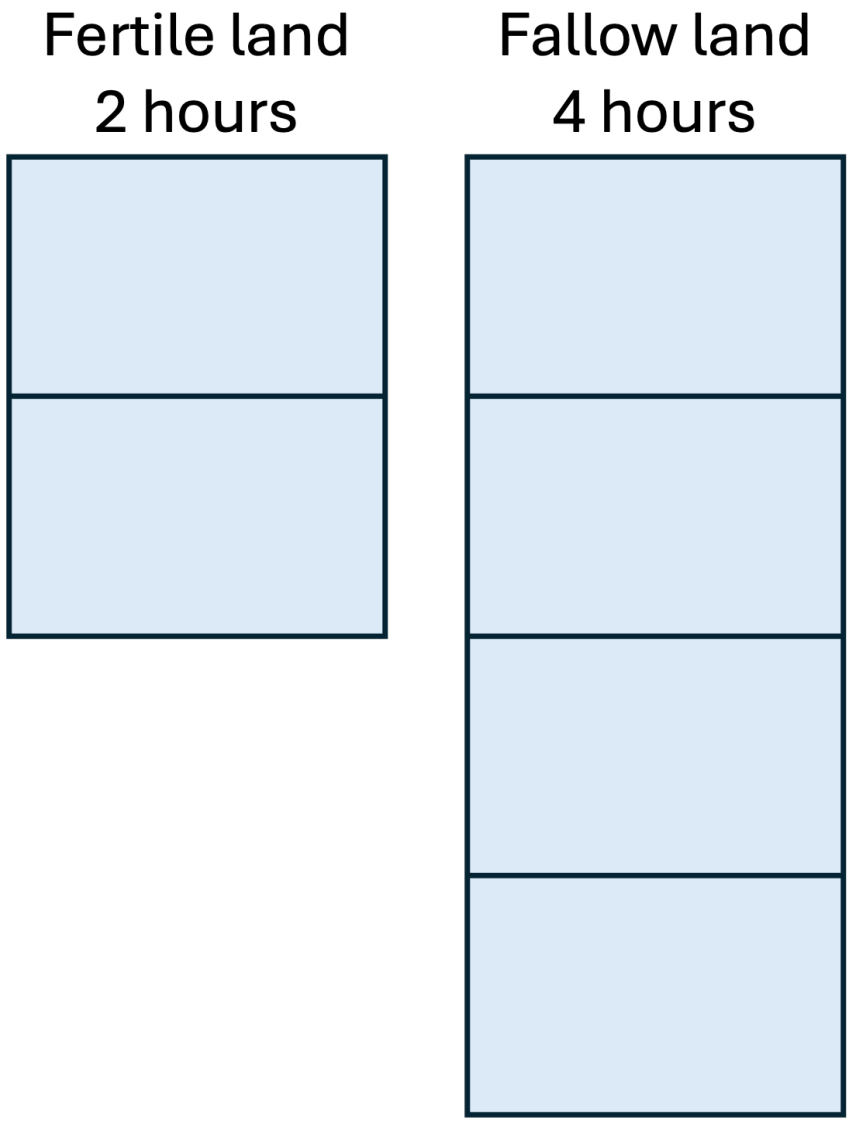
  - Then one can actually calculate the labor required to produce the corresponding weapon and sum up the hours embodied in the production of "final good".
- The remaining question: Can producers fully reflect their production costs in their prices?

Theory of value

Fertile versus fallow land



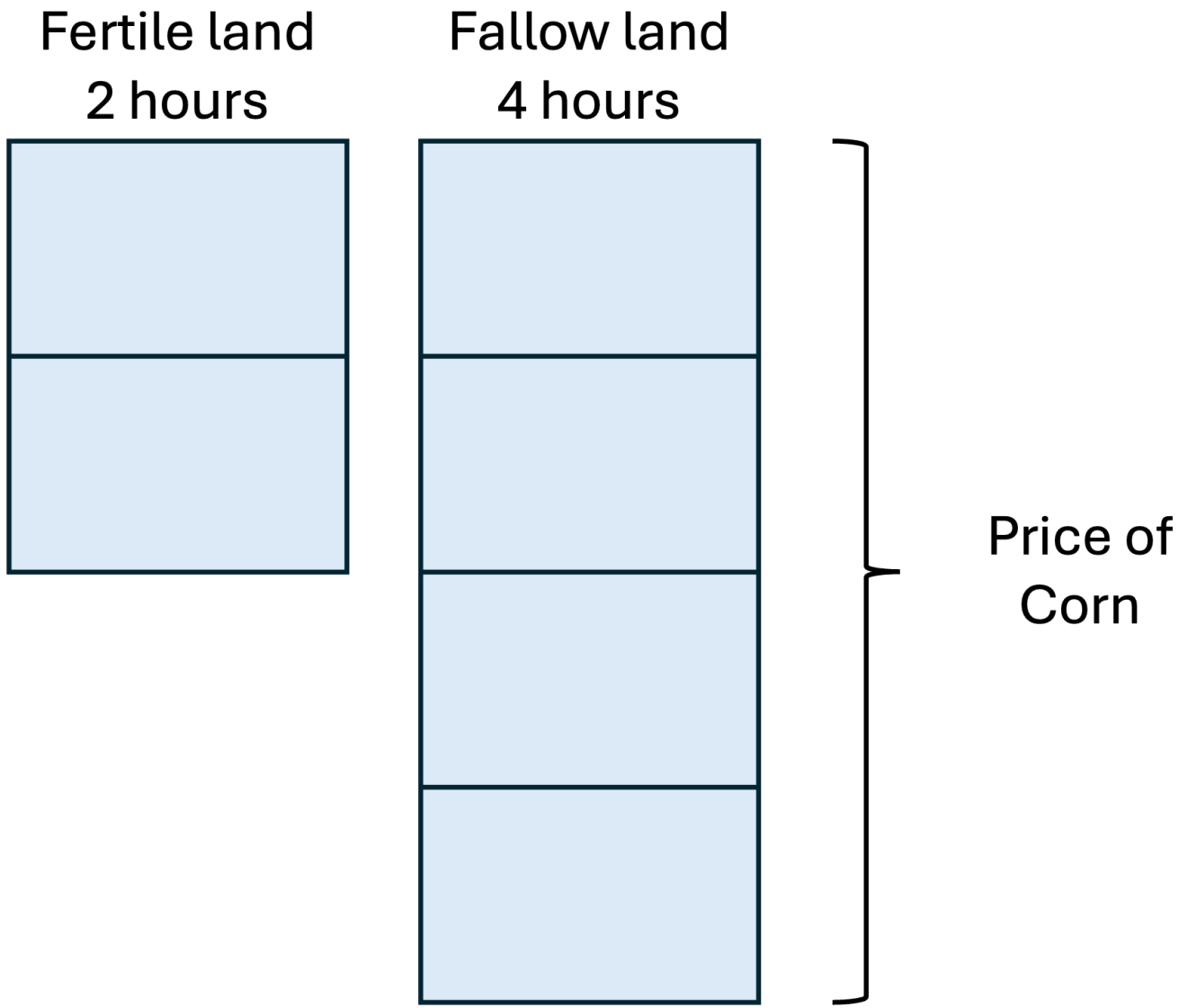
Theory of value

Fertile versus fallow land

- Producing the same amount of corn requires more labor and equipment time for fallow land than it does for fertile land.
- Ricardo's simple theory of value leads to an unfair conclusion that the corn produced by fertile land must sell for half the price of corn produced by fallow land.
- How should we think about this?

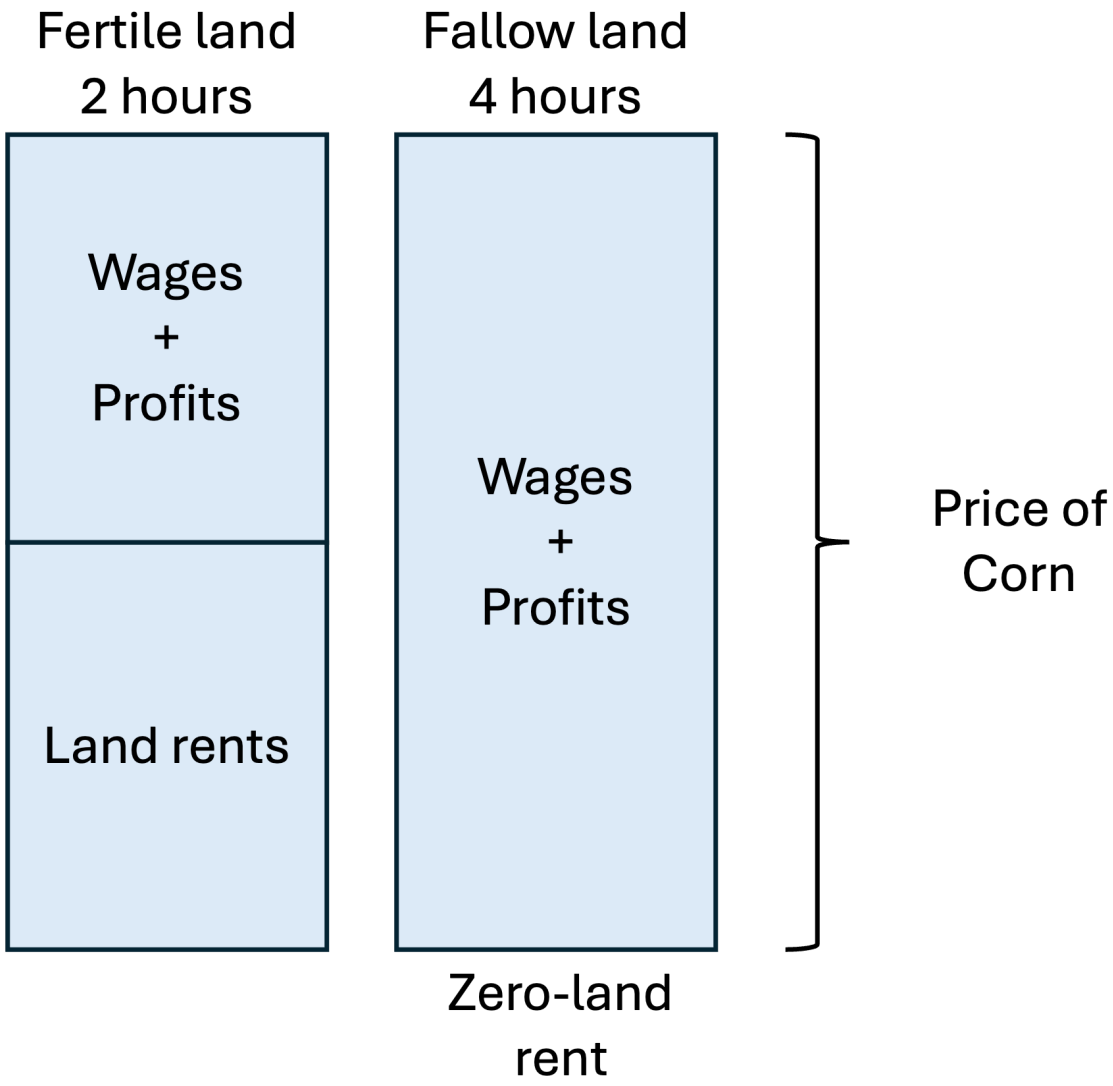
Theory of value

Price of corn would be determined by the labor required for the fallow (common) land.



Theory of value

Assuming there would be zero rent for the fallow rent, land rent is charged for the fertile land equalizing the price of corn across land plots.



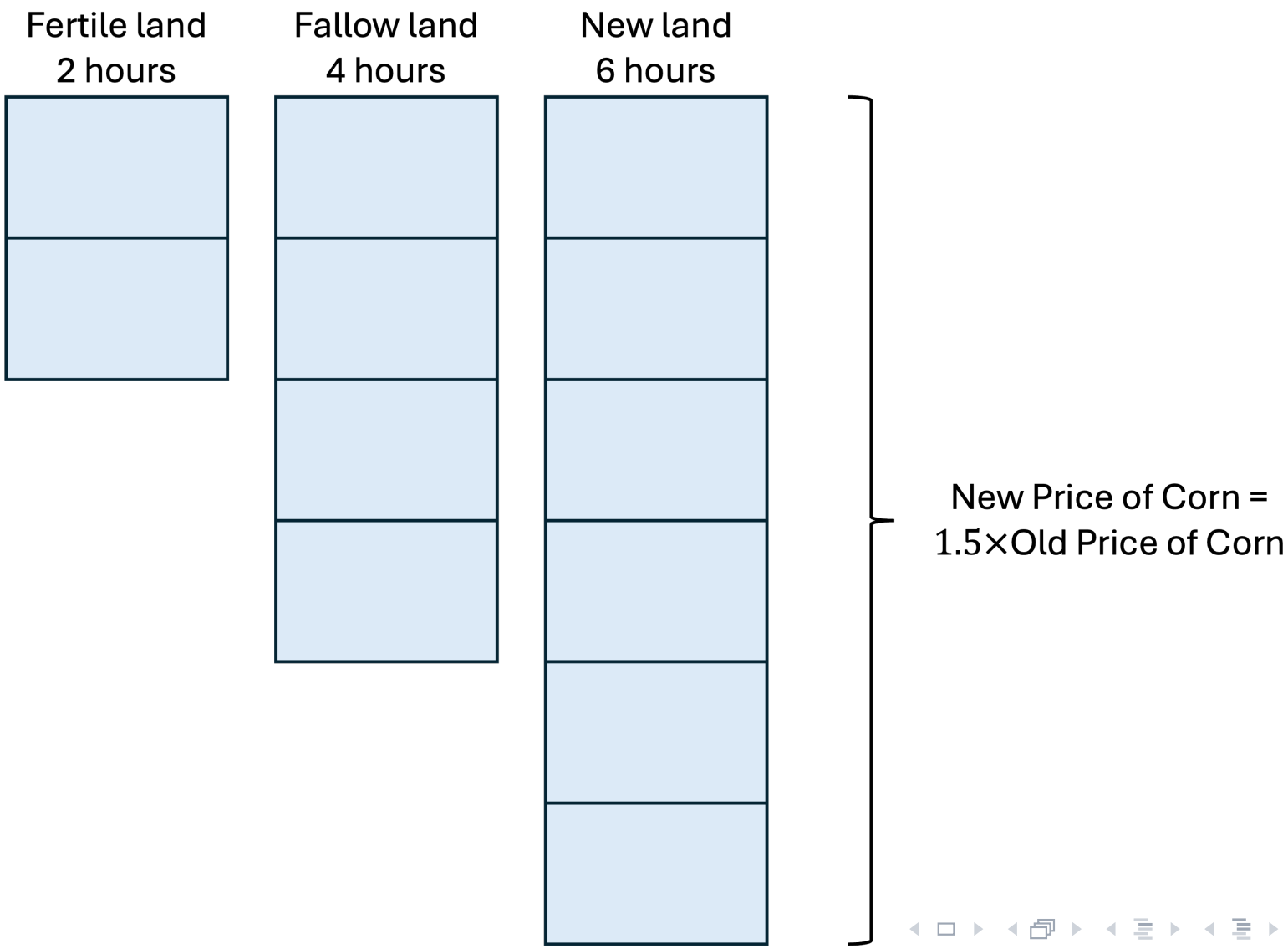
- Argued that land rent would materialize from the scarcity or the relative worth as the agricultural expansion and the rise of population continued.
- Provided a measure for the land rent: the amount that equalizes the hours required in a good's production.

Market dynamics and stationary state

- Argued that the demand for agricultural goods would increase as the population increased.
- More land (assumed to be even less fertile than the fallow land) would be added to cultivation to satisfy the increasing demand.
- Concluded, from his theory of value, the price of corn would increase based on the production on this new land.

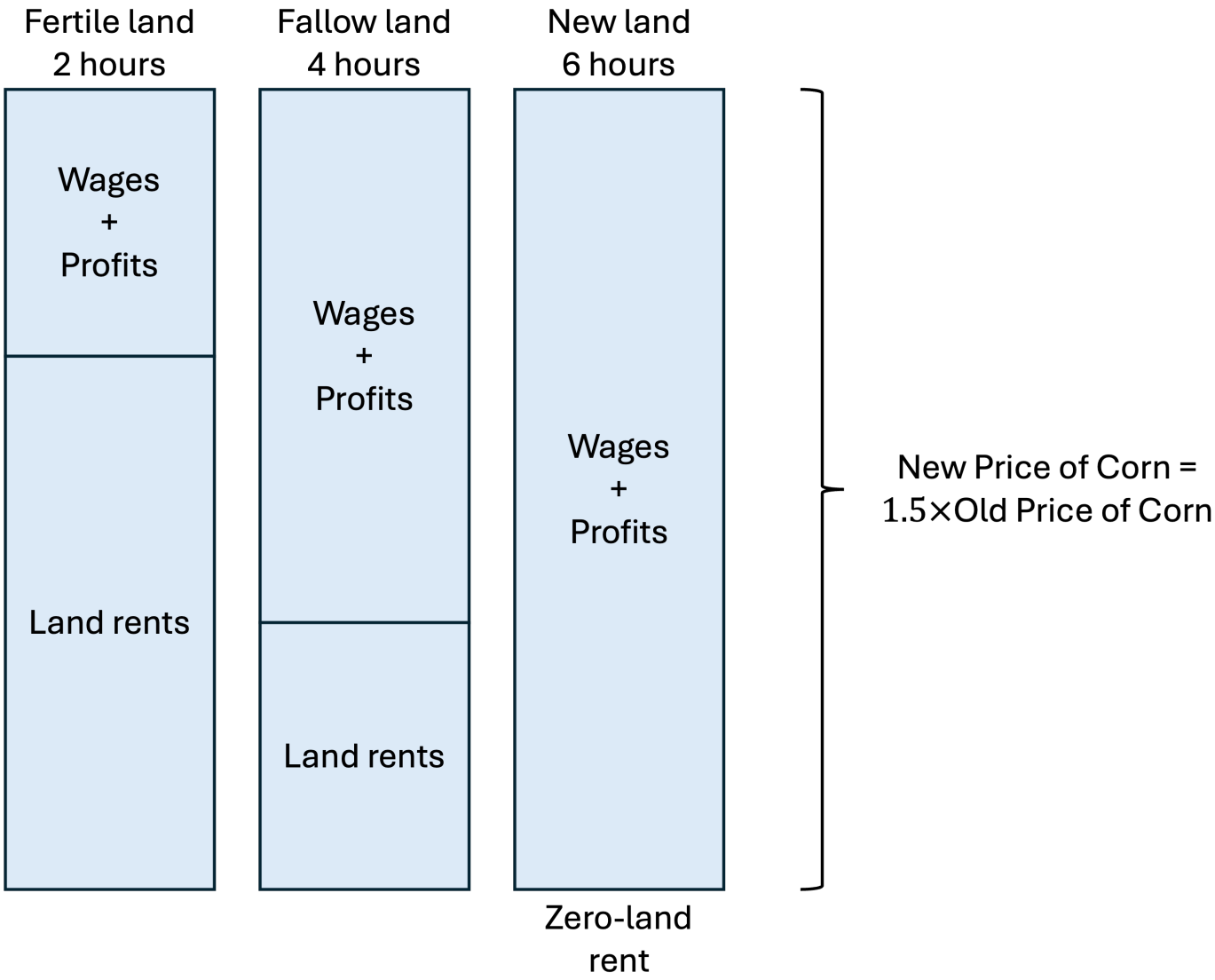
Market dynamics and stationary state

Adding the new land that requires more labor would increase the price of corn across the economy.



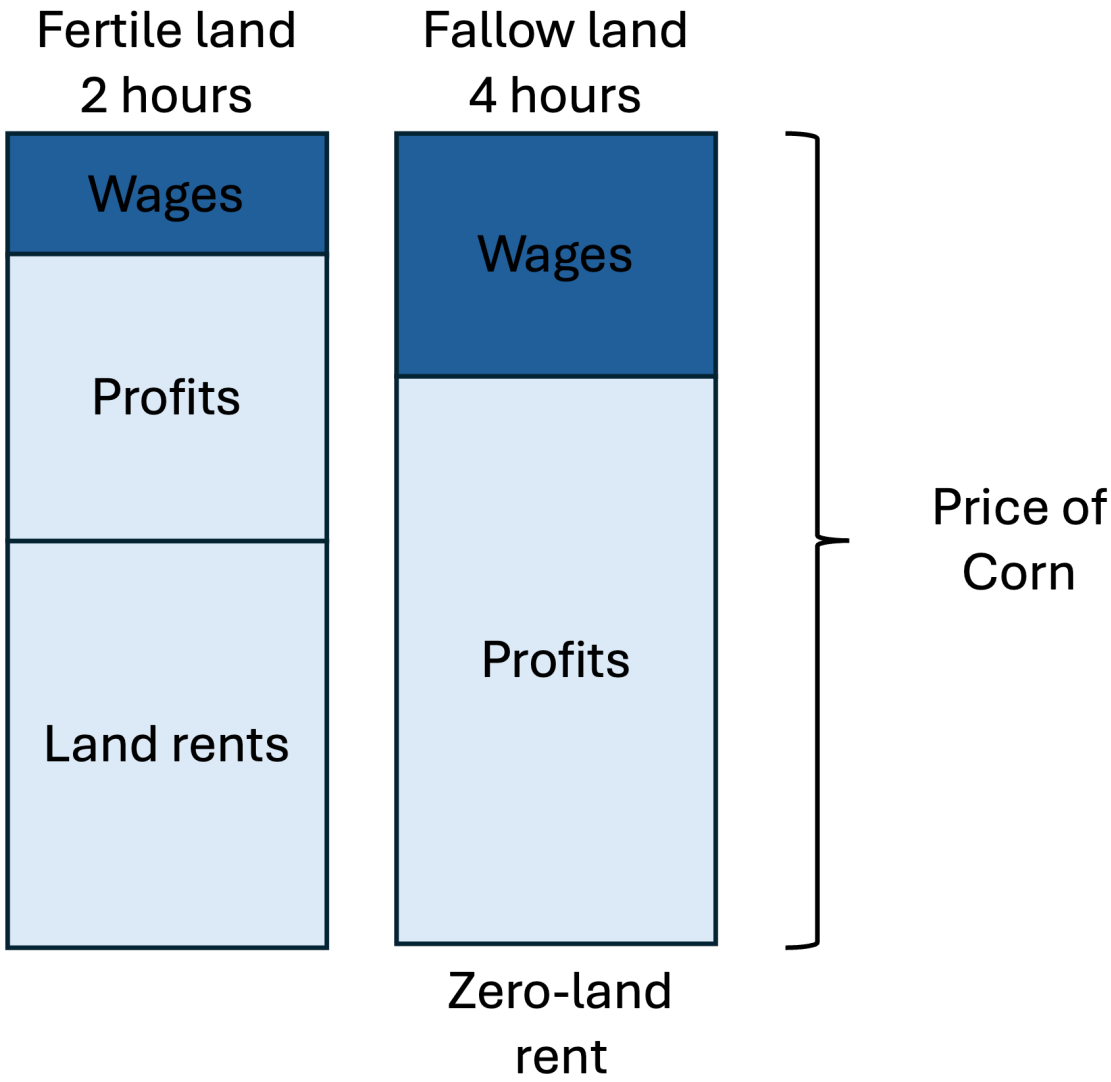
Market dynamics and stationary state

Increase in the price of corn would be absorbed by rising land rents.



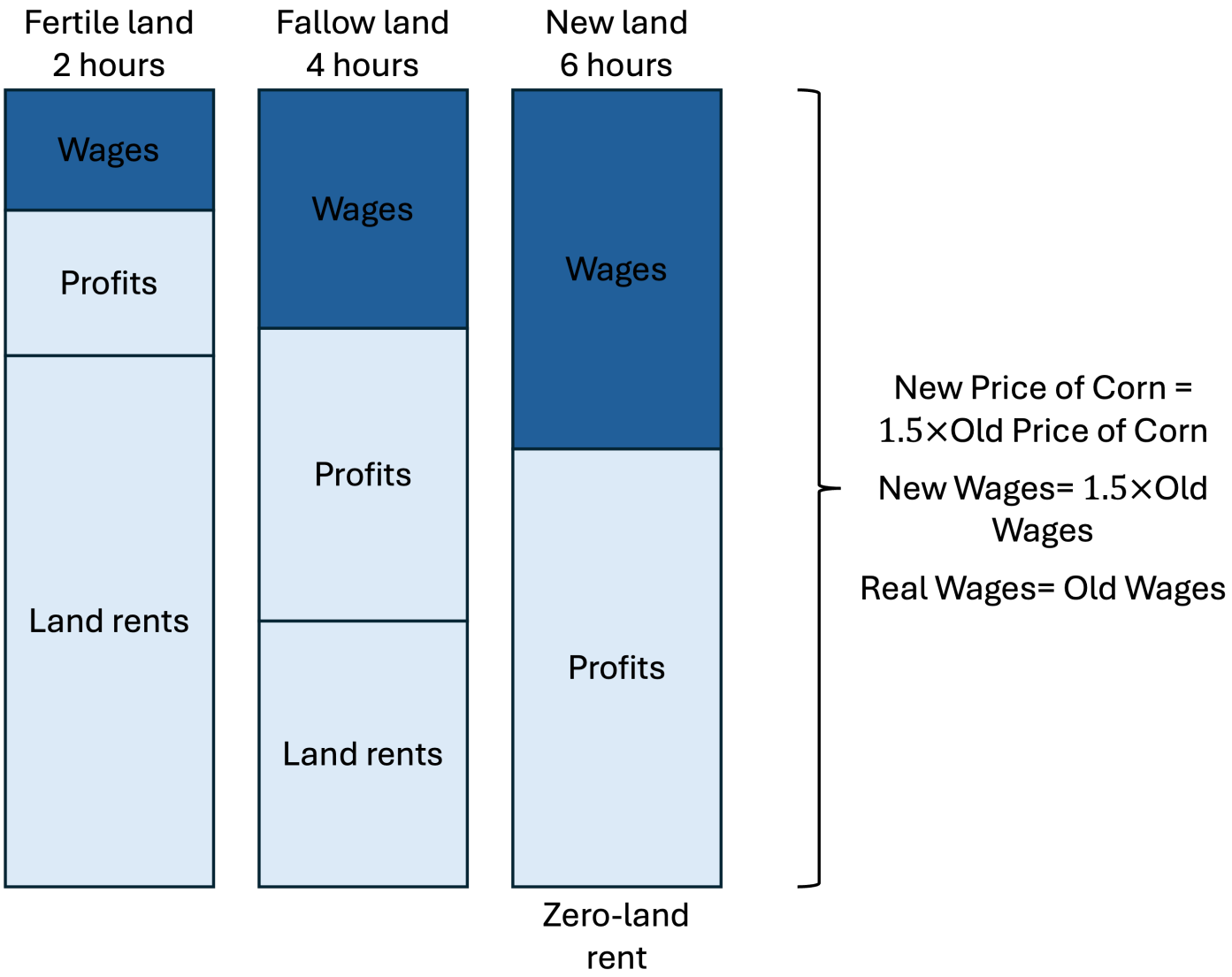
Market dynamics and stationary state

Based on subsistence wage hypothesis, wage-price ratio should be constant at $w/p = c$.



Market dynamics and stationary state

An increase in prices would increase the wages and push the rate of profits down.



Market dynamics and stationary state

Decreasing rate of profits and end of growth

- Argued that falling rates of profits would reach a level that capital accumulation in the economy stops.
- This is how the economic growth would end and the economy would enter a stationary state.
- Argued that there could be improvements in machinery and agriculture to delay the process:
  - *This tendency, this gravitation as it were of profits, is happily checked at repeated intervals by the improvements in machinery ... as well as by discoveries in the science of agriculture.*
- Another factor that could slow down the decline of profits would be the repeal of the Corn Laws. Argued that not importing cheaper food was putting an upward pressure on land rents.

Foreign trade

- Argued that even without direct inflow of wealth, foreign trade can improve life standards in a country:
  - *No extension of foreign trade will immediately increase the amount of value in a country, although it will very powerfully contribute to increase the mass of commodities, and therefore the sum of enjoyments.*
- Recognized that foreign trade would fuel specialization:
  - *by increasing the general mass of productions, it diffuses general benefit, and binds together by one common tie of interest and intercourse, the universal society of nations throughout the civilized world. It is this principle which determines that wine shall be made in France and Portugal, that corn shall be grown in America and Poland, and that hardware and other goods shall be manufactured in England.*
- Distinguishing between absolute and comparative advantage, his theory of trade strengthened the global trade irreversibly.

Hours required in production

	England	Portugal
Wine	120	80
Cloth	100	90

- Recognized that requiring less hours to produce both goods, Portugal had the absolute advantage.
- Adding that England had the comparative advantage at cloth and Portugal at wine, claimed that Portugal should produce only wine and England only cloth, and they should trade.
- Although it was not explicit, this follows from the opportunity cost differences at producing each good.
- Countries gain from trade as long as you trade at a price between two opportunity costs.

Hours required in production

	England	Portugal
Wine	120	80
Cloth	100	90

- For England, the opportunity cost of wine is 120/100=1.2 cloths.
- For Portugal, the opportunity cost of wine is 80/90=0.89 cloths.
- Therefore, they can trade at any goods ratio between 0.89 and 1.2 (let's take it as 1 wine per cloth).
- Let's assume England produces 100 cloths and Portugal produces 80 wines.
- What happens if England gives 20 cloths in exchange of 20 wines (1:1)?

	Cloths	Wines	Total	Total
England	80	20	80 cloths + 20*120/100 cloths	104 cloths
Portugal	20	60	20*90/80 wines + 60 wines	82.5 wines

- It is clear that both England and Portugal benefit from producing what they do best and trade the goods at a ratio between their opportunity costs.

Taxation

Ricardian equivalence

- Wrote on taxes pondering about tax burden:
  - *A tax on hats will raise the price of hats; a tax on shoes, the price of shoes; if this were not the case, the tax would be finally paid by the manufacturer; his profits would be reduced below the general level, and he would quit his trade.*
- Recognized that paying taxes today would be equivalent to the gov't taking a loan and raising taxes tomorrow to pay the debt.
- Regarding the war finance, argued that raising £20 million in taxes today would be the same as issuing a bond in the same amount at 5 percent interest.
  - Imagine you owe the gov't \$1,000 in taxes today. Instead of taxing you, if the gov't takes a loan of \$1,000 at the current interest rate (5%), then you will have to pay \$1,050 tomorrow in taxes to cover the gov't debt. So, you might have as well forgo \$1,000 by putting in the bank today at 5% interest.
- Concluded that method of financing gov't expenditures was irrelevant

Technological progress

Rise of machines

- Took on the technological progress when there was labor unrest where laborers were raiding textile mills upon the arrival of labor-saving machines.
- Contemporary view was that laborers should not worry as new technologies will cut the production costs and lower the good prices.
- Recognized that adopting new machinery would be beneficial to the labor class on one condition: Machines should not only lower the prices but also increase total income of capital owners so much that they would re-invest in the economy expanding work opportunities for the labor displaced by machines.

Classical School

Jean-Baptiste Say (1767–1832)

- A French political economy professor
- Developed a theory on aggregate supply and demand, which came to be known as "Say's Law".
- **Key aspect:** His "law of markets" was the dominant view in macroeconomics until the arrival of Keynes.

Classical School

Jean-Baptiste Say (1767–1832)

- Even though he himself made Smith popular in the continental Europe, argued that value had only to do with usefulness:
  - *The value that mankind attach to objects originates in the use it can make of them...It is universally true, that, when men attribute value to any thing, it is in consideration of its useful properties; what is good for nothing they set no price upon...And I will go on to say, that, to create objects which have any kind of utility, is to create wealth; for the utility of things is the ground-work of their value, and their value constitutes wealth...All that man can do is, to re-produce existing materials under another form, which may give them a utility they did not before possess, or merely enlarge one they may have before presented. So that, in fact, there is a creation, not of matter, but of utility; and this I call production of wealth.*
- These ideas will soon be picked up by Marginalist economists.

Classical School

Jean-Baptiste Say (1767–1832)

- Say's Law argued that the supply creates its own demand.
- Supply of a product is always an expression of demand for goods.
- A corn grower gets wine in exchange of his corn. So, the amount of corn he supplies should ideally be equal to his demand for wine and other goods.
- Realizing that supply and demand may not match perfectly argued there could only be three cases:
  1. The "equal" amounts of corn and wine supplied.
  2. Too many corns but not enough wine.
  3. Too few corns but too much wine.
- Is it possible to have too many corns and too much wine at the same time?

Classical School

Jean-Baptiste Say (1767–1832)

- Argued that there would never be excess demand and supply at the same time.
  - This argument will be central to "general glut debate".
- Markets always tend to clear themselves over time when time inconsistencies resolve:
  - Assumed that markets were way too efficient where money was only a mode of exchange without a storing value (no currency shortages) and people always rushed to supply or demand goods.
- Concluded income equals expenditures either in the form of consumption or investment (no recession or unemployment).

Classical School

John Stuart Mill (1806–1873)

- A political economist and a social philosopher, trained by his father, James Mill, as a protégé.
- Consumed all the political economy writings at a very young age, provided a balanced view (a summary) of classical economic thought.
- Extended the reach of liberal ideas in his works, *On Liberty* and *On the Subjection of Women*.
- **Key aspect:** *Principles of Political Economy* consolidated the views of Smith and Ricardo while acknowledging that there must be a balance between Ricardian deductivism and anectodal evidence from sociology and history.

Classical School

John Stuart Mill (1806–1873)

- Developed a price theory without referring to value:
  - *Happily, there is nothing in the laws of Value which remains for the present or any future writer to clear up; the theory of the subject is complete.*
- Unlike Smith and Ricardo's emphasis on the cost side, argued that supply and demand were both critical for the price determination.
  - *the proper mathematical analogy is that of an equation. Demand and supply, the quantity demanded and the quantity supplied, will be made equal. If unequal at any moment, competition equalizes them, and the manner in which this is done is by an adjustment of the value. If the demand increases, the value rises; if the demand diminishes, the value falls; again, if the supply falls off, the value rises; and falls if the supply is increased.*
- Also argued that under the assumption that foreseen spending on a commodity is fixed, *any given increase of cheapness produces an exactly proportional increase of consumption.*
  - This is very close to Marshallian demand curve.

Classical School

John Stuart Mill (1806–1873)

- Supported Say's Law but for the first time, drew attention to the recessions:
  - *All sellers are inevitably buyers.*
  - *At such times there is really an excess of all commodities above the money demand: in other words, there is an under-supply of money.*
  - *... only while the crisis lasts.*
- Concluded that in the long run, Say's Law should hold.

Classical School

John Stuart Mill (1806–1873)

- Still believed in Ricardian stationary state but also claimed that the equilibrium is not a place where the current struggles continue:
  - *We have still to consider the economical condition of mankind as liable to change and indeed ... as at all times undergoing* **progressive changes**. *We have to consider what these changes are, what are their laws, and what their ultimate tendencies; thereby adding a theory of motion to our theory of equilibrium – the Dynamics of political economy to the Statics.*
  - *I cannot, therefore, regard the stationary state of capital and wealth with the unaffected aversion so generally manifested towards it by political economists of the old school. I am inclined to believe that it would be, on the whole, a very considerable improvement on our present condition.*

Classical School

John Stuart Mill (1806–1873)

- Also wrote on socialism defending both sides of the equation.
- Claimed that both capitalist and socialist sides threaten the social cooperation:
  - *If the rich regard the poor as ... their servants and dependents, the rich in their turn are regarded as a mere prey and pasture for the poor.*
- Claimed that some socialist views would lead to a monopoly of labor which is not a lesser evil than the capital monopoly and envisioned a "fairer" gradual version of the society:
  - *The form of association ... which if mankind continue to improve, must be expected in the end to predominate, is not that which can exist between a capitalist as chief, and work people without a voice in the management, but the association of the labourers themselves on terms of equality, collectively owning the capital with which they carry on their operations, and working under managers elected and removable by themselves.*

- Remember that Say's Law says there cannot be both excess supply and demand at the same time (or to weakly put it, not for long).
- Malthus argued that there would be general gluts (excess goods) based on two observations:
  1. Income from producing a good would be divided between wages, profits, and land rents.
  2. Wages are spent, profits are re-invested but landowners do not consume enough so aggregate income is not equal to aggregate spending.

Ricardo and J. S. Mill argued otherwise:

- Assume that there are two types of goods (capital and consumption goods) sold at prices, p_c and p_k.

- Suppose that production of both goods depends on labor (L), capital (K), and land (T). Therefore, the payments to inputs must be:

$$\begin{aligned} p_c Y_c &= wL_c + (1+r)p_k K_c + tT_c \\ p_k Y_k &= wL_k + (1+r)p_k K_k + tT_k \end{aligned}$$

- For simplicity, one can normalize prices using p_c as $w = w/p_c$, $t = t/p_c$, $p = p_k/p_c$:

$$\begin{aligned} Y_c &= wL_c + (1+r)pK_c + tT_c \\ pY_k &= wL_k + (1+r)pK_k + tT_k \end{aligned}$$

- Assuming that savings are equal to supply of capital goods:

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- Plugging this back in capital good equation:

$$pY_k = (1+r)pK_c + \cancel{(1+r)pK_k} = wL_k + \cancel{(1+r)pK_k} + tT_k$$

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which implies $(1+r)pK_c = wL_k + tT_k$.

- Plugging $(1+r)pK_c$ back in consumption good equation:

$$\begin{aligned} Y_c &= wL_c + (1+r)pK_c + tT_c \\ &= wL_c + wL_k + tT_k + tT_c = w(L_c + L_k) + t(T_c + Tk) \end{aligned}$$

- Ricardians concluded that consumption equals income (no general glut).

- Malthus counterargued that equality would not hold specifically because landowners would consume only a fraction of their income, $s \cdot t(T_c + T_k)$, and thus:

$$Y_c > w(L_c + L_k) + s \cdot t(T_c + T_k)$$

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- Assuming that what is not consumed must be invested, Ricardians pushed back by claiming that:

$$t(T_c + T_k) - s \cdot t(T_c + T_k) = [1 - s] \cdot t(T_c + T_k)$$

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should then go to the savings:

$$(1 + r)pK_c + \cancel{(1 + r)pK_k} + [1 - s] \cdot t(T_c + T_k) = wL_k + \cancel{(1 + r)pK_k} + tT_k$$

- Plugging $(1+r)pK_c + [1-s] \cdot t(T_c + T_k) = wL_k + tT_k$ back in consumption goods equation

$$\begin{aligned} Y_c &= wL_c + (1+r)pK_c + tT_c \\ &= wL_c + wL_k + tT_k - [1-s] \cdot t(T_c + T_k) + tT_c \\ &= w(L_c + L_k) + 1 \cdot t(T_c + T_k) - [1-s] \cdot t(T_c + T_k) \\ &= w(L_c + L_k) + s \cdot t(T_c + T_k) \end{aligned}$$

which still holds with equality.

- Ricardians concluded that supply and demand for consumption goods would be equal as long as (1) investments are equal to savings and (2) what is not consumed is invested.
- Malthus argued back saying general gluts will exist at least in the short run.
- Malthus was correct because there are time inconsistencies in the short run but equality should hold in the long run.
- In its final form, general glut debate turned into a discussion about how long the short run will last or will the long run ever come.

Classical School

Karl Marx (1818-1883)

- A German philosopher and economist who earned his life from journalism.
- Lived most of his life in London in exile where he read classical economists, observed capitalist system and wrote his major work, *Das Kapital*.
- Not a natural member of the Classical School, embraced some core ideas of Ricardo and use them in his models with a different purpose.
- **Key aspect:** Challenged the capital-centered system and argued that it would bring its own end. Laid out models attempting to explain how the capital economy works but not without major flaws. Became a prominent figure in political sphere if not in the scientific sphere.

Classical School

Karl Marx (1818-1883)

- Labor Theory of value
- Organic composition of capital
- Surplus and profit rates
- Two-industry example
- Prices
- Growth theory
- Critique

Karl Marx (1818-1883)

Labor Theory of value

- Started his analysis by distinguishing between a feudal and a capitalist society.
- Alluding to Say's Law of Markets, in the feudal society, an artisan supplies some amounts of a good (C), and receives some money in exchange of selling the good (M), and with this money, buys some goods (C).
- However, in a capitalist society, a capitalist starts with some money (M), invests in capital goods (C), and in return receives more money than before ($M' > M$).
- Where does this surplus come from?

Karl Marx (1818-1883)

Labor Theory of value

- Argued that surplus come from exploiting laborers.
- Dismissing the role of land in modern production, saw labor as the only surplus-creating input.
- Going back to tension between wages and profits in Ricardo's value theory, argued that the capitalists would pay laborers less than the value of their work.
- Predicted that this tension between "productive forces" and "mode of production" would escalate over time to keep the profit rates high enough leading to the "demise" of the capitalist system.

Karl Marx (1818-1883)

Labor Theory of value

- Following Ricardo, argued that value of a product can be expressed in labor hours required in the production.
  - *A use-value, or useful article, therefore, has value only because human labour in the abstract has been embodied or materialised in it. How, then, is the magnitude of this value to be measured? Plainly, by the quantity of the value-creating substance, the labour, contained in the article.*
- Showed that every input can be turned into hours:
  - *As values, all commodities are only definite masses of congealed labor time.*
  - Assume that one uses labor, raw materials, and a machine to produce a good. Then, for instance, we can express the good's value as 10 hours of labor + raw materials requiring 40 hours to produce + 2/1000 of lifetime of a machine requiring 1000 hours to make = 52 hours.

Karl Marx (1818-1883)

Organic composition of capital

- Assumed that every production takes two forms of capital: (1) Fixed and (2) Variable
- Fixed capital (C) is the machinery, raw materials that enter the production, and themselves can be expressed in terms of labor hours.
- Variable capital (V) is the wage bill which takes into account labor hours for which workers are paid.
- Capital intensity of production q can be calculated as the share of fixed capital in total capital spent: $q = C/(C + V)$

Karl Marx (1818-1883)

Surplus and profit rates

- Going back to our previous example, value of the product was 52 hours = Labor (10h) + Raw materials (40h) + Machine (2h).
- Since raw materials and machines are supplied by other capitalists, including oneself, those need to be paid in full value.
- Generating profit is only possible through underpaying laborers.
- Surplus is defined as value of labor "exploited", the difference between value of labor hours exerted and value of labor hours paid.
- Imagine a capitalist paying a wage bill equivalent of 8 hours of labor while receiving 10 hours of labor.
- Remaining 2 hours is called surplus (S) and 2/8=25% is called the exploitation rate (surplus per labor hours paid).

Karl Marx (1818-1883)

Two-industry example

- Assume there are only two industries: Steel (capital-intenstive) and Garment (labor-intensive).
- In each industry, the capitalist purchases the machinery, raw goods, and hires the laborers and pay them a wage that is 60% of the value of their labor.
  - Question: What is the exploitation rate?

Karl Marx (1818-1883)

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  - Question: What is the exploitation rate? **S/V=67%**
- Suppose that Steel industry purchases machinery and goods requiring 75 hours to produce and using these, production takes additional 25 hours of labor.
  - Question: What is the labor value of final product (steel)?

Karl Marx (1818-1883)

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- Suppose that Steel industry purchases machinery and goods requiring 75 hours to produce and using these, production takes additional 25 hours of labor.
  - Question: What is the labor value of final product (steel)? **100 hrs**
- Suppose that Garment industry purchases machinery and goods requiring 25 hours to produce and using these, production takes additional 75 hours of labor.
  - Question: What is the labor value of final product (garment)?

Karl Marx (1818-1883)

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  - Question: What is the labor value of final product (garment)? **100 hrs**

Karl Marx (1818-1883)

Two-industry example

- Let's calculate the surplus in each industry:

$$S = \text{Labor used} - \text{Labor paid}$$

Karl Marx (1818-1883)

Two-industry example

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$$\begin{aligned} S &= \text{Labor used} - \text{Labor paid} \\ S_s &= 25 - 25 * 0.6 = 25 - 15 = 10 \text{ hrs} \end{aligned}$$

Karl Marx (1818-1883)

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S_g &= 75 - 75 * 0.6 = 75 - 45 = 30 \text{ hrs}
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Karl Marx (1818-1883)

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Karl Marx (1818-1883)

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- How can we calculate the profit rate for each industry?

Karl Marx (1818-1883)

Two-industry example

- Let's now calculate the profit rates:

$$r = \frac{S}{C + V}$$

Karl Marx (1818-1883)

Two-industry example

- Let's now calculate the profit rates:

$$
\begin{aligned}
r &= \frac{S}{C+V} \\
r_s &= \frac{10}{75+15} = 11\%
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Karl Marx (1818-1883)

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Karl Marx (1818-1883)

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Karl Marx (1818-1883)

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- So, this result has two important implications:
  - In an economy, profit rates of capital is not equal across industries.
  - Labor-intensive industries have higher profit rates than capital-intensive industries.
- Obviously, both of these would be easily refused by observations from real economy. How would one solve this puzzle?

Karl Marx (1818-1883)

Prices

- Recognizing this problem early on, Marx thought of a solution: Jettisoning the labor theory of value!
- Argued that market prices do not have to be equal to labor value of goods.
- It only matters whether for the "average" industry, price equals the labor value.
- Argued that one could leverage the "average" industry to equalize the profit rates across industries.
- Each industry would face the same profit rates but different prices.
- Question: For which of two industries (steel and garment), price of the final good should be higher?

Karl Marx (1818-1883)

Prices

Industry	C	V	C+V	S	Value	r	Price	Deviation
Steel	75	15	90	10	100	25%	$90 \times 1.25 = 112.5$	+12.5
Garment	25	45	70	30	100	25%	$70 \times 1.25 = 87.5$	-12.5
Average	50	30	80	20	100	25%	100	0

- First, we calculate the profit rate for the average industry (20/80=25%).
- Then, we apply the same profit rate to find industry-specific prices.
- As a result, steel is more expensive than garment and all industries has the same profit rate.

Samuelson (1971) example:

Industry	C	V	C+V	S	Value	r	Price	Deviation
1	95	5	100	5	105	5%	122	+17
2	85	15	100	15	115	15%	122	+7
3	80	20	100	20	120	20%	122	+2
4	70	30	100	30	130	30%	122	-8
5	60	40	100	40	140	40%	122	-18
Average	78	22	100	22	122	22%	122	0

- Different than the previous example, this assumes $C + V$ is the same across industries.
- Equalizing the profit rates (22%), prices become equal but what is important is deviation from value, which is, on average, zero.

Karl Marx (1818-1883)

Prices

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Karl Marx (1818-1883)

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  - Initially, we argued that the capitalist would purchase machinery and raw goods that required XX hours of labor. Since these machines and raw materials themselves come from several different industries, they will need to be priced, as well.

Karl Marx (1818-1883)

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  - Initially, we argued that the capitalist would purchase machinery and raw goods that required XX hours of labor. Since these machines and raw materials themselves come from several different industries, they will need to be priced, as well.
  - So, this becomes one big system of equations with each industry being fed by multiple industries where you have to solve the system for prices for each industry.

Karl Marx (1818-1883)

Growth theory

- Smith argued that rise in living standards was only possible through technological progress and better division of labor.
- Ricardo argued that there would be a point in time where profits would be driven down to zero, which would be a stationary state with no growth.
- Marx also argued for falling profit rates but envisioned that the end would be different – a complete fallout between labor and capital.

Karl Marx (1818-1883)

Growth theory

- Followed up on the Ricardian notion that profit rates would decline as more capital is accumulated.
- Argued that in their never-ending search for greater profits, the capitalists would invent and implement labor-saving technologies, replacing capital with labor ($\frac{C}{V} \uparrow$)
- Concluded that this would drive down the profit rates since:

$$r = \frac{S}{C+V} = \frac{S}{V} \cdot \frac{V}{C+V} = \frac{S}{V} \cdot \frac{\frac{V}{V}}{\frac{C+V}{V}} = \frac{S}{V} \cdot \frac{1}{1+\frac{C}{V}}$$

where holding exploitation rate (S/V) fixed, r decreases as C/V increases.

Karl Marx (1818-1883)

Growth theory

- Argued that, in an effort to increase falling profits, exploitation rate may be increased through longer work days or lower wages and also higher monopoly prices may be charged.
- Assumed that, increasing capital-labor ratio, on one hand, would fuel specialization and industry concentration leading to monopoly. On the other hand, it would increase the number of unemployed, "industrial reserve army".
- Concluded that reiterating these trends would make it capital and labor incompatible at some point, and thus the system breakdown.

Karl Marx (1818-1883)

Critique

- Cited mechanisms behind the downfall of capitalism have many loopholes:
  - Why capitalists accumulate and invest more capital when profits rates are declining?
  - Why do wages not fall to clear unemployment?
  - Why would more capital accumulation lead to higher industrial concentration?
  - Why must increased concentration lead to unemployment?
- These assumptions are all critical to Marx's theory of growth but they seem more like a prophecy than being deduced from logical conclusions.