Classical Economics after Adam Smith

- David Ricardo (1772-1823)
- Thomas Malthus (1766-1834)
- Malthus vs. Ricardo on the problem of stability of capitalism
- Ricardo – contributions to methodology of economics, theory of value, international trade theory, public finance, distribution theory etc.

David Ricardo (1772-1823)

Thomas Malthus (1766-1834)

Thomas Malthus' principle of population

- Malthus, *Essay on the Principle of Population*, 1798, 1803
- Malthus's population principle (population thesis) - population tends to increase faster than the food supply
- Assumptions:
  - Food is necessary for the existence of humankind;
  - Passion between sexes is necessary and will remain unchanged.

Thomas Malthus’ principle of population, cont.

- In absence of checks on population growth it will grow in geometric progression (i.e. 1, 2, 4, 8, 16…), while food supply increases arithmetically (i.e. 1, 2, 3, 4, 5,…).
- But, in reality checks on population will develop in society to keep the rate of population growth in line with the growth rate of food supply.

Thomas Malthus’ principle of population, cont.

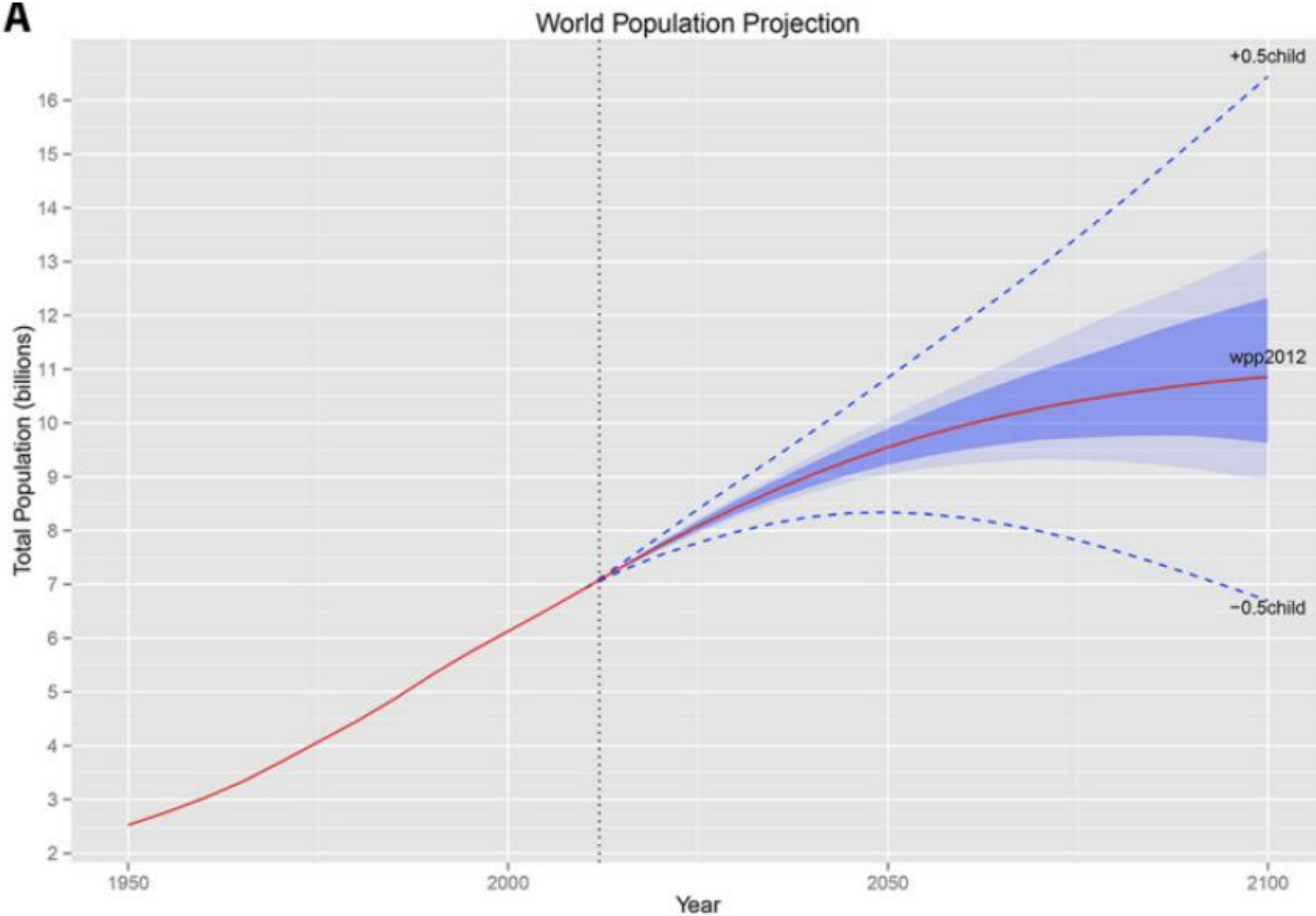
- Population checks:

- ‘Positive’ – increases in the death rate in result of wars, famines, diseases etc.
- Preventive – postponement of marriage, prostitution, contraception, moral restraint etc.

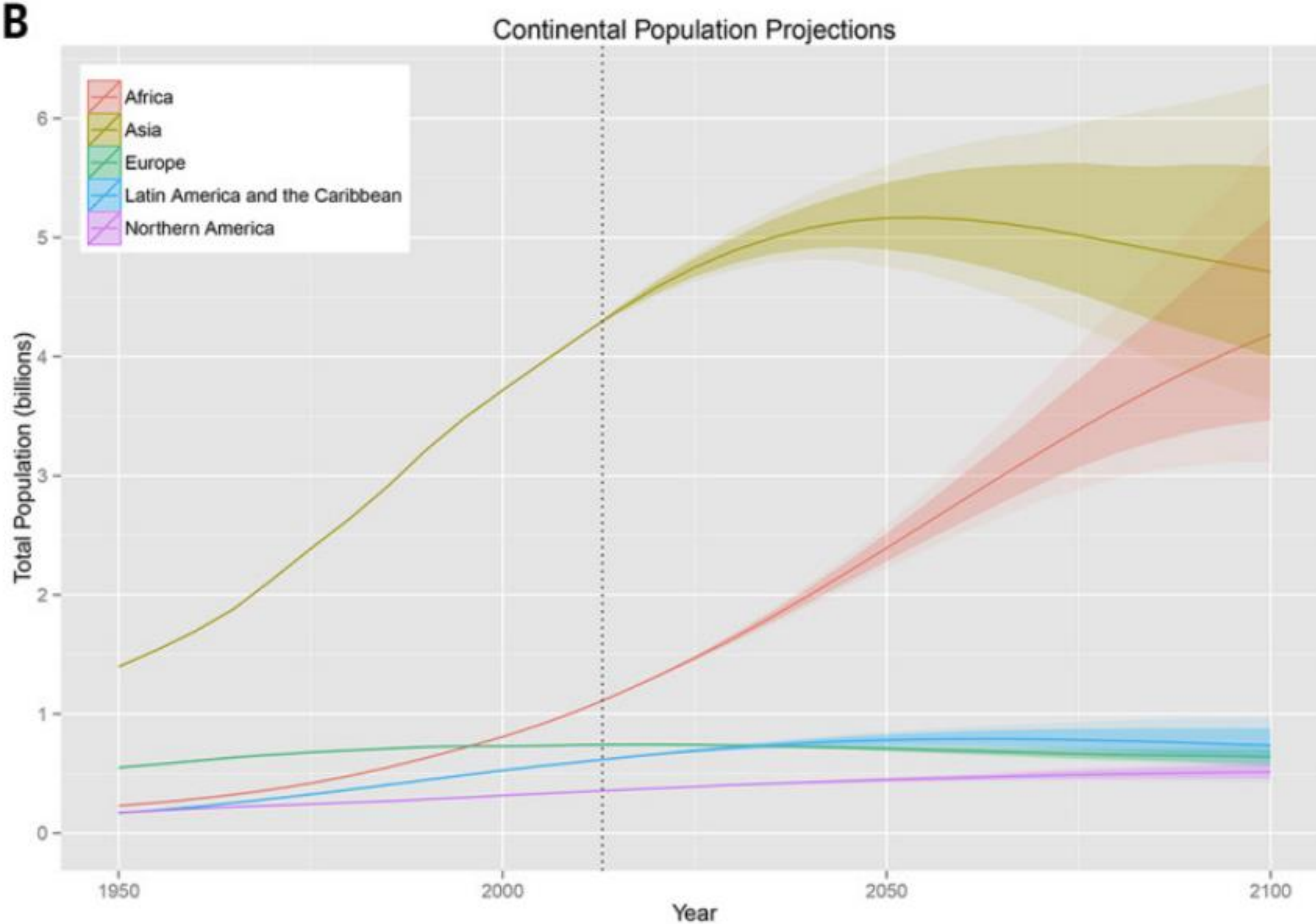
Thomas Malthus' principle of population, cont.

- Economic implication of Malthus's population principle:
  - There is mass poverty in the society and you can not help it; if the welfare of the poor is increased above the subsistence level, they start to reproduce at a higher rate then the rate of growth of their welfare and in the end the welfare of the poor returns to the subsistence level.
- Malthus's principle was used to defend the so-called <u>'iron law of wages'</u> – wages of labourers can never rise above the subsistence level (it allows the labourers barely to survive).
- What is wrong with Malthusian theory?

A


World Population Projection
+0.5child
wpp2012
−0.5child
Total Population (billions)
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1950
2000
2050
2100
Year

B


Continental Population Projections
Africa
Asia
Europe
Latin America and the Caribbean
Northern America
Total Population (billions)
0
1
2
3
4
5
6
Year
1950
2000
2050
2100

Economics of David Ricardo (1772-1823)

- Major work – *Principles of Political Economy and Taxation*, 1817

- Ricardo’s views on methodology of economics
  – Pure theorist, built very abstract models of the economy.
  – Did not use mathematics, but still produced abstract, logical theories.
  – Pure theorist, but policy-oriented – used abstract models to resolve practical policy issues

Ricardo on the methodology of economics

- Non-contextual economic policy
- Ricardo's approach was followed by mainstream economics in 20th century.
- 'Ricardian vice' – tendency in modern economics to apply overly abstract models in policy considerations

The proper subject of economics according to Ricardo

- Functional distribution of national income over time = distribution of national income among social classes (landlords, capitalists, labourers) over time.
- Interested in the impact of changes in functional distribution of national income on the rate of profit and the rate of economic growth.
- Main conclusion: in the long-run both rates will diminish to zero.

Theoretical contributions of Ricardo

- Theory of land rent
- Value theory (theory of relative prices)
- Distribution theory
- International trade theory
- Debate with Malthus on stability of capitalism

Ricardo’s land rent theory

- Principle of diminishing returns – if one factor of production is steadily increased, while others are held constant, than the rate of growth of total product will eventually diminish.

- Assumption of the theory: capital and labour are combined into one factor – doses of capital and labour.
- The economy is one big agricultural farm producing one good – wheat (or grain in general, or potatoes, or…)
- Land rent (payment to land used as a factor of production) exists because of:
  - Scarcity of fertile land
  - Law of diminishing returns

Ricardo’s land rent theory

Plot A	Plot B	Plot C
100	90	80
90	80	
80		

Increases of the total product from subseqent doses of labour and capital (in bushels)

Land rent = maximal sum, which a farmer working on a less fertile land would be willing to pay to the owner of a more fertile land.

What is the amount of land rent on land of various types in the example?

30 bushels on plot type A
10 – on plot type B

Ricardo's land rent theory, cont.

- What is the price of wheat in the model, if one dose of capital and labour costs 100 dollars?
- We assume that all three kinds of producers (from A to C) are able to sell their output
- Marginal cost (MC) = $\Delta TC/\Delta Q$,

  where ΔTC is change in total cost, ΔQ is change in output
- Conclusions of the model:
  - Market price of wheat equals marginal cost of production of most inefficient producer.
  - Owner of the more fertile ground receive land rent
  - The market price of wheat is set on the least fertile land, where there is no land rent, so the price of wheat does not depend on land rent.

Ricardo’s value theory

- Ricardo’s aim – to explain changes in relative prices over time
  - (Adam Smith – to explain relative prices at given point in time)

- Distinction between (a) scarce, not freely reproducible commodities; and (b) freely reproducible commodities.

Ricardo’s value theory

- Ricardo rejected Adam Smith’s cost of production theory of value in favour of labour theory of value.

- Labour theory of value = value of a commodity depends solely on the quantity of labour, which is necessary for its production.

Four problems with Ricardo's labour theory of value.

1. How to measure the necessary quantity of labour?

   – Ricardo's answer – number of clock hours devoted to labour

2. Does capital have no impact on the values of goods produced with its use?

   – Ricardo's answer – treat capital as <u>stored-up labour</u> (every capital good is treated as a stock of labour applied to production of this good in previous periods.)
   – Labour stored-up in a commodity is called <u>indirect labour</u>.

Does capital have no impact on the values of goods produced with its use?

- Therefore, quantity of labour in a commodity produced today by both labour and capital = quantity of direct labour applied today + indirect labour (applied in previous periods to produce a capital good) equivalent to depreciation of capital
- Example: producing spoons with a tool (capital good)
  - Produciton of the tool requires 100 hours of pure labour
  - The tool depriciates at the rate of one percent of its cost for each spoon it produces.
  - You are able to produce 1 spoon using 2 hours of (direct) labour and the tool
- So the total labour cost of 1 spoon is...
- = 2 hours of direct lab. + 1% * 100h (1h of indirect labour) = 2h + 1h = 3h

Treating capital as a stored-up labour

- But this solution is wrong…

- If labour has been applied in the past to produce capital goods, the value of goods produced today with the use of these capital goods, must include not only indirect (stored-up) labour, but also the <u>interest</u> on funds paid to the indirect labour from the beginning of the production process until the final good is sold.

Why treating capital as a stored-up labour is not enough: an example

- Two goods, x_1 and x_2 are produced by the use of labour only, but there is circulating capital to cover for wages of labourers during production process.
  - a_1 and a_2 are the coefficients of labour – number of hours needed to produce a unit of, respectively, good 1 and 2.
  - t_1 and t_2 are periods in which units of goods 1 and 2 are produced.
  - *i* – is the interest rate on circulating capital,

- Then, the prices of commodities are given by:
  $P_1=a_1(1+i)^{t1}$ $P_2=a_2(1+i)^{t2}$
- If i = 5% per year, and $t_1 = 1$, $P_1= a_1*(1.05)^1 = a_1 + a_{1*}0.05$
- If i = 2% per year, and $t_1 = 2$, $P_1= a_1*(1.02)^2 = (a_1 + a_{1*}0.02)* 1.02$

- The relative price of these commodities is given by:
  $p_1/p_2 = a_1/a_2*(1+i)^{t_1-t_2}$

- If $t_1 \neq t_2$, then it is not an exact (pure) labour theory of value.

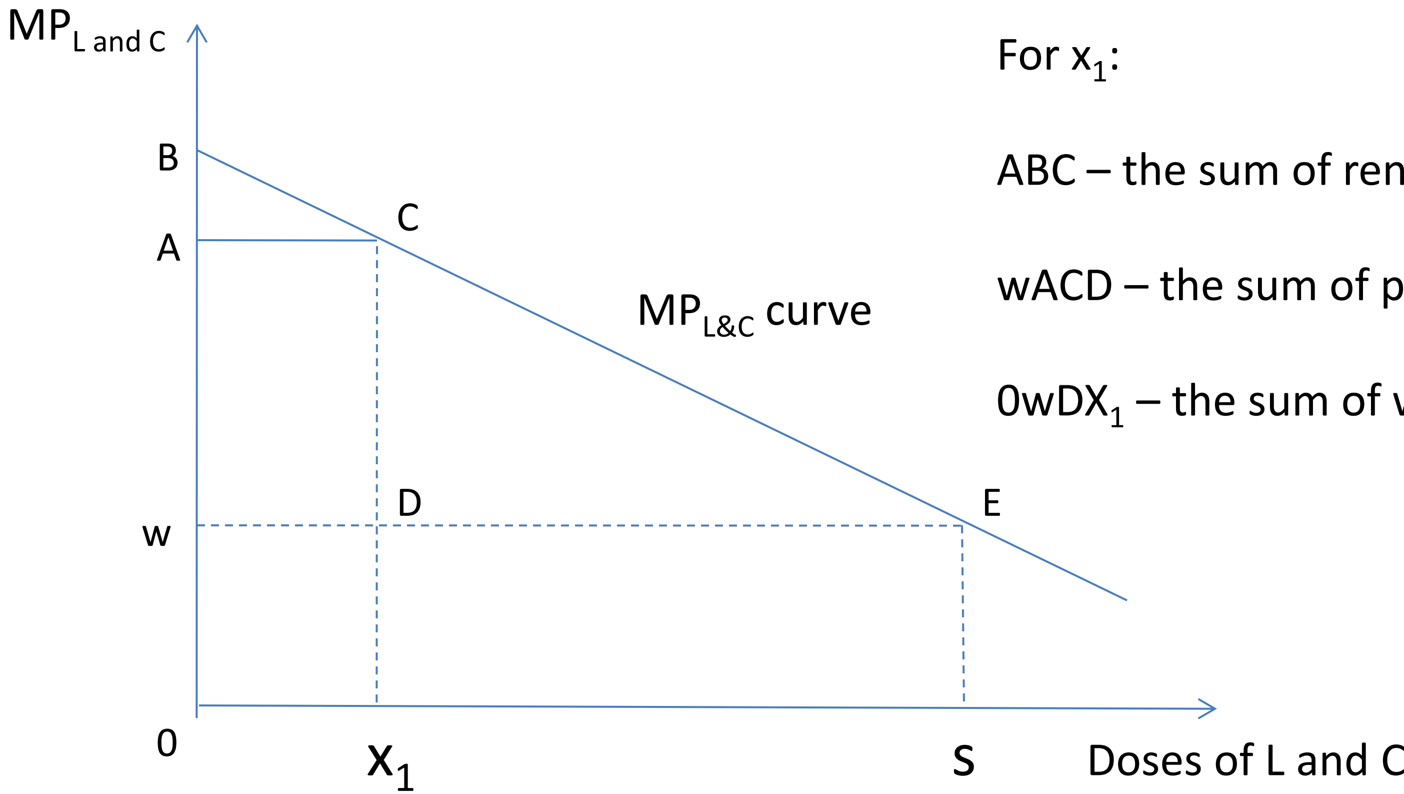
Ricardo’s theory of distribution

- Interested in changes in the functional distribution of national income in the long-run

- Society made up of 3 classes: capitalists receiving profits, landlords receiving land rents and labourers receiving wages

- Capitalists contribute most to the economic growth; labourers receive wages at the subsistence level; landlords are ‘parasites’ – do not serve socially useful functions.

Ricardo’s theory of distribution



For x_1:

ABC – the sum of rents

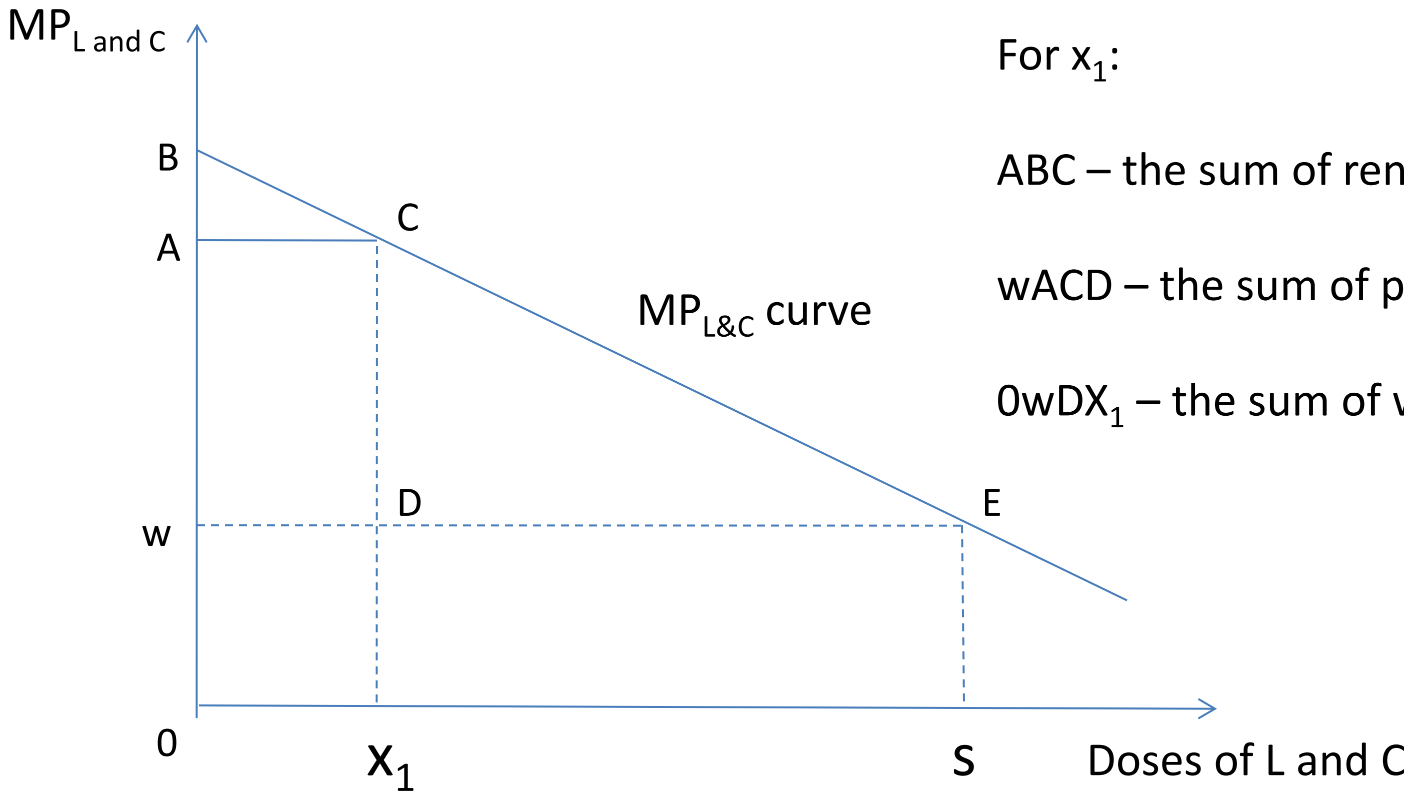
wACD – the sum of profits

$0wDX_1$ – the sum of wages

MP (marginal product) – an increase in TP resulting from the employment of additional unit of a factor of production (another dose of L&C)

The rate of profit (profit/capital) is the difference between MP of the last dose of L&C used and the wage rate (CD for X_1) – why?

Ricardo's theory of distribution



For x_1:

ABC – the sum of rents

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When rate of profit (CD) is high, the stock of capital increases, wage fund rises, the number of labourers increases, the supply of food is greater, the cost of food increases, land rents are greater, the price of food increases and the rate of profit falls, up to the point S when it is 0.

S – stationary state of the economy

Ricardo vs. Malthus on the stability of capitalism

- The debate is also known as controversy over Say's Law.

- Jean Baptiste Say (1767-1832), formulated a 'law' that there could be no underutilization of resources in market economy ("supply creates its own demand")

- The 'law' excludes the possibility that people <u>hoard</u> the money (hoarding = accumulating money without any purpose instead of spending it on savings or consumption)

Malthus's arguments against the stability of capitalism

1. Labour does not receive the whole product produced in the economy – demand created by the labour class is not sufficient to purchase all final goods at market prices.
2. Too much savings in capitalism can produce troubles in the long-run

   Today's savings reduce the demand for consumer's goods, but the process of investment leads to production of more consumer's goods in the future – but the demand for those goods is already reduced. So in the long-run consumer's demand will not be sufficient to purchase all final goods produced.

Summary of David Ricardo’s contributions to economics:

- Introduction of abstract modelling
- Theory of the land rent
- Theory of distribution of income over time (prediction – coming of stationary state)
- Advanced labour theory of value
- The lot of lower income classes can not be improved
- Defended Say’s Law
- International trade theory – comparative advantage theory