Lesson 5 — The Effects of Material Progress upon the Distribution of Wealth

(a synopsis) Based on Book IV Progress and Poverty.

The increase in population and improvements in the arts of production and exchange, which include knowledge, education, government, police, and even manners and morals so far as they increase the power of producing wealth, contribute to material progress.

Effect of Increase of Population

The increase in population extends the margin of production (free land) to less productive land. However, the increases in population also makes possible a greater division and specialization of labor and trade. The lower productivity on the land that has come into use is offset by an increased productivity on all superior land.

The average productivity may remain the same or increase because of increased population and cooperation on superior lands. It is possible that wages and interest will remain the same or increase as an amount. However, rent will not only increase as an amount, but as a portion of what is produced — as wages and interest become a smaller portion of the total production.

Rent and the increase of rent are not due to anything that the landowner as a landowner has done. Rent and the increase of rent are generally due to the disproportionately greater population on particular land. The greater the density of population, the greater the potential to sub-divide labor, produce in large quantities, and trade. Infrastructure and tall buildings enable a greater density of population, but only if population does become more dense does it increase rent.

Effect of Inventions

Inventions, innovations, and new discoveries enable the same result with less labor or a greater result with the same labor. Labor saving inventions enable other things to be produced with the time saved, which increases the total production.

You can't make something out of nothing. As the efficiency of production is increased, the demand for land goes up. More materials are mined to make more products; more farmland can be cultivated with machines for better tasting food; special land is used for manufacturing and trade. The better land is used more intensely, and new land is brought into production.

The increased demand for land extends the margin. The free land opportunity is potentially less productive, and wages and interest fall, increasing rent. However, inventions and new technologies tend to increase production more than enough to compensate for the extension of the margin. Therefore, wages and interest increase as an amount, as well as rent.

Most inventions increase productivity more where population is dense than where it is sparse and the land is free. Therefore, rent tends to become a larger portion, and wages and interest, a smaller portion of what's produced.

The elevator enabled land to be used more intensely. Its use slowed the extension of the margin by enabling denser populations. Non-the-less, the greater cooperation that resulted on particular lands increased rent as amount and a portion of the product as well.

Governmental expenditures such as roads, bridges, sewers, drainage, and irrigation projects give us the same result with less exertion or a greater result with the same exertion. The greater the population, the more these improvements increase production. As long as there is free land, it

increases wages and interest as an amount while it increases rent as an amount and as a portion of what's produced.

Effect of land Speculation

As it becomes evident that the rental value of land increases with the increase in population, people tend to acquire and hold more land than they need. They speculate that population and therefore the rental value of land will increase. That is why the first settlers to a new region generally try to get more land than they need. People often buy land and hold it for the increase in value.

Holding any land out of use, whether it is mineral land, farmland, or land in cities, prematurely extends the margin and lowers wages and interest. Underuse of land, like a one-story building where a five-story building would be the most economical use, has the same effect. In the year 2007 every American city has many underdeveloped sites. They range from slightly less than the highest and best use to completely vacant. This increases the sprawl of suburban development, increases the demand for farmland, and prematurely destroys the wilderness.

Land speculation, which means holding land for the increase in value, is not always profitable. Sometimes land values fall. Sometimes the holding costs offset the gains. However, land speculation always moves labor and capital to less potentially productive land. Unused and underused urban land moves people to less productive rural areas; it creates an impediment to cooperation; it separates people who would be more efficient in closer proximity; it increases the cost of the infrastructure (more roads, pipes and wires), and the time and distance of transportation, all of which reduces production.

Land speculation prematurely extends the margin until there's no free land. When labor and capital have no alternate way to employ themselves, wages and interest tend to a bare minimum. Wages of the least productive, least demanded workers tend to a bare subsistence: an amount below which they would be hungry or sick and actually produce less. With no free land, the wages of workers with superior knowledge and skill would fall to a point below which they would no longer have the incentive to acquire those attributes. Without free land the rate of interest would fall to the point below which there would be no incentive to lend capital (buildings, machines, and inventory), and productivity would fall. Governments intervene with things like the Minimum wage and the eight-hour day, but in their absence wages and interest tend to the point below which productivity and therefore the rent would fall too.

The rent of particular land may go up because of an increase in its productive potential or an extension of the margin. Rent may be calculated by separating what is paid for the use of a house from what is paid for the use of land, or by distributing a product into wages, interest, and rent.

The free land margin of production may seem irrelevant since there hasn't been a frontier with free land for over 100 years. However, by seeing why wages and interest tend to remain constant, and why we no longer have any free land, we may have more confidence in determining the best course of action in raising wages and creating full employment today.

The population continues to increase; inventions continue to replace some workers while enabling others to utilize more land, and previously unused land continues to come into production. However, even in the best of times too much land is withheld from production. The difference between the amount of land needed to employ labor and capital, and the amount of land actually in use will equal the level of unemployment. It will be the least skilled and educated workers who are unemployed, but no increase in education or skill can change the fact that jobs require land. You can't make something out of nothing.

Chart 1. **Some land that yields 6 is still free. Therefore, Wages & Interest = 6**

Wealth Produced	9	8	7		6	5	4	3	2
Wages & Interest	6	6	6		6				
Rent	**3**	**2**	**1**	**0**					
	Land already owned				Land still free				

Chart 2. **More people arrive. The margin extends. Only 5 land is free. Wages & Interest fall to 5**

Wealth Produced	9	8	7	6		5	4	3	2
Wages & Interest	5	5	5	5		5			
Rent	**4**	**3**	**2**	**1**	**0**				
	Land already owned					Land still free			

Chart 3. **Specialization doubles the results of labor & capital. Wages & Int. rise to 10**

Wealth Produced	18	16	14	12		**10**	8	6	4
Wages & Interest	10	10	10	10		**10**			
Rent	**8**	**6**	**4**	**2**	**0**				
	Land already owned					Land still free			

Chart 4. **Inventions, infrastructure, and public service increase production.**

Wealth Produced	36	32	28	24		**20**	16	12	8
Wages & Interest	20	20	20	20		**20**			
Rent	**16**	**12**	**8**	**4**	0				
	Land already owned					Land still free			

Chart 5. **Greater efficiency requires more land. The margin extends to 16. Wages & Int. = 16**

Wealth Produced	36	32	28	24	20		**16**	12	8
Wages & Interest	16	16	16	16	16		**16**		
Rent	**20**	**16**	**12**	**8**	**4**	0			
	Land already owned						Land still free		

The Increase in productivity more than compensates for the extension of the margin.

Chart 6. **Land speculation extends the margin with unused land. Wages & Int. down to 8**

Wealth Produced	36	32	28	24	20	16	12		**8**
Wages & Interest	8	8	8	8	8	8	8		**8**
Rent	**28**	**24**	**20**	**16**	**12**	8	4		
	Land already owned								**Free**

Chart 7. No free land. Wages and interest are as low as they can go without getting less produced.
The number "3" was picked arbitrarily. Everything above 3 equals rent.

Wealth Produced	36	32	28	24	20	16	12	8
Wages & Interest	3	3	3	3	3	3	3	3
Rent	**33**	**29**	**25**	**21**	**17**	**13**	**9**	**5**