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CHAPTER 33

The Medium of Circulation in the credit system

In the following table, the annual average number of notes of the Bank of England, in so far as they were in the hands of the public, are recorded, namely, the 5- and 10-pound notes, the 20- to 100-pound notes, and the larger denominations between 200 and 1,000 pounds sterling; also the percentages of the total circulation that each one of these groupings constitutes. The amounts are in thousands, i.e., the last three figures are omitted.

TABLE I

Year	£5-10 notes	%	£20-100 notes	%	£200-1,000 notes	%	Total
1844	9,263	45.7	5,735	28.3	5,253	26.0	20,241
1845	9,698	46.9	6,082	29.3	4,942	23.8	20,722
1846	9,918	48.9	5,778	28.5	4,590	22.6	20,286
1847	9,591	50.1	5,498	28.7	4,066	21.2	19,155
1848	8,732	48.3	5,046	27.9	4,307	23.8	18,085
1849	8,692	47.2	5,234	28.5	4,477	24.3	18,403
1850	9,164	47.2	5,587	28.8	4,646	24.0	19,398
1851	9,362	48.1	5,554	28.5	4,557	23.4	19,473
1852	9,839	45.0	6,161	28.2	5,856	26.8	21,856
1853	10,699	47.3	6,393	28.2	5,541	24.5	22,653
1854	10,565	51.0	5,910	28.5	4,234	20.5	20,709
1855	10,628	53.6	5,706	28.9	3,459	17.5	19,793
1856	10,680	54.4	5,645	28.7	3,323	16.9	19,648
1857	10,659	54.7	5,567	28.6	3,241	16.7	19,467

(B. A. 1858, p. XXVI.)

The total sum of circulating bank-notes, therefore, positively decreased from 1844 to 1857, although commercial business, as indicated by exports and imports, had more than doubled. The smaller bank-notes of £5 and £10 increased, as the table shows, from £9,263,000 in 1844 to £10,659,000 in 1857. And this took place simultaneously with the particularly heavy increase in gold circulation at that time. On the other hand, there was a decrease in the notes of higher denominations (£200 to £1,000) from £5,856,000 in 1852 to £3,241,000 in 1857, i.e., a decrease of more than £2½ million.

CHAPTER 34

The Currency Principle and the English Bank Legislation of 1844

J. G. Hubbard, former Governor of the Bank of England, testifies:

> "2400. The effect of the export of bullion ... has no reference whatever to the prices of commodities. It has an effect, and a very important one, upon the price of interest-bearing securities, because, as the rate of interest varies, the value of commodities which embodied that interest is necessarily powerfully affected."

He presents two tables covering the years 1834 to 1843, and 1845 to 1853, which show that the price variations of fifteen major commercial articles were quite independent of the export and import of gold and the interest rate. On the other hand, they show a close connection between the export and import of gold, which is, indeed, the "representative of our uninvested capital," and the interest rate.

> "[2402] In 1847, a very large amount of American securities were retransferred to America, and Russian securities to Russia, and other continental securities were transferred to those places from which we drew our supplies of grain."

The fifteen major articles on which the following tables of Hubbard are based include cotton, cotton yarn, cotton fabrics, wool, woollen cloth, flax, linen, indigo, pig-iron, tin, copper, tallow, sugar, coffee, and silk.

TABLE I: 1834-1843

Date	Bullion Reserve of Bank £	Market Rate of Discount *	Price increase	Price Decrease	Unchanged
March 1	9,104,000	2¾%	-	-	-
1835, March 1	6,274,000	3¾%	7	7	1
1836, March 1	7,918,000	3¼%	11	3	1
1837, March 1	4,077,000	5%	5	9	1
1838, March 1	10,471,000	2¾%	4	11	-
1839, Sept. 1	2,684,000	6%	8	5	2
1840, June 1	4,571,000	4¾%	5	9	1
1840, Dec. 1	3,642,000	5¾%	7	6	2
1841, Dec. 1	4,873,000	5%	3	2	-
1842, Dec. 1	10,603,000	2½%	2	13	-
1843, June 1	11,566,000	2¼%	1	14	-

TABLE II: 1844-1853

Date	Bullion Reserve of Bank £	Market Rate of Discount *	Price increase	Price Decrease	Unchanged
1844, March 1	16,162,000	2¼%	-	-	-
1845, Dec 1	13,237,000	4½%	11	4	-
1846, Sept. 1	16,366,000	3%	7	8	-
1847, Sept. 1	9,140,000	6%	6	6	3
1850, March 1	17,126,000	2½%	5	9	1
1851, June 1	13,705,000	3%	2	11	2
1852, Sept. 1	21,853,000	1¾%	9	5	1
1853, Dec. 1	15,093,000	5%	14	-	1

Price changes on 15 major items. Hubbard comments in this regard: "As in the 10 years 1834-43, so in 1844-53, movements in the bullion of the Bank were invariably accompanied by a decrease or increase in the loanable value of money advanced on discount; and the variations in the prices of commodities in this country exhibit an entire independence of the amount of circulation as shown in the fluctuations in bullion at the Bank of England" (Bank Acts Report, 1857).

CHAPTER 35

Precious Metal and Rate of Exchange

The Economist mentions the rapid effect on rates of exchange in 1847 of the raising of the interest rate and other circumstances exerting pressure on the money-market. But it should be borne in mind that the gold drain continued until the end of April in spite of the change in the rates of exchange; a turn did not take place here until early May.

On January 1, 1847, the metal reserve of the Bank was £15,066,691; the interest rate 3½%; three months' rates of exchange on Paris 25.75; on Hamburg 13.10; on Amsterdam 12.3¼. On March 5, the metal reserve had fallen to £11,595,535; the discount had risen to 4%; the rate of exchange fell to 25.67½ on Paris; 13.9¼ on Hamburg; and 12.2½ on Amsterdam. The drain of gold continued. See the following table:

TABLE I

1847	Bullion Reserve of the Bank of England	Money-Market	Highest Three-Month Rates		
			Paris	Hamburg	Amsterdam
March 20	11,231,630	Bank disc. 4%	25.67½	13.9¾	12.2½
April 3	10,246,410	,, ,, 5%	25.80	13.10	12.3½
April 10	9,867,053	Money very scarce	25.90	13.10½	12.4½
April 17	9,329,841	Bank disc. 5.5%	26.02½	13.40¾	12.5½
April 24	9,213,890	Pressure	26.05	13.12	12.6
May 4	9,337,746	Increasing pressure	26.45	13.12¾	12.6½
May 8	9,588,759	Highest pressure	26.27½	13.15½	12.7¾

In 1847, the total export of precious metal from England amounted to £8,602,597.

CHAPTER 39

First Form of Differential Rent (Differential Rent I)

Let us assume the existence of four kinds of soil: A, B, C, D. Let us furthermore assume the price of one quarter of wheat = £3, or 60 shillings. Since the rent is solely differential rent, this price of 60 shillings per quarter for the worst soil is equal to the price of production, that is, equal to the capital plus average profit. Let A be this worst soil, which yields 1 quarter = 60 shillings for each 50 shillings spent; hence the profit amounts to 10 shillings, or 20%.

Let B yield 2 quarters = 120 shillings for the same expenditure. This would mean 70 shillings of profit, or a surplus-profit of 60 shillings.

Let C yield 3 quarters = 180 shillings for the same expenditure; total profit = 130 shillings; surplus-profit = 120 shillings.

Let D yield 4 quarters = 240 shillings = 180 shillings of surplus-profit. We would then have the following sequence:

TABLE I

Type of Soil	Product		Capital Advanced	Profit		Rent	
	Quarters	Shillings		Quarters	Shillings	Quarters	Shillings
A	1	60	50	1/6	10	–	–
B	2	120	50	1 1/6	70	1	60
C	3	180	50	2 1/6	130	2	120
D	4	240	50	3 1/6	190	3	180
Total...	10 qrs	600sh				6 qrs	360sh

The respective rents are: D = 190sh. – 10sh., or the difference between D and A; C = 130sh. – 10sh., or the difference between C and A; B = 70sh. – 10sh., or the difference between B and A; and the total rent for B, C, D = 6 quarters = 360 shillings, equal to the sum of the differences between D and A, C and A, B and A.

This sequence, which represents a given product in a given condition may, considered abstractly (we have already offered the reasons why this may be the case in reality), descend from D to A, from fertile to less and less fertile soil, or rise from A to D, from relatively poor to more and more fertile soil, or, finally, may fluctuate, i.e., now rising, now descending – for instance from D to C, from C to A, and from A to B.

The process in the case of a descending sequence was as follows: The price of a quarter of wheat rose gradually from, say, 15 shillings to 60 shillings. As soon as the 4 quarters produced by D (we may consider these 4 quarters as so many million quarters) no longer sufficed, the price of wheat rose to a point where the supply shortage could be produced by C. That is to say, the price of wheat must have risen to 20 shillings per quarter. When it had risen to 30 shillings per quarter, B could be taken under cultivation, and when it reached 60 shillings A could be taken under cultivation; and the capital invested did not have to content itself with a rate of profit lower than 20%. In this manner, a rent was established for D, first of 5 shillings per quarter = 20 shillings for the 4 quarters produced by it; then of 15 shillings per quarter = 60 shillings, then of 45 shillings per quarter = 180 shillings for 4 quarters.

If the rate of profit of D originally was similarly = 20 %, then its total profit on 4 quarters of wheat was also but 10 shillings, but this represented more grain when the price was 15 shillings than it does when the price is 60 shillings. But since the grain enters into the reproduction of labour-power, and part of each quarter has to make good some portion of wages and another constant capital, the surplus-value under these conditions was higher, and thus other things being equal the rate of profit too. (The matter of rate of profit will have to be specially analysed, and in greater detail.)

On the other hand, if the sequence were in the reverse order, that is, if the process initiated from A, then the price of wheat at first would rise above 60 shillings per quarter when new land would have to be taken under cultivation. But since the necessary supply would be produced by B, a supply of 2 quarters, the price would fall to 60 shillings again, for B produced wheat at a cost of 30 shillings per quarter, but sold it at 60 shillings because the supply just sufficed to cover the demand. Thus a rent was formed, first of 60 shillings for B, and in the same way for C and D; it is assumed throughout that the market-price remained at 60 shillings, although C and D produced wheat having an actual value of 20 and 15 shillings per quarter respectively, because the supply of the one quarter produced by A was needed as much as ever to satisfy the total demand. In this case, the increase in demand above supply, which was first satisfied by A, then by A and B, would not have made it possible to cultivate B, C and D successively, but would merely have caused a general extension of the sphere of cultivation, and the more fertile lands might only later come under cultivation.

In the first sequence, an increase in price would raise the rent and decrease the rate of profit. Such a decrease might be entirely or partially checked by counteracting circumstances. This point will have to be treated later in more detail. It should not be forgotten that the general rate of profit is not determined uniformly in all spheres of production by the surplus-value. It is not the agricultural profit which determines industrial profit, but vice versa. But of this more anon.

In the second sequence the rate of profit on invested capital would remain the same. The amount of profit would be represented by less grain; but the relative price of grain, compared with that of other commodities, would have risen. However, the increase in profit wherever such an increase takes place, becomes separated from the profit in the form of rent, instead of flowing into the pockets of the capitalist tenant farmer and appearing as a growing profit. The price of grain, however, could remain unchanged under the conditions assumed here.

The development and growth of differential rent would remain the same for fixed as well as for increasing prices, and for a continuous progression from worse to better soils as well as for a continuous retrogression from better to worse soils. Thus far we have assumed: 1) that the price rises in one sequence and remains stationary in the other; 2) that there is a continuous progression from better to worse soil, or from worse to better soil.

But now let us assume that the demand for grain rises from its original figure of 10 to 17 quarters; furthermore, that the worst soil A is displaced by another soil A, which produces $1^1/_3$ quarters at a price of production of 60 shillings (50sh. cost plus 10sh. for 20% profit), so that its price of production per quarter = 45 shillings; or, perhaps, the old soil A may have improved through continuous rational cultivation, or be cultivated more productively at the same cost, for instance through the introduction of clover, etc., so that its output with the same investment of capital rises to $1^1/_3$ quarters. Let us also assume that soil types B, C and D yield the same output as previously, but that new soil types have been introduced, for instance, A′ with a fertility lying between A and B, and also B′ and B″ with a fertility between B and C. We should then observe the following phenomena:

First: The price of production of a quarter of wheat, or its regulating market-price, falls from 60 shillings to 45 shillings, or by 25%.

Second: The cultivation proceeds simultaneously from more fertile to less fertile soil, and from less fertile to more fertile soil. Soil A′ is more fertile than A, but less fertile than the hitherto cultivated soils B, C and D. B′ and B″ are more fertile than A, A′ and B, but less fertile than C and D. The sequence thus proceeds in crisscross fashion. Cultivation does not proceed to soil absolutely less fertile than A, etc., but to relatively less fertile soil with respect to the hitherto most fertile soil types C and on the other hand, cultivation does not

proceed to soil absolutely more fertile, but to relatively more fertile soil with respect to the hitherto least fertile soil A, or A and B.

Thirdly: The rent on B falls; likewise the rent on C and D; but the total rental in grain rises from 6 quarters to $7^2/_3$ the amount of cultivated and rent-yielding land increases, and the amount of produce rises from 10 quarters to 17. The profit, although it remains the same for A, rises if expressed in grain, but the rate of profit itself might rise, because the relative surplus-value does. In this case, the wage, i.e., the investment of variable capital and therefore the total outlay, is reduced because of the cheapening of means of subsistence. This total rental expressed in money falls from 360 shillings to 345 shillings.

TABLE II

Type of Soil	Product		Capital Advanced	Profit		Rent		Price of Production per Quarter
	Quarters	Shillings		Quarters	Shillings	Quarters	Shillings	
A	$1^1/_3$	60	50	2/9	10	–	–	45 sh.
A′	$1^2/_3$	75	50	5/9	25	$^1/_3$	15	36 sh.
B	2	90	50	8/9	40	$^2/_3$	30	30 sh.
B′	$2^1/_3$	105	50	1 2/9	55	1	45	25 5/7
B″	$2^2/_3$	120	50	1 5/9	70	$1^1/_3$	60	sh. 22½ sh.
C	3	135	50	1 8/9	85	$1^2/_3$	75	20 sh.
D	4	180	50	2 8/9	130	$2^2/_3$	120	15 sh.
Total...	10 qrs	600sh				6 qrs	360sh	

Let us draw up the new sequence.

Finally, if only soil types A, B, C and D were cultivated as before, but their productiveness rose in such a way that A produced 2 quarters instead of 1 quarter, B – 4 quarters instead of 2, C – 7 quarters instead of 3, and D – 10 quarters instead of 4, so that the same causes affect the various types of soil differently, the total production increases from 10 quarters to 23. Assuming that demand absorbs these 23 quarters through an increase in population and a fall in prices, we should obtain the following result:

TABLE III

Type of Soil	Product		Capital Advanced	Price of Production per Quarter	Profit		Rent	
	Quarters	Shillings			Quarters	Shillings	Quarters	Shillings
A	2	60	50	30	$^1/_3$	10	0	0
B	4	120	50	15	$2^1/_3$	70	2	60
C	7	210	50	8 4/7	$5^1/_3$	160	5	150
D	10	300	50	6	$8^1/_3$	250	8	240
Total...	23						15	450

The numerical proportions in this and in other tables are chosen at random but the assumptions are quite rational. The first and principal assumption is that an improvement in agriculture acts differently upon different soils, and in this case affects the best types of soil, C and D, more than types A and B. Experience has shown that this is generally the case, although the opposite may also take place. If the improvement affected the poorer soils more than the better ones, rent on the latter would have fallen instead of risen. But in our table,

we have assumed that the absolute growth in fertility of all soil types is simultaneously accompanied by an increase in greater relative fertility of the better soil types, C and D; this means an increase in the difference between the product at the same capital investment, and thus an increase in differential rent.

The second assumption is that total demand keeps pace with the increase in the total product. First, one need not imagine such an increase coming about abruptly, but rather gradually – until sequence III is established. Secondly, it is not true that the consumption of necessities of life does not increase as they become cheaper. The abolition of the Corn Laws in England proved the reverse to be the case (F. Newman, Lectures on Political Economy, London, 1851, p.158. – Ed.); the opposite view stems solely from the fact that large and sudden differences in harvests, which are mere results of weather, bring about at one time an extraordinary fall, at another an extraordinary rise, in grain prices. While in such a case the sudden and short-lived reduction in price does not have time to exert its full effect upon the extension of consumption, the opposite is true when a reduction arises from the lowering of the regulating price of production itself, i.e., is of a long-term nature. Thirdly, a part of the grain may be consumed in the form of brandy or beer; and the increasing consumption of both of these items is by no means confined within narrow limits. Fourthly, the matter depends in part upon the increase in population and in part on the fact that the country may be grain-exporting, as England still was long after the middle of the 18th century, so that the demand is not solely regulated within the confines of national consumption. Finally, the increase and price reduction in wheat production may result in making wheat, instead of rye or oats, the principal article of consumption for the masses, so that the demand for it may grow if only for this reason, just as the opposite may take place when production decreases and prices rise. Thus, under these assumptions, and with the previously selected ratios, sequence III yields the result that the price per quarter falls from 60 to 30 shillings, that is, by 50%; that production, compared to sequence I, increases from 10 to 23 quarters, i.e., by 130%; that the rent remains fixed for soil B, increases by 25% (In the German 1894 edition this reads: doubles.– Ed.) for C, and by $33^{1}/_{3}$% for D; and that the total rental increases from £18 to £22½, by 25%.

Tables IA, IB and IC

It is not merely a matter of rent per acre, or per hectare, nor generally of a difference between the price of production and market-price, nor between the individual and the general price of production per acre, but it is also a question of how many acres of each type of soil are under cultivation. The point of importance here relates directly only to the magnitude of the rental, that is, the total rent of the entire cultivated area; but it serves us at the same time as a stepping-stone to the consideration of a rise in the rate of rent although there is no rise in prices, nor increase in the differences in relative fertility of the various types of soil if prices fall.

TABLE I

Type of Soil	Acres	Price of Production	Product	Rent in Grain	Rent in Money
A	1	£3	1 qrs	0	0
B	1	£3	2 qrs	1 qrs	£3
C	1	£3	3 qrs	2 qrs	£6
D	1	£3	4 qrs	3 qrs	£9
Total...	4 acres		10 qrs	6 qrs	£18

Now let us assume that the number of cultivated acres is doubled in every category. We then have:

TABLE IA

Type of Soil	Acres	Price of Production	Product	Rent in Grain	Rent in Money
A	2	£6	2 qrs	0	0
B	2	£6	3 qrs	2 qrs	£6
C	2	£6	6 qrs	4 qrs	£12
D	2	£6	7 qrs	6 qrs	£18
Total...	8 acres		20 qrs	12 qrs	£36

Let us assume two more cases. Suppose in the first case production expands on the two poorest types of soil in the following manner:

TABLE IB

Type of Soil	Acres	Price of Production		Product	Rent in Grain	Rent in Money
		Per Acre	Total			
A	4	£3	£3	4 qrs	0	0
B	4	£3	£6	8 qrs	4 qrs	£12
C	2	£3	£15	6 qrs	4 qrs	£12
D	2	£3	£16	8 qrs	6 qrs	£18
Total...	12acres		£36	26 qrs	14 qrs	£42

And, finally, let us assume an unequal expansion of production and cultivated area for the four soil categories:

TABLE IC

Type of Soil	Acres	Price of Production		Rent in Grain	Rent in Money
		Per Acre	Total		
A	1	£3	£3	1 qrs	0
B	2	£3	£6	4 qrs	£6
C	5	£3	£15	15 qrs	£30
D	4	£3	£12	16 qrs	£18
Total...	12 acres		£36	36 qrs	£72

In the first place, the rent per acre remains the same in all these cases – I, Ia, Ib and Ic – for, in fact, the result of the same investment of capital per acre of the same soil type has remained unchanged. We have only assumed what is true of any country at any given moment; namely, that various soil types exist in definite ratios to the total cultivated area. And we also assumed what is always true of any two countries being compared, or of the same country at different periods, namely, that the proportions in which the total cultivated area is distributed among the different soil types vary.

In comparing Ia with I we see that if the cultivation of land in all four categories increases in the same proportion a doubling of the cultivated acreage doubles the total production, and that the same applies to the rent in grain and money.

However, if we compare Ib and then Ic with I, we see that in both cases a tripling of the area under cultivation occurs. It increases in both cases from 4 acres to 12, but in Ib classes A and B contribute most to the increase, with A yielding no rent and B yielding the smallest amount of differential rent. Thus, out of the 8 newly cultivated acres, A and B account for 3 each, i.e., 6 together, whereas C and D account for I each, i.e., 2 together. In other words, three-quarters of the increase is accounted for by A and B, and only one-quarter by C and D. With this premise, in Ib compared with I the trebled area of cultivation does not result in a trebled product, for the product does not increase from 10 to 30, but only to 26. On the other hand, since a considerable part of the increase concerns A, which does not yield any rent, and since the major part of the increase on better soils concerns B, the rent in grain rises only from 6 to 14 quarters, and the rent in money from £18 to £42.

But if we compare Ic with I, where the land yielding no rent does not increase in area and the land yielding a minimum rent increases but slightly, while C and D account for the major part of the increase, we find that when the cultivated area is trebled production increases from 10 to 36 quarters, i.e., to more than three times its original amount. The rent in grain increases from 6 to 24 quarters or to four times its original amount; and similarly money-rent, from £18 to £72.

In all these cases it is in the nature of things that the price of the agricultural product remains unchanged. The total rental increases in all cases with the extension of cultivation, unless it takes place exclusively on the worst soil, which does not yield any rent. But this increase varies. Should this extension involve the better soil types and the total output, consequently, increase not merely in proportion to the expansion of the area, but rather more rapidly, then the rent in grain and money increases to the same extent. Should it be the worst soil, and the types of soil close to it, that are principally involved in the expansion (whereby it is assumed that the worst soil represents a constant type), the total rental does not increase in proportion to the extension of cultivation. Thus, given two countries in which soil A, yielding no rent, is of the same quality, the rental is inversely proportional to the aliquot part represented by the worst soil and the inferior soil types in the total area under cultivation, and therefore inversely proportional to the output, assuming equal capital investments on equal total land areas. A relationship between the quantity of the worst and the quantity of the better cultivated land in the total land area of a given country thus has an opposite influence on the total rental than the relationship between the quality of the worst cultivated land and the quality of the better and best has on the

rent per acre and – other circumstances remaining the same – on the total rental. Confusion between these two points has given rise to all kinds of erroneous objections raised against differential rent. The total rental, then, increases by the mere extension of cultivation, and by the consequent greater investment of capital and labour in the land. But the most important point is this: Although it is our assumption that the ratio of rents per acre for the various kinds of soil remains the same, and therefore also the rate of rent considered with reference to capital invested in each acre, yet the following is to be observed: If we compare Ia with I, the case in which the number of cultivated acres and the capital invested in them have been proportionately increased, we find that as the total production has increased proportionately to the expanded cultivated area, i.e., as both have been doubled, so has the rental. It has risen from £18 to £36, just as the number of acres has risen from 4 to 8.

If we take the total area of 4 acres, we find that the total rental amounted to £18 and thus the average rent, including the land which does not yield any rent, is £4½. Such a calculation might be made, say, by a landlord owning all 4 acres; and in this way the average rent is statistically computed for a whole country. The total rental of £18 is obtained by the investment of a capital of £10. We call the ratio of these two figures the rate of rent; in the present case it is therefore 180%. The same rate of rent obtains in Ia, where 8 instead of 4 acres are cultivated, but all types of land have contributed to the increase in the same proportion. The total rental of £36 yields for 8 acres and an invested capital of £20 an average rent of £4½ per acre and a rate of rent of 180%. But if we consider Ib, where the increase has taken place mainly upon two inferior categories of soil, we obtain a rent of £42 for 12 acres, or an average rent of £3½ per acre. The total invested capital is £30, and therefore the rate of' rent = 140%. The average rent per acre has thus decreased by £1, and the rate of rent has fallen from 180 to 140%. Here then we have a rise in the total rental from £18 to £42, but a drop in average rent calculated per acre as well as on the basis of capital; the drop takes place parallel to an increase in production, but not proportionately. This occurs even though the rent for all types of soil, calculated per acre as well as on the basis of capital outlay, remains the same. This occurs because three-quarters of the increase is accounted for by soil A, which does not yield any rent, and soil B, which yields only minimum rent. If the total expansion in Case Ib had taken place solely on soil A, we should have 9 acres on A, I acre on B, I acre on C and I acre on D. The total rental would be £18, the same as before; the average rent for the 12 acres therefore would be £1½ per acre; and a rent of £18 on an invested capital of £30 would give a rate of rent of 60%. The average rent, calculated per acre as well as on the basis of invested capital, would have greatly decreased, while the total rental would not have increased.

Finally, let us compare Ic with I and Ib. Compared with I, the area has been trebled, and also the invested capital. The total rental is £72 for 12 acres, or £6 per acre – as against £4½ in Case I. The rate of rent on the invested capital (£72:£30) is 240% instead of 180%. The total output has risen from 10 to 36 quarters. Compared with Ib, where the total number of cultivated acres, the invested capital, and the differences between the cultivated soil types are the same, but the distribution different, the output is 36 quarters instead of 26 quarters, the average rent per acre is £6 instead of £3½, and the rate of rent with reference to the same invested total capital is 240% instead of 140%.

CHAPTER 41

Differential Rent II.
First Case: Constant Price of Production

The assumption here implies that the market-price is regulated as before by the capital invested in the worst soil A.

I. If the additional capital invested in any one of the rent-bearing soils – B, C, D – produces only as much as the same capital upon soil A, i.e., if it yields only the average profit at the regulating price of production, but no surplus-profit, then the effect upon the rent is nil. Everything remains as before. It is the same as though an arbitrary number of acres of A quality, i.e., of the worst soil, has been added to the cultivated area.

II. The additional capitals yield additional produce proportional to their magnitude on every one of the various soils; in other words, the volume of production grows according to the specific fertility of each soil type – in proportion to the magnitude of the additional capital. In Chapter XXXIX, we started with the following Table I:

TABLE I

Type of soil	Acres	Capital £	Profit £	Price of Prod. £	Output Qrs	Selling price £	Proceeds £	Rent		Rate of Surplus profit
								Qrs	£	
A	1	2½	½	3	1	3	3	0	0	0
B	1	2½	½	3	2	3	6	1	3	120%
C	1	2½	½	3	3	3	9	2	6	240%
D	1	2½	½	3	4	3	12	3	9	360%
Total...	4	10		12	10		30	6	18	180% average

This is now transformed into:

TABLE II

Type of soil	Acres	Capital £	Profit £	Price of Prod. £	Output Qrs	Selling price £	Proceeds £	Rent		Surplus profit
								Qrs	£	
A	1	2½ + 2½=5	1	6	2	3	6	0	0	0
B	1	2½ + 2½=5	1	6	3	3	12	2	6	120%
C	1	2½ + 2½=5	1	6	4	3	18	4	12	240%
D	1	2½ + 2½=5	1	6	8	3	24	6	18	360%
Total...	4	20			20		60	12	36	

It is not necessary in this case that the investment of capital be doubled in all soils, as in the table. The law is the same so long as additional capital is invested in one, or several, of the rent-bearing soils, no matter in what proportion. It is only necessary that production should increase upon every soil in the same ratio as the capital. The rent increases here merely in consequence of an increased investment of capital in the soil, and in proportion to this increase. This increase in produce and rent in consequence of, and proportionately to, the increased outlay of capital is just the same as regards the quantity of produce and rent, as when the cultivated area of the rentbearing plots of land of the same quality had been increased and taken under cultivation with the same outlay of capital as that previously invested in the same types of soils. In the case of Table II, for instance, the result would remain the same, if the additional capital of £2½ per acre were invested in an additional acre of B, C and D.

Furthermore, this assumption does not imply a more productive investment of capital, but only an outlay of more capital upon the same area with the same success as before. All relative proportions remain the same here. Of course, if we do not consider the proportional differences, but consider the purely arithmetic ones, then the differential rent may change upon the various soils. Let us assume, for instance, that additional capital has been invested only in B and D. The difference between D and A is then = 7 qrs whereas previously it was = 3, the difference between B and A = 3 qrs, whereas previously it was = 1; that between C and B = -1, whereas previously it was = +1, etc. But this arithmetic difference, which is decisive in differential rent I in so far as it expresses the difference in productivity with equal outlays of capital, is here quite immaterial, because it is merely a consequence of different additional investments of capital, or of no additional investment, while the difference for each equal portion of capital upon the various plots of land remains unchanged.

III. The additional capitals yield surplus-produce and thus form surplus-profit, but at a decreasing rate, not in proportion to their increase.

TABLE III

Soil	Acres	Capital £	Profit £	Price of Prod. £	Output Qrs	Selling price £	Proceeds £	Rent		Rate of Surplus profit
								Qrs	£	
A	1	2½	½	3	1	3	3	0	0	0
B	1	2½ + 2½=5	1	6	2 + 1½ = 3½	3	10½	1½	4½	90%
C	1	2½ + 2½=5	1	6	3+2=5	3	15	3	9	180%
D	1	2½ + 2½=5	1	6	4 + 3½ = 7½	3	22½	5½	16½	330%
		17½	3	21	17		51	10	30	

In the case of this third assumption, it is again immaterial whether the additional second investments of capital are uniformly distributed among the various soils or not; whether the decreasing production of surplus-profit takes place proportionately or not; whether the additional investments of capital are all in the same rent-bearing type of soil, or whether they are distributed equally or unequally among rent-bearing plots of land of varying quality. All these circumstances are immaterial for the law that is to be developed. The only assumption is that additional investments of capital yield surplus-profit upon any one of the rent-bearing soils, but in decreasing proportion to the amount of the increase in capital. The limits of this decrease, in the soils. If the successive outlays of capital are made exclusively in soil D, they may include the existing differences between D and A, then differences between D and C, and likewise between D and B. If they are all made in soil C, then only differences between C and A, and C and B; if exclusively in B, then only differences between B and A. But this is the law: The rent increases absolutely upon all these soils, even if not in proportion to the additional capital invested.

The rate of surplus-profit, considering both the additional capital and the total capital invested in the soil, decreases; but the absolute magnitude of the surplus-profit increases; just as the decreasing rate of profit on capital in general is, in the main, accompanied by an increase in the absolute amount of profit. Thus the average surplus-profit of a capital invested in B = 90% on the capital, whereas it was = 120% for the first outlay of capital. But the total surplus-profit increases from 1 qr to 1½ qrs, or from £3 to £4½. The total rent – considered by itself rather than in relation to the doubled magnitude of the advanced capital – has risen absolutely. The differences in rents from various soils and their relative proportions may vary here; but this variation in differences is a consequence, not cause, of the increase in rents in relation to one another.

IV. The case in which additional investments of capital in the better soils yield more produce than the original ones requires no further analysis. It goes without saying that under this assumption the rent per acre will increase, and proportionately more than the additional capital, no matter in which kind of soil the outlay has been made. In this case, the additional investment of capital is accompanied by improvements. This includes the cases in which an additional outlay of less capital produces the same or a greater effect than an additional outlay of more capital did formerly. This case is not quite identical with the former one, and the distinction is important in all investments of capital. For instance, if 400 yields a profit of 40, and 200 employed in a certain form yields a profit of 40, then the profit has risen from 10% to 20%, and to that extent it is the same as though 50 employed in a more effective form yields a profit of 10 instead of 5. We assume here that the profit is associated with a proportional increase in output. But the difference is that I must double the capital in the one case, whereas in the other, the effect I produce is doubled with the capital employed hitherto. It is by no means the same whether I produce: 1) the same output as before with half as much living and materialised labour, or 2) twice the output as before with the same labour, or 3) four times the former output with twice the labour. In the first case, labour – in a living or materialised form – is released, and may be employed otherwise; the power to dispose of capital and labour increases. The release of capital (and labour) is in itself an augmentation of wealth; it has exactly the same effect as though this additional capital has been obtained by accumulation, but it saves the labour of accumulation.

CHAPTER 42

Differential Rent II.
Second Case: Falling Price of Production

The price of production may fall when additional investments of capital take place with an unaltered, falling, or rising rate of productivity.

I. Productivity of the additional investment of capital remains the same.

TABLE IV

Type of Soil	Acres	Capital £	Profit £	Price of Prod.	Output Qrs	Selling price per £	Proceeds £	Rent		Rate of Surplus profit
								In Grain Qrs	In Money £	
B	1	5	1	6	4	1½	6	0	0	0%
C	1	5	1	6	6	1½	9	2	3	60%
D	1	5	1	6	8	1½	12	4	6	120%
Total	3	15	3	18	18		27	6	9	

TABLE IVa

Type of Soil	Acres	Capital £	Profit £	Price of Prod.	Output Qrs	Selling price per £	Proceeds £	Rent		Rate of Surplus profit
								In Grain Qrs	In Money £	
B	1	5	1	6	4	1½	6	0	0	0%
C	1	7½	1½	9	9	1½	13½	3	4½	60%
D	1	5	1	6	8	1½	12	4	6	120%*
Total	3	17½	3½	21	21		31½	7	10½	

In this case, compared with Table IV, the output from C has risen from 6 to 9 qrs, the surplusproduct from 2 to 3 qrs, and the money-rent from £3 to £4½. Compared with Table II, where the latter was £12, and Table I, where it was £6, the money-rent has, on the other hand, decreased. The total rental in grain = 7 qrs and has fallen compared with Table II (12 qrs) and risen compared with Table I (6 qrs); in money (£10½) it has fallen compared with both (£18 and £36). If the third investment of capital of £2½ had been employed on soil B, it would indeed have altered the quantity of production, but would not have affected the rent, since, according to our assumption, the successive investments do not produce any differences upon the same soil and soil B does not yield any rent.

If we assume, on the other hand, that the third investment of capital takes place upon D instead of C, we have the following, Table IVb:

TABLE IVb

Type of Soil	Acres	Capital £	Profit £	Price of Prod.	Output Qrs	Selling price per £	Proceeds £	Rent		Rate of Surplus profit
								In Grain Qrs	In Money £	
B	1	5	1	6	4	1½	6	0	0	0%
C	1	5	1	6	6	1½	9	2	3	60%
D	1	7½	1½	9	12	1½	18	6	9	120%
Total	3	17½	3½	21	22		33	8	12	

Here the total product is 22 qrs, more than double that of Table I, although the invested capital is only £17½ as against £10, that is, not twice the amount. The total product is also larger by 2 qrs than that of Table II, although the invested capital in the latter is larger – namely, £20. Compared with Table I, the rent in grain from soil D has increased from 3 [In the German 1894 edition this reads: 2. – Ed.] to 6 qrs, whereas the money-rent, £9, has remained the same. Compared with Table II, the grain-rent from D is the same, namely, 6 qrs, but the money-rent has fallen from £18 to £9.

Comparing the total rents, the grain-rent from Table IVb = 8 qrs is larger than that from Table I = 6 qrs and than that from Table IVa = 7 qrs; but it is smaller than that from Table II = 12 qrs. The money-rent from Table IVb = £12 is larger than that from Table IVa = £10½ and smaller than that from Table 1 = £18 and that from Table II = £36.

In order that the total rental may, under the conditions of Table IVb (with the elimination of rent from B), be equal to that of Table I, we need £6 more of surplus-product, that is, 4 qrs at £1½, which is the new price of production. We then have a total rental of £18 again as in Table I. The magnitude of the required additional capital will vary according to whether we invest it in C or D, or divide it between the two.

On C, £5 capital yields 2 qrs of surplus-product; consequently, £10 additional capital yields 4 qrs of additional surplus-product. On D, £5 additional capital would suffice to produce 4 qrs of additional grain-rent under the conditions assumed here, namely that the productivity of the additional investments of capital remains the same. We should then obtain the following results:

TABLE IVc

Type of Soil	Acres	Capital £	Profit £	Price of Prod.	Output Qrs	Selling price per £	Proceeds £	Rent		Rate of Surplus profit
								Qrs	£	
B	1	5	1	6	4	1½	6	0	0	0%
C	1	15	3	18	18	1½	27	6	9	60%
D	1	7½	1½	9	12	1½	18	6	9	120%
Total	3	27½	5½	33	34		51	12	18	

TABLE IVd

Type of Soil	Acres	Capital £	Profit £	Price of Prod.	Output Qrs	Selling price per £	Proceeds £	Rent		Rate of Surplus profit
								Qrs	£	
B	1	5	1	6	4	1½	6	0	0	0%
C	1	5	1	6	6	1½	9	2	3	60%
D	1	12½	2½	15	20	1½	30	10	15	120%
Total	3	22½	4½	27	30		45	12	18	

The total money rental would be exactly one-half of what it was in Table II, where the additional capitals were invested at constant prices of production. The most important thing is to compare the above tables with Table I.

We find that while the price of production has fallen by one-half, i.e., from 60 shillings to 30 shillings per quarter, the total money rental has remained the same, namely = £18, and the grainrent has correspondingly doubled from 6 to 12 qrs. Upon B the rent has disappeared; upon C the money-rent has risen by one-half in IVc, but has fallen by one-half in IVd; upon D in IVc, it has remained the same, = £9, and has risen from £9 to £15 in IVd. The production has risen from 10 to 34 qrs in IVc, and to 30 qrs in IVd; the profit from £2 to £5½ in IVc and to £4 in IVd. The total investment of capital has risen in the one case from £10 to £27½, and in the other from £10 to £22½; i.e., in both cases it has more than doubled. The rate of rent, that is, the rent calculated on the invested capital, is in all tables from IV to IVd everywhere the same for each kind of soil – which was already implied in the assumption that the rate of productivity for the two successive investments of capital remains the same for each soil type. But compared with Table I this rate has fallen, both for the average of all kinds of soil and for each one of them individually. In Table I it was = 180% on an average, whereas in IVc it = (18/27½) × 100 = 65 5/11% and in IVd it = (18/22½) × 100 = 80%. The average money-rent per acre has risen. Formerly, in Table I, its average was £4½ per acre from all four acres, whereas in IVc and IVd it is £6 per acre upon the three acres. Its average upon the rent-bearing land was formerly £6, whereas now it is £9 per acre. Hence the money-value of the rent per acre has risen and now represents twice as much grain as it did formerly; but the 12 qrs of grain-rent are now less than one-half of the total output of 34 and 30 [In the German 1894 edition this reads: 33 and 27. – Ed.] qrs respectively, whereas in Table I the 6 qrs represent 3/5 of the total output of 10 qrs. Consequently, although the rent as an aliquot part of the total output has fallen, and has also fallen when calculated on the invested capital, its money-value calculated per acre has risen, and still more its value as a product. If we take soil D in Table IVd, we find that the price of production corresponding to the capital outlay here = £15, of which £12½ is invested capital. The money-

rent = £15. In Table I, for the same soil D, the price of production was = £3, the invested capital = £2½, and the money-rent = £9; that is, the latter was three times the price of production and almost four times the capital. In Table IVd, the money-rent for D, £15, is exactly equal to the price of production and larger than the capital by only 1/5. Nevertheless, the money-rent per acre is $^2/_3$ larger, namely, £15 instead of £9. In Table I, the grain-rent of 3 qrs = ¾ of the total product of 4 qrs; in Table IVd it is 10 qrs, or one-half the total product (20 qrs) per acre of D. This shows that the money-value and grain value of the rent per acre may rise, although it constitutes a smaller aliquot part of the total yield and has fallen in proportion to the invested capital.

The value of the total product in Table I = £30; the rent = £18, or more than one-half of it. The value of the total product in IVd = £45, of which the rent = £18, or less than one-half.

II. Decreasing Rate of Productivity of the additional capital.

TABLE V

Type of Soil	Acres	Investment of Capital £	Profit £	Output Qrs	Selling price £	Proceeds £	Grain-Rent Qrs	Money-Rent £	Rate of Surplus Profit
B	1	2½ + 2½	1	2 + 1½ = 3½	1 5/7	6	0	0	0
C	1	2½ + 2½	1	3+2=5	1 5/7	8 4/7	1½	2 4/7	51 3/7%
D	1	2½ + 2½	1	4 + 3½ = 7½	1 5/7	12 6/7	4	6 6/7	137 1/7%
Total	3***	15		16		27 3/7	5½	9 3/7	94% average

TABLE Vi

Type of Soil	Acres	Capital £	Profit £	Price of Production £	Output Qrs	Selling price £	Proceeds £	Rent		Rate of Surplus Profit
								Qrs	£	
A	1	2½ + 2½ = 5	1	6	1 + 1 1/5 =2 1/5	2 8/11	6	0	0	0%
B	1	2½ + 2½ = 5	1	6	2 + 2 2/5 = 4 2/5	2 8/11	12	2 1/5	6	120%
C	1	2½ + 2½ = 5	1	6	3 + 3 3/5 = 6 3/5	2 8/11	18	4 2/5	12	240%
D	1	2½ + 2½ = 5	1	6	4 + 4 4/5 = 8 4/5	2 8/11	24	6 3/5	18	360%
	4	20	4	24	22		60	13 1/5	36	240%

TABLE VIa

Type of Soil	Acres	Capital £	Profit £	Output Per Acre Qrs	Selling price	Proceeds £	Grain-Rent Qrs	Money-Rent £
A	1	2½+2½	1	1+3=4	1½	6	0	0
B	1	2½ + 2½ = 5	1	2 + 2½ = 4½	1½	6¾	½	¾
C	1	2½ + 2½ = 5	1	3 + 5 = 8	1½	12	4	6
D	1	2½ + 2½ = 5	1	4 + 12 = 16	1½	24	12	18
Total	4	20		32½		16½	24¾	

CHAPTER 43

Differential Rent II.
Third Case: Rising Price of Production

[A rising price of production presupposes that the productivity of the poorest quality land yielding no rent decreases. The assumed regulating price of production cannot rise above £3 per quarter unless the £2½ invested in soil A produce less than 1 qr, or the £5 – less than 2 qrs, or unless an even poorer soil than A has to be taken under cultivation.

For constant, or even increasing, productivity of the second investment of capital this would only be possible if the productivity of the first investment of capital of ½ had decreased. This case occurs often enough. For instance, when with superficial ploughing the exhausted top soil yields ever smaller crops, under the old method of cultivation, and then the subsoil, turned up through deeper ploughing, produces better crops than before with more rational cultivation. But, strictly speaking, this special case does not apply here. The decrease in productivity of the first £2½ of invested capital signifies for the superior soils, even when the conditions are assumed to be analogous there, a decrease in differential rent I; yet here we are considering only differential rent II. But since this special case cannot occur without presupposing the existence of differential rent II, and represents in fact the reaction of a modification of differential rent I upon II, we shall give an illustration of it [see Table VII].

The money-rent and proceeds are the same as in Table II. The increased regulating price of production makes good what has been lost in quantity of produce; since this price and the quantity of produce are inversely proportional, it is evident that their mathematical product will remain the same.

TABLE VII

Type of Soil	Acres	Invested Capital £	Profit £	Price of Prod. £	Output Qrs	Sell- ing Price £	Pro- ceeds £	Grain- Rent Qrs	Money -Rent £	Rate of Rent
A	1	2½ + 2½	1	6	½ + 1¼ = 1¾	3 3/7	6	0	0	0%
B	1	2½ + 2½	1	6	1 + 2½ = 3½	3 3/7	12	1¾	6	120%
C	1	2½ + 2½	1	6	1½ + 3¾ = 5¼	3 3/7	18	3½	12	240%
D	1	2½ + 2½	1	6	2 + 5 = 7	3 3/7	24	5¼	18	360%
		20			17½		60	10½	36	240%

In the above case, it was assumed that the productiveness of the second investment of capital was greater than the original productivity of the first investment. Nothing changes if we assume the second investment to have only the same productivity as the first, as shown in the following table:

TABLE VII

Type of Soil	Acres	Capital £	Profit £	Price of Production £	Output Qrs	Selling price £	Proceeds £	Rent		Rate of Surplus Profit
								Qrs	£	
A	1	2½ + 2½ = 5	1	6	½ + 1½ = 2½	4	6	0	0	0%
B	1	2½ + 2½ = 5	1	6	1 + 2 = 3	4	12	1½	6	120%
C	1	2½ + 2½ = 5	1	6	1½ + 3 = 4½	4	18	3	12	240%
D	1	2½ + 2½ = 5	1	6	2 + 4 = 6	4	24	4½	18	360%
		20			15		60	9	36	240%

Here, too, the price of production rising at the same rate compensates in full for the decrease in productivity in the case of yield as well as money-rent.

The third case appears in its pure form only when the productivity of the second investment of capital declines, while that of the first remains constant – which was always assumed in the first and second cases. Here differential rent I is not affected, i.e., the change affects only that part which arises from differential rent II. We shall give two illustrations: in the first we assume that the productivity of the second investment of capital has been reduced to ½, in the second to ¾.

TABLE IX

Type of Soil	Acres	Invested Capital £	Profit £	Price of Production £	Output Qrs	Selling price £	Proceeds £	Rent		Rate of Rent
								In grain Qrs	In Money£	
A	1	2½ + 2½ = 5	1	6	1 + ½ = 1½	4	6	0	0	0
B	1	2½ + 2½ = 5	1	6	2 + 1 = 3	4	12	1½	6	120%
C	1	2½ + 2½ = 5	1	6	3 + 1½ = 4½	4	18	3	12	240%
D	1	2½ + 2½ = 5	1	6	4 + 2 = 6	4	24	4½	18	360%
		20			15		60	9	36	240%

Table IX is the same as Table VIII, except for the fact that the decrease in productivity in VIII occurs for the first, and in IX for the second investment of capital.

TABLE X

Type of Soil	Acres	Invested Capital £	Profit £	Price of Production £	Output Qrs	Selling price £	Proceeds £	Rent		Rate of Rent
								In grain Qrs	In Money£	
A	1	2½ + 2½ = 5	1	6	1 + ½ = 1½	4	6	0	0	0
B	1	2½ + 2½ = 5	1	6	2 + 1 = 3	4	12	1½	6	120%
C	1	2½ + 2½ = 5	1	6	3 + 1½ = 4½	4	18	3	12	240%
D	1	2½ + 2½ = 5	1	6	4 + 2 = 6	4	24	4½	18	360%
		20			15		60	9	36	240%

In this table, too, the total proceeds, the money-rent and rate of rent remain the same as in tables II, VII and VIII, because produce and selling price are again inversely proportional, while the invested capital remains the same.

But how do matters stand in the other possible case when the price of production rises, namely, in the case of a poor quality soil not worth cultivating until then that is taken under cultivation? Let us suppose that a soil of this sort, which we shall designate by a, enters into competition. Then the hitherto rentless soil A would yield rent, and the foregoing tables VII, VIII and X would assume the following forms:

TABLE VIIa

Type of Soil	Acres	Invested Capital £	Profit £	Price of Production £	Output Qrs	Selling price £	Proceeds £	Rent		Increase
								In grain Qrs	In Money£	
a	1	5	1	6	1½	4	6	0	0	0
A	1	2½ + 2½	1	6	½ + 1¼ = 1¾	4	7	¼	1	1
B	1	2½ + 2½	1	6	1 + 2½ = 3½	4	14	2	8	1 + 7
C	1	2½ + 2½	1	6	1½ + 3¾ = 5¼	4	21	3¾	15	1 + 2 × 7
D	1	2½ + 2½	1	6	2 + 5 = 7	4	28	5½	22	1 + 3 × 7
				30	19		76	11½	46	

TABLE VIIIa

Type of Soil	Acres	Invested Capital £	Profit £	Price of Production£	OutputQrs	Selling price £	Proceeds £	Rent		Increase
								In grrain Qrs	In Money£	
a	1	5	1	6	1¼	4 4/5	6	0	0	0
A	1	2½ + 2½	1	6	½ + 1 = 1½	4 4/5	7 1/5	¼	1 1/5	1 1/5
B	1	2½ + 2½	1	6	1 + 2 = 3	4 4/5	14 2/5	1¾	8 2/5	1 1/5 + 7 1/5
C	1	2½ + 2½	1	6	1½ + 3 = 4½	4 4/5	21 3/5	3¼*	15 3/5	1 1/5 + 2 × 7 1/5
D	1	2½ + 2½	1	6	2 + 4 = 6	4 4/5	28 4/5	4¾	22 4/5	1 1/5 + 3 × 7 1/5
	5			30	16¼		78	10**	48	

TABLE Xa

Type of Soil	Acres	Invested Capital £	Profit £	Price of Production£	OutputQrs	Selling price £	Proceeds £	Rent		Increase
								In grrain Qrs	In Money£	
a	1	5	1	6	1 1/8	5 1/3	6	0	0	0
A	1	2½ + 2½	1	6	1 + ¼ = 1¼	5 1/3	6 2/3	2/3	2/3	1 1/5
B	1	2½ + 2½	1	6	2 + ½ = 2½	5 1/3	13 1/3	1 3/8	7 1/3	2/3 + 6 2/3
C	1	2½ + 2½	1	6	3 + ¾ = 3¾	5 1/3	20	2 5/8	14	2/3 + 2 × 6 2/3
D	1	2½ + 2½	1	6	4 + 1 = 5	5 1/3	26 2/3	3 7/8	20 2/3	2/3 + 3 × 6 2/3
				30	13 5/8		72 2/3	8	42 2/3	

By interpolating soil a there arises a new differential rent I; upon this new basis, differential rent II likewise develops in an altered form. Soil a has different fertility in each of the above three tables; the sequence of proportionally increasing fertilities begins only with soil A. The sequence of rising rents also behaves similarly. The rent of the worst rent-bearing soil, previously rentless, is a constant which is simply added to all higher rents. Only after deducting this constant does the sequence of differences clearly become evident for the higher rents, and similarly its parallel in the fertility sequence of the different soils. In all the tables, the fertilities from A to D are related as 1 : 2 : 3 : 4, and correspondingly the rents:

in VIIa, as 1 : (1 + 7) : (1 + 2 × 7) : (1 + 3 × 7),
in VIIIa, as 1 1/5 : (1 1/5 + 7 1/5) : (1 1/5 + 2 × 7 1/5) : (1 1/5 + 3 × 7 1/5),
and in Xa, as $^2/_3$: ($^2/_3$ + 6 $^2/_3$) : ($^2/_3$ + 2 × 6 $^2/_3$) : ($^2/_3$ + 3 × 6 $^2/_3$).

In brief, if the rent from A = n, and the rent from the soil of next higher fertility = n + m, then the sequence is as follows: n : (n + m) : (n + 2m) : (n + 3m), etc. – F. E.]

[Since the foregoing third case had not been elaborated in the manuscript – only the title is there – it was the task of the editor to fill in the gap, as above, to the best of his ability. However, in addition, it still remains for him to draw the general conclusions from the entire foregoing analysis of differential rent II, consisting of three principal cases and nine subcases. The illustrations presented in the manuscript, however, do not suit this purpose very well. In the first place, they compare plots of land whose yields for equal areas are related as 1 : 2 : 3 : 4; i.e., differences, which exaggerate greatly from the very first, and which lead to utterly monstrous numerical values in the further development of the assumptions and calculations made upon this basis. Secondly, they create a completely erroneous impression. If for degrees of fertility related as 1 : 2 : 3 : 4, etc., rents are obtained in the sequence 0 : 1 : 2 : 3, etc., one feels tempted to derive the second sequence from the first, and to explain the doubling, tripling, etc., of rents by the doubling, tripling, etc., of the total yields. But this would be wholly incorrect. The rents are related as 0 : 1 : 2 : 3 : 4 even when the degrees of fertility are related as n : (n + 1) : (n + 2) : (n + 3) : (n + 4). The rents are not related as the *degrees* of fertility, but as the *differences* of fertility – beginning with the rentless soil as the zero point.

The original tables had to be offered to illustrate the text. But in order to obtain a perceptual basis for the following results of the investigation, I present below a new series of tables in which the yields are indicated in bushels (1/8 quarter, or 36.35 litres) and shillings (= marks).

The first of these, Table XI, corresponds to the former Table I. It shows the yields and rents for soils of five different qualities, A to E, with a first capital investment of 50 shillings, which added to 10 shillings profit = 60 shillings total price of production per acre. The yields in grain are made low: 10, 12, 14, 16, 18 bushels per acre. The resulting regulating price of production is 6 shillings per bushel.

The following 13 tables correspond to the three cases of differential rent II treated in this and the two preceding chapters with an additional invested capital of 50 shillings per acre in the same soil with constant, falling and rising prices of production. Each of these cases, in turn, is presented as it takes shape for:

1) constant, 2) falling, and 3) rising productivity of the second investment of capital in relation to the first. This yields a few other variants, which are especially useful for illustration purposes.

For case I: Constant price of production – we have:

Variant 1:	Productivity of the second investment of capital remains the same (Table XII).
Variant 2:	Productivity declines. This can take place only when no second investment of capital is made in soil A, i.e., in such a way that a) soil B likewise yields no rent (Table XIII) or b) soil B does not become completely rentless (Table XIV).
Variant 3:	Productivity increases (Table XV). This case likewise excludes a second investment of capital in soil A.

For case II: Falling price of production – we have:

Variant 1:	Productivity of the second investment of capital remains the same (Table XVI).
– " – 2:	Productivity declines (Table XVII). These two variants require that soil A be eliminated from competition, and that soil B become rentless and regulate the price of production.
– " – 3:	Productivity increases (Table XVIII). Here Soil A remains the regulator.

For case III: Rising price of production – two eventualities are possible: soil A may remain rentless and continue to regulate the price, or poorer soil than A enters into competition and regulates the price, in which case A yields rent.

First eventuality: Soil A remains the regulator.

Variant 1:	Productivity of the second investment remains the same (Table XIX). This is admissible under the conditions assumed by us, provided the productivity of the first investment decreases.
– " – 2:	Productivity of the second investment decreases (Table XX). This does not exclude the possibility that the first investment may retain the same productivity.
– " – 3:	Productivity of the second investment increases (Table XXI [In the German 1894 edition this reads: XIX. – *Ed.*]). This, again, presupposes falling productivity of the first investment.

Second eventuality: An inferior quality soil (designated as a) enters into competition; soil A yields rent.

Variant 1:	Productivity of the second investment remains the same (Table XXII).
Variant 2:	Productivity declines (Table XXIII).
– " – 3:	Productivity increases (Table XXIV).

These three variants conform to the general conditions of the problem and require no furthercomment.

The tables now follow:

TABLE XI

Type of Soil	Price of Production Sh.	Output Bushels	Selling Price Sh.	Proceeds Sh.	Rent Sh.	Rent Increase
A	60	10	6	60	0	0
B	60	12	6	72	12	12
C	60	14	6	84	24	2 × 12
D	60	16	6	96	36	3 × 12
E	60	18	6	108	48	4 × 12
					120	10 × 12

For second capital invested in the same soil:
First Case: Price of production remains unaltered.
Variant 1: Productivity of the second investment of capital remains the same.

TABLE XII

Type of Soil	Price of Production Sh.	Output Bushels	Selling Price Sh.	Proceeds Sh.	Rent Sh.	Rent Increase
A	60 + 60 = 120	10 + 10 = 20	6	120	0	0
B	60 + 60 = 120	12 + 12 = 24	6	144	24	24
C	60 + 60 = 120	14 + 14 = 28	6	168	48	2 × 24
D	60 + 60 = 120	16 + 16 = 32	6	192	72	3 × 24
E	60 + 60 = 120	18 + 18 = 36	6	216	96	4 × 24
					240	10 × 24

Variant 2: Productivity of the second investment of capital declines; no second investment in soil A.
1) Soil B ceases to yield rent.

TABLE XIII

Type of Soil	Price of Production Sh.	Output Bushels	Selling Price Sh.	Proceeds Sh.	Rent Sh.	Rent Increase
A	60	10	6	60	0	0
B	60 + 60 = 120	12 + 8 = 20	6	120	0	0
C	60 + 60 = 120	$14 + 9\ ^{1}/_{3} = 23\ ^{1}/_{3}$	6	140	20	20
D	60 + 60 = 120	$16 + 10\ ^{2}/_{3} = 26\ ^{2}/_{3}$	6	160	40	2 × 20
E	60 + 60 = 120	18 + 12 = 30	6	180	60	3 × 20
					120	6 × 20

2) Soil B does not become completely rentless.

TABLE XIV

Type of Soil	Price of Production Sh.	Output Bushels	Selling Price Sh.	Proceeds Sh.	Rent Sh.	Rent Increase
A	60	10	6	60	0	0
B	60 + 60 = 120	12 + 9 = 21	6	126	6	6
C	60 + 60 = 120	14 + 10½ = 24½	6	147	27	6 + 21
D	60 + 60 = 120	16 + 12 = 28	6	168	48	6 + 2 × 21
E	60 + 60 = 120	18 + 13½ = 31½	6	189	69	6 + 3 × 21
					150	4 × 6 + 6 × 21

Variant 3: Productivity of the second investment of capital increases; here, too, no second investment in Soil A.

TABLE XV

Type of Soil	Price of Production Sh.	Output Bushels	Selling Price Sh.	Proceeds Sh.	Rent Sh.	Rent Increase
A	60	10	6	60	0	0
B	60 + 60 = 120	12 + 15 = 27	6	162	42	42
C	60 + 60 = 120	14 + 17½ = 31½	6	189	69	42 + 27
D	60 + 60 = 120	16 + 20 = 36	6	216	96	42 + 2 × 27
E	60 + 60 = 120	18 + 22½ = 40½	6	243	123	42 + 3 × 27
					330	4 × 42 + 6 × 27

Second Case: Price of production declines.
Variant 1: Productivity of the second investment of capital remains the same. Soil A is excluded from competition and soil B becomes rentless.

TABLE XVI

Type of Soil	Price of Production Sh.	Output Bushels	Selling Price Sh.	Proceeds Sh.	Rent Sh.	Rent Increase
B	60 + 60 = 120	12 + 12 = 24	5	120	0	0
C	60 + 60 = 120	14 + 14 = 28	5	140	20	20
D	60 + 60 = 120	16 + 16 = 32	5	160	40	2 × 20
E	60 + 60 = 120	18 + 18 = 36	5	180	60	3 × 20
					120	6 × 20

Variant 2: Productivity of the second investment of capital declines; soil A is excluded from competition and soil B becomes rentless.

TABLE XVII

Type of Soil	Price of Production Sh.	Output Bushels	Selling Price Sh.	Proceeds Sh.	Rent Sh.	Rent Increase
B	60 + 60 = 120	12 + 9 = 21	5 5/7	120	0	0
C	60 + 60 = 120	14 + 10½ = 24½	5 5/7	140	20	20
D	60 + 60 = 120	16 + 12 = 28	5 5/7	160	40	2 × 20
E	60 + 60 = 120	18 + 13½ = 31½	5 5/7	180	60	3 × 20
					120	6 × 20

Variant 3: Productivity of the second investment of capital increases; soil A remains in competition; soil B yields rent.

TABLE XVIII

Type of Soil	Price of Production Sh.	Output Bushels	Selling Price Sh.	Proceeds Sh.	Rent Sh.	Rent Increase
A	60 + 60 = 120	10 + 15 = 25	4 4/5	120	0	0
B	60 + 60 = 120	12 + 18 = 30	4 4/5	144	24	24
C	60 + 60 = 120	14 + 21 = 35	4 4/5	168	48	2 × 24
D	60 + 60 = 120	16 + 24 = 46	4 4/5	192	72	3 × 24
E	60 + 60 = 120	18 + 27 = 45	4 4/5	216	96	4 × 24
					240	10 × 24

Case: Price of production rises.
A) Soil A remains rentless and continues to regulate the price.
Variant 1: Productivity of the second investment of capital remains the same: this requires decreasing productivity of the first investment of capital.

TABLE XIX

Type of Soil	Price of Production Sh.	Output Bushels	Selling Price Sh.	Proceeds Sh.	Rent Sh.	Rent Increase
A	60 + 60 = 120	7½ + 10 = 17½	6 6/7	120	0	0
B	60 + 60 = 120	9 + 12 = 21	6 6/7	144	24	24
C	60 + 60 = 120	10½ + 14 = 24½	6 6/7	168	48	2 × 24
D	60 + 60 = 120	12 + 16 = 28	6 6/7	192	72	3 × 24
E	60 + 60 = 120	13½ + 18 = 31½	6 6/7	216	96	4 × 24
					240	10 × 24

Variant 2: Productivity of the second investment of capital decreases; which does not exclude constant productivity of the first investment.

TABLE XXI

Type of Soil	Price of Production Sh.	Output Bushels	Selling Price Sh.	Proceeds Sh.	Rent Sh.	Rent Increase
A	60 + 60 = 120	5 + 12½ = 17½	6 6/7	120	0	0
B	60 + 60 = 120	6 + 15 = 21	6 6/7	144	24	24
C	60 + 60 = 120	7 + 17½ = 24½	6 6/7	168	48	2 × 24
D	60 + 60 = 120	8 + 20 = 28	6 6/7	192	72	3 × 24
E	60 + 60 = 120	9 + 22½ = 31½	6 6/7	216	96	4 × 24
					240	10 × 24

B) An inferior soil (designated as a) becomes the price regulator and soil A thus yields rent. This makes admissible for all variants constant productivity of the second investment.
Variant 1: Productivity of the second investment of capital remains the same.

TABLE XXII

Type of Soil	Price of Production Sh.	Output Bushels	Selling Price Sh.	Proceeds Sh.	Rent Sh.	Rent Increase
a	120	16	7½	120	0	0
A	60 + 60 = 120	10 + 10 = 20	7½	150	30	30
B	60 + 60 = 120	12 + 12 = 24	7½	180	60	2 × 30
C	60 + 60 = 120	14 + 14 = 28	7½	210	90	3 × 30
D	60 + 60 = 120	16 + 16 = 32	7½	240	120	4 × 30
E	60 + 60 = 120	18 + 18 = 36	7½	270	150	5 × 30
					450	15 × 30

Variant 2: Productivity of the second investment of capital declines.

TABLE XXIII

Type of Soil	Price of Production Sh.	Output Bushels	Selling Price Sh.	Proceeds Sh.	Rent Sh.	Rent Increase
A	120	15	8	120	0	0
A	60 + 60 = 120	10 + 7½ = 17½	8	140	20	20
B	60 + 60 = 120	12 + 9 = 21	8	168	48	20 + 28
C	60 + 60 = 120	14 + 10½ = 24½	8	196	76	20 + 2 × 28
D	60 + 60 = 120	16 + 12 = 28	8	224	104	20 + 3 × 28
E	60 + 60 = 120	18 + 13½ = 31½	8	252	132	20 + 4 × 28
					380	5 × 20 + 10 × 28

Variant 3: Productivity of the second investment increases.

TABLE XXIV

Type of Soil	Price of Production Sh.	Output Bushels	Selling Price Sh.	Proceeds Sh.	Rent Sh.	Rent Increase
A	120	16	7½	120	0	0
A	60 + 60 = 120	10 + 12½ = 21½	7½	168¾	48¾	15 + 33¾
B	60 + 60 = 120	12 + 15 = 27	7½	202½	82½	15 + 2 × 33¾
C	60 + 60 = 120	14 + 17½ = 31½	7½	236¼	116¼	15 + 3 × 33¾
D	60 + 60 = 120	16 + 20 = 36	7½	270	150	15 + 4 × 33¾
E	60 + 60 = 120	18 + 22½ = 40½	7½	303¾	183¾	15 + 5 × 33¾
					581¼	5 × 15 + 15 × 33¾

These tables lead to the following conclusions:

In the first place, the sequence of rents behaves exactly as the sequence of fertility differences – taking the rentless regulating soil as the zero point. It is not the absolute yield, but only the differences in yield which are the factors determining rent. Whether the various soils yield 1, 2, 3, 4, 5 bushels, or whether they yield 11, 12, 13, 14, 15 bushels per acre, the rents in both cases form the sequence 0, 1, 2, 3, 4 bushels, or their equivalent in money.

But far more important is the result with respect to the total rent yields for repeated investment of capital in the same land.

In five out of the thirteen analysed cases, the total rent doubles when the investment of capital is doubled; instead of l0x12 shillings it becomes 10 × 24 shillings = 240 shillings. These cases are:

Case I, constant price, variant 1: constant production rise (Table XII).
Case II, falling price, variant 3: increasing production rise (Table XVIII).
Case III, increasing price, first eventuality (where soil A remains the regulator), in all three variants (tables XIX, XX and XXI).

In four cases the rent more than doubles, namely

Case I, variant 3, constant price, but increasing production rise (Table XV) The total rent climbs to 330 shillings.
Case III, second eventuality (where soil A yields rent), in all three variants (Table XXII, rent = 15 × 30 = 450 shillings; Table XXIII, rent = 5 × 20 + 10 × 28 = 380 shillings; Table XXIV, rent = 5 × 15 + 15 × 33¾ = 581¼ shillings).

In one case the rent rises, but not to twice the amount yielded by the first investment of capital:
Case I, constant price, variant 2: falling productivity of the second investment, under conditions whereby B does not become completely rentless (Table XIV, rent = 4 × 6 + 6 × 21 = 150 shillings).

Finally, only in three cases does the total rent remain at the same level with a second investment – for all soils taken together – as with the first investment (Table XI); these are the cases in which soil A is excluded from competition and B becomes the regulator and thereby rentless soil. Thus, the rent for B not only vanishes but is also deducted from every succeeding term of the rent sequence; the result is thus determined. These cases are:

Case I, variant 2, when the conditions are such that soil A is excluded (Table XIII). The total rent is 6 × 20, or 10 × 12 = 120, as in Table XI.
Case II, variants I and 2. Here soil A is necessarily excluded in accordance with the assumptions (tables XVI and XVII) and the total rent is again 6 × 20 = 10 × 12 = 120 shillings.

Please refer to Table III, Chapter 41 for the following example of the formation of surplus-profit

Soil B yields for the first invested capital of £2½ – 2 quarters per acre, and for the second investment of equal magnitude – 1½ quarters; together – 3½ quarters from the same acre. It is not possible to distinguish which part of these 3½ quarters is a product of invested capital I and which part a product of invested capital II, for it is all grown upon the same soil. In fact, the 3½ quarters is the yield from the total capital of £5; and the actual fact of the matter is simply this: a capital of £2½ yielded 2 quarters, and a capital of £5 yielded 3½ quarters rather than 4 quarters. The situation would be just the same if the £5 yielded 4 quarters, i.e., if the yield from both investments of capital were equal; similarly, if the yield were even 5 quarters, i.e., if the second investment of capital were to yield a surplus of 1 quarter. The price of production of the first 2 quarters is £1½ per quarter, and that of the second 1½ quarters is £2 per quarter. Consequently

the 3½ quarters together cost £6. This is the individual price of production of the total product, and, on the average, amounts to £1 14 2/7 sh. per quarter, i.e., approximately £1¾. With the general price of production determined by soil A, namely £3, this results in a surplus-profit of £1¼ per quarter, and thus for the 3½ quarters, a total of £4 3/8. At the average price of production of B this corresponds to about 1½ quarters. In other words, the surplus-profit from B is represented by an aliquot portion of the output from B, i.e., by the 1½ quarters, which express the rent in terms of grain, and which sell – in accordance with the general price of production – for £4½. But on the other hand, the excess product from an acre of B over that from an acre of A does not automatically represent surplus-profit, and thereby surplus-product. According to our assumption, an acre of B yields 3½ quarters, whereas an acre of A yields only 1 quarter. Excess product from B is, therefore, 2½ quarters but the surplus-product is only 1½ quarters; for the capital invested in B is twice that invested in A, and thus its price of production is double. If an investment of £5 were also to take place in A, and the rate of productivity were to remain the same, then the output would be 2 quarters instead of 1 quarter, and it would then be seen that the actual surplus-product is determined by comparing 3½ with 2, not 3½ with 1; i.e., it is only 1½ quarters, not 2½ quarters. Furthermore, if a third investment of capital, amounting to £2½, were made in B, and this were to yield only 1 quarter – this quarter would then cost £3 as in A – its selling price of £3 would only cover the price of production, would provide only the average profit, but no surplus-profit, and would thus yield nothing that could be transformed into rent. The comparison of the output per acre from any given soil type with the output per acre from soil A does not show whether it is the output from an equal or from a larger investment of capital, nor whether the additional output only covers the price of production or is due to greater productivity of the additional capital.

Supplementary Investments

Let us assume that soil B produced:

1) 3½ quarters whose price of production is, as before, £6, i.e., two investments of capital amounting to £2½ each both yielding surplus-profit, but of decreasing amount.
2) 1 quarter at £3, an investment of capital in which the individual price of production is equal to the regulating price of production.
3) 1 quarter at £4, an investment of capital in which the individual price of production is higher by 33% than the regulating price.

We should then have 5½ quarters per acre for £13 with an investment of a capital of £10 7/10; this is four times the original invested capital, but not quite three times the output of the first investment of capital.

5½ quarters at £13 gives an average price of production of £2 4/11 per quarter, i.e., an excess of £7/11 per quarter, assuming the regulating price of production of £3. This excess may be transformed into rent. 5½ quarters sold at the regulating price of production of £3 yield £16½. After deducting the production price of £13, a surplus-profit, or rent, of £3½ remains, which, calculated at the present average price of production per quarter of B, that is, at £24/11 per quarter, represents 1 25/52 quarters. The money-rent would be lower by £1 and the grain-rent by about ½ quarter, but in spite of the fact that the fourth additional investment of capital in B not only fails to yield surplus-profit, but yields less than the average profit, surplus-profit, and rent still continue to exist. Let us assume that, in addition to investment 3), investment 2) also produces at a price exceeding the regulating price of production. Then the total production is: 3½ quarters for £6 + 2 quarters for £8; total 5½ quarters for £14 production price. The average price of production per quarter would be £2 6/11 and would leave an excess of £5/11. The 5½ quarters, sold at £3, give a total of £16½; deducting the £14 production price leaves £2½ for rent. At the present average price of production upon B, this would be equivalent to 55/56 of a quarter. In other words, rent is still yielded although less than before.

This shows, at any rate, that with additional investments of capital in the better soils whose output costs more than the regulating price of production the rent does not disappear – at least not within the bounds of admissible practice – although it must decrease. It will decrease in proportion, on the one hand, to the aliquot part formed by this less productive capital in the total investment of capital, and on the other hand, in proportion to the decrease in its productiveness. The average price of its produce would still lie below the regulating price and would thus still permit surplus-profit to be formed that could be transformed into rent.

Let us now assume that, as a result of four successive investments of capital (£2½, £2½, £5 and £5) with decreasing productivity, the average price per quarter of B coincides with the general price of production.

Capital £		Profit £	Output Qrs	Price of Production		Selling Price £	Proceeds £	Surplus for Rent	
				Per Qr £	Total £			Qrs	£
1)	2½	½	2	1½	3	3	6	1	3
2)	2½	½	1½	2	3	3	4½	½	1½
3)	5	1	1½	4	6	3	4½	-½	-1½
4)	5	1	1	6	6	3	3	-1	-3
	15	3	6		18		18	0	0

The farmer, in this case, sells every quarter at its individual price of production, and consequently the total number of quarters at their average price of production per quarter, which coincides with the regulating price of £3. Hence he still makes a profit of 20% = £3 upon his capital of £15. But the rent is gone. What has become of the excess in this equalisation of the individual prices of production per quarter with the general price of production?

The surplus-profit from the first £2½ was £3, from the second £2½ it was £1½; total surplus-profit from $^1/_3$ of the invested capital, that is, from £5 = £4½ = 90%.

In the case of investment 3), the £5 not only fails to yield surplus-profit, but its output of 1½ quarters, sold at the general price of production, gives a deficit of £1½. Finally, in the case of investment 4), which likewise amounts to £5 its output of I quarter, sold at the general price of production, gives a deficit of £3. Both investments of capital together thus give a deficit of £4½, which is equal to the surplus-profit of £4½, realised from investments 4) and 2).

The surplus-profit and deficit balance out. Therefore the rent disappears. In fact, this is possible only because the elements of surplus-value, which formed surplus-profit or rent, now enter into the formation of the average profit. The farmers makes this average profit of £3 on £15, or 20%, at the expense of the rent.

The equalisation of the individual average price of production of B to the general price of production of A, which regulates the market-price, presupposes that the difference of the individual price of the produce from the first investments of capital below the regulating price is more and more compensated and finally balanced out by the difference of the price of the produce from the subsequent investments of capital above the regulating price. What appears as surplusprofit, so long as the produce from the first investments of capital is sold by itself, thus gradually becomes part of its average price of production, and thereby enters into the formation of the average profit, until it is finally completely absorbed by it.

If only £5 are invested in B instead of £15 and the additional 2½ quarters of the last table are produced by taking 2½ new acres of A under cultivation with an investment of £2½ per acre, then the additional invested capital would amount to only £6¼, i.e., the total investment in A and B for the production of these 6 quarters would be only £11¼, instead of £15, and their total price of production, including profit, £13½. The 6 quarters would still be sold for £18, but the investment of capital would have decreased by £3¾, and the rent from B would be £4½ per acre, as before. It would be different if the production of the additional 2½ quarters required that a soil inferior to A, for instance, A-1 and A-2, be taken under cultivation; so that the price of production per quarter would be: for 1½ quarters on soil A-1 = £4, and for the last quarter on soil A-2 = £6. In this case, £6 would be the regulating price of production per quarter. The 3½ quarters from B would then be sold for £21 instead of £10½, which would mean a rent of £15 instead of £4½, or, a rent in grain of 2½ quarters instead of 1½ quarters. Similarly, a quarter on A would now yield a rent of £3 = ½ quarter.

Before discussing this point further, another observation:

The average price of a quarter from B is equalised, i.e., coincides with the general production price of £3 per quarter, regulated by A, as soon as that portion of the total capital which produces the excess of 1½ quarters is balanced by that portion of the total capital which produces the deficit of 1½ quarters. How soon this equalisation is effected, or how much capital with under productiveness must be invested in B for this purpose, will depend, assuming the surplus productivity of the first investments of capital to be given, upon the relative under-productiveness of the later investments compared with an investment of the same amount in the worst, regulating soil A, or upon the individual price of production of their produce, compared with the regulating price.

The following conclusions can now be drawn from the foregoing:

First: So long as the additional capitals are invested in the same land with surplus-productivity, even if the surplus-productivity is decreasing, the absolute rent per acre in grain and money increases, although it decreases relatively, in proportion to the advanced capital (in other words, the rate of surplus-profit or rent). The limit is established here by that additional capital which yields only the average profit, or for whose produce the individual price of production coincides with the general price of production. The price of production remains the same under these circumstances, unless the production from the poorer soils becomes superfluous as a result of increased supply. Even when the price is falling, these additional capitals may within certain limits still produce surplus-profit, though less of it.

Secondly: The investment of additional capital yielding only the average profit, whose surplusproductivity therefore = 0, does not alter in any way the amount of the existing surplus-profit, and consequently of rent. The individual average price per quarter increases thereby upon the superior soils; the excess per quarter decreases, but the number of quarters which contain this decreased excess increases, so that the mathematical product remains the same.

Thirdly: Additional investments of capital, the produce of which has an individual price of production exceeding the regulating price – the surplus-productivity is therefore not merely = 0, but less than zero, or a negative quantity, that is, less than the productivity of an equal investment of capital in the regulating soil A – bring the individual average price of production of the total output from the superior soil closer and closer to the general price of production, i.e., reduce more and more the difference between them which constitutes the surplus-profit, or rent. An increasingly greater part of what constituted surplus-profit or rent enters into the formation of the average profit. But nevertheless, the total capital invested in an acre of B continues to yield surplus-profit, although the latter decreases as the amount of capital with under-productiveness increases and to the extent of this under-productiveness. The rent, with increasing capital and increasing production, in this case decreases absolutely per acre, not merely relatively with reference to the increasing magnitude of the invested capital, as in the second case.

CHAPTER 44

Differential Rent Also on the Worst Cultivated Soil

Type of Soil	Acres	Price of Production £	Output Qrs	Selling Price £	Proceeds £	Grain-Rent Qrs	Money-Rent £
A	1	3	1	3	3	0	0
B	1	6	3½	3	10½	1½	4½
C	1	6	5½	3	16½	3½	10½
D	1	6	7½	3	22½	5½	16½
Total	4	21	17½		52½	10½	31½

This is the state of affairs before the new capital of £3½, which yields only one quarter, is invested in B. After this investment, the situation looks as follows:

Type of Soil	Acres	Price of Production £	Output Qrs	Selling Price £	Proceeds £	Grain-Rent Qrs	Money-Rent £
A	1	3	1	3½	3½	1/7	½
B	1	9½	4½	3½	15¾	1 11/14	6¼
C	1	6	5½	3½	19¼	3 11/14	13¼
D	1	6	7½	3½	26¼	5 11/14	20¼
Total	4	24½	18½		64¾	11½	40¼

[This, again, is not quite correctly calculated. First of all, the cost of the 4½ qrs for farmer B is, in the first place, £9½: in price of production and, secondly, £4½ in rent, i.e., a total of £14; average per quarter = £3½. This average price of his total production thus becomes the regulating marketprice. Thus, the rent on A would amount to £1/9 instead of £½, and that on B would remain £4½ as heretofore; 4½ qrs at £3½ = £14 and, if we deduct £9½ in price of production, £4½ remain for surplus-profit. We see, then, that in spite of the required change in numerical values this illustration shows how, by means of differential rent II, better soil, already yielding rent, may regulate the price and thus transform *all* soil, even hitherto rentless, into rent-bearing soil. – *F. E.*]