Michal Kalecki,

Selected Essays on the Dynamics of the Capitalist Economy 1933-70

Cambridge at the University Press, 1971

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vii This volume of my selected essays includes what I consider my main contributions to the theory of the dynamics of the capitalist economy published over the thirty-seven years 1933-70.

I. Outline of a Theory of the Business Cycle, (1933)

1: We shall consider a closed economic system, devoid of trends, i. e., one which returns to its original stage after each cycle. In addition we shall make the following assumptions.

1. Gross real profits. By gross real profits P we understand the aggregate real income of capitalists including depreciation per unit of time consisting of their consumption and saving

$$P = C + A \qquad (1.1)$$

Thus C denotes all goods which are consumed by capitalists and A includes -- since we abstract from workers' savings or their 'capitalist' incomes -- all goods which are used in the reproduction and expansion of fixed capital as well as the increase in inventories. In the future A will be referred to as gross accumulation.*

The personal consumption of capitalists is relatively inelastic. Let us assume that C consists of a constant part Bo and a part which is proportionate to gross profits:

$$C = Bo + kP \qquad (1.2)$$

* The national income is equal on the one hand to the sum of profits and wages and on the other to the sum of: (1) the reproduction and expansion of fixed capital and the increase in inventories A; (2) the consumption of capitalists; and (3) the consumption of workers. Since the latter are equal to wages, profits are equal to $C + A$.

where k is a small constant.

2: From equations (1) and (2) we obtain:

$$P = Bo + kP + A$$

$$P = (Bo + A)/(1 - k) \qquad (1.3)$$

i. e., the gross real profits P are proportionate to the sum $Bo + A$ of the constant part of capitalists' consumption and the gross accumulation.

12: the common conviction that the more is consumed the less is saved. This approach, which is correct with regard to a single capitalist, does not apply to the capitalist class as a whole. If some capitalists spend money, either on investment or consumer goods, their money passes to other capitalists in the form of profits. Investment or consumption of some capitalists creates profits for others. Capitalists as a class gain exactly as much as they invest or consume, and if -- in a closed system --they ceased to construct and consume they could not make any money at all.

13 Thus capitalists, as a whole, determine their own profits by the extent of their investment and personal consumption. In a way they are 'masters of their fate'; but how they 'master' it is determined by objective factors, so that fluctuations of profits appear after 11 to be unavoidable....

If we abstract from the 'technical' elements of the money market, we may say that capitalists as a whole do not need money in ordwr to achieve this (increase of production) since, as shown above, the expenditure of some capitalists is converted into profits for others; the outlay on construction of a fixed asset is by no means 'frozen', as some people think, and 'released' only as the capital invested is gradually written off -- but it is already returned in the course of construction in the form of profits accruing to the firms whose s ales (either of investment or of consumer goods) are directly or indirectly connected with this construction...

2. On foreign trade and 'domestic exports.' (1934) pp. 15-25

15 Capturing a new foreign market is frequently mentioned as a way out of a depression. But it is usually not added that what is essential in this context is an increase in the export surplus rather than in absolute exports.

In fact, aggregate ~~x~~ profits are equal to capitalists' consumption plus investment plus the balance of foreign trade.*

*We abstract from workers' savings here.

3. The Mechanism of the Business Upswing (1935) pp. 20-34

26 Mass unemployment seems to be the most obvious symptom of depression. Is this unemployment due to the shortage of capital equipment, i e. to inadequate accumulation of fixed capital in relation to the increase of population? Certainly not The position is rather the reverse. During the depression ~~them~~ existing capital equipment is utilized to a small degree; the idle capital equipment is ~~xxx~~ the countxerpart of the unemployed labourx force. To what should be attributed the fact that the owner of unutilized equipment who encounters a lasting supply of idle labour does not embark upon production? Any single entrepreneur would certainly answer that this would be an unprofitable proposition: the prices at which he could sell would not even cover his current costs, i.e. the outlay on raw materials, laboo r, taxes, etc. Thus a reduction of wages is being recommended as a way to overcome the depression. Now one of the main features of the capitalist system is the fact that what is to the advantage of ~~x~~ a single entrepreneur does not necessarily benefit all entrepreneurs as a class. In one entrepreneur reduces wages he is able caeteris paribus to expand production; but once all entrepreurs do the same thing -- the result will be entirely different.
Summary: If wages fall generally and also civil servants' salaries so that taxes fall, then production possible, profits made, but unless these profits invested immediately (and they will not, for entrepreneurs will temporize until convinced that profitability will last), thengoods will be unsold and prices will fall.

27 In fact wage reduction does not as a rule result even in the temporary increase in production described above. Indeed not only investment but evn utilization of existing equipment will not respond immediately to an improvement in profitability. For immediately after the reduction of wages and before entrepreneurs manage to increase production within the existing capital equipment a fall in prices makes its appearance... What the entrepreneurs gain on the wage reductions is soon dissipated through // 28 // price declines. All this could be noticed in all countries during the world depression in the period 1931-32, when the wave of wage reductions brought about a rapid fall in prices rather than an increase in production.

28 Thus while wage reductions do not cause any increase in production in the case of a competitive economy, in a fully cartelized system they lead, as a result of the rigidity of prices, to a shrinkage of production and a rise in enemployment.

In a 'mexed' system, consisting of a cartelized and a competitive sector, the result of wage cuts will be something intermediate: a fall of production will ensue but it will be weaker than in a fully cartelized system.

It follows from the above arguemnt that a reduction of wages does not constitute a way out of depression, because the gains are not used immediately by the capitalists for the purchase ofinvestment goods. Now we shall try to prove the opposite is the case: the increase of investment <u>per se</u> unaccompanied by a wage reduction causes a rise in output.

<u>Summary</u> (pp 28 f) Suppose some important invention. Capitalists increase demand for bank credit; new construction follows; stimulus spreads to source of supplies for new production; increased employment increases demand for consumer goods; there follows still more employment; profits increase...

29 The entrepreneurs who engage in additional investment are 'propelling' into the pockets of other capitalists profits which are equal totheir investment, and they becoming indebted to these capitalists to the same extent via banks.

In the preceding sections we were faced with the problem whether the profits resulting from the reduction of costs are invested. In the case presently considered, the profits, to put itparadoxically, are invested even before they come into being.

Profits that are not invested cannot be retained because they are annihilated by the ensuing fall in prices and production. The creation of purchasing power for financing additional investment increases the output form the low level reached in the depression and thus creates profits equal to this investment.

29 f. Interest rates must not rise so much as to discourage investment.3

30 .. when the new invention has been spread and the original source of the business upswing has dried up... in them meantime the increased profitability prevailing in the economy as a whole will have resulted in a rise in investment. It is this investment caused by a higher profitability which will step in when the effect of the new invention will have petered out.

Summary (p 30) depression bottomms out through cumulative shrinking of capital equipment (depreciated but not replaced), which increases utilization of surviving extablishments, profitability returns, capital equipment begins to be restored, profits mount.

31 The process of collapse of the boom is the reverse of that starting the upswing from the bottom of the depression. Summary: suppose expansion by 40 establishments per annum; at some point utilization of each will begin to decline; themre follow lower profits, decline in investment, fall in production, employment, wages, consumption; and so on to bottom of depression

31 f Summary: investment maintains, increased investment increases profitability, and so the upswing ie increased circulation (volume of)

but investment increases capital goods; increased capital goods in the limit lead to less utilix zation of single units; decreased utilization decreases profits and profitability to discourage investment, decrease volume of circulation

32 f Summary: anti-government slump intervention:

increased purchasing power (1) to construct railways or (2) to dole for unemployed. Stimulus immedately felt in capital goods industry or immediately in comnsumer goods and eventually in capital. Increased circulation, profits, upswing, increased revenues in taxes, pay off government deficit

4. A Theory of Commodity, Income and Capital Taxation (1937)

35: In this paper we shall consider the effects of commodity taxes, income taxes, and capital taxes on employment, national income and its distribution -- s with captial equipment and money wages given. The first condition confines ouxr analysis to the short period; the second is merely a simplmfication which can be avoided by measuring the values not in money terms but in wage units. In addition we make the following simplifying conditions:

(1) That we are considering a closed economic system with a surplus of all types of labour and equipment;

(2) That workers spend all they receive as wages or doles (for unemployment, disability, etc.) and thus only capitalists (entrepreneurs and rentiers) save; and

(3) That the State Budget is balanced, all State expenditure being financed by taxation.

...

Our argument is divided into four stages. In the first stage we briefly consider short-period equilibrium in an economy without taxation and State expenditure, and in the subsequent stages introduce commodity taxes, income taxes, and capital taxes. We assume the commodity tax to be levied only on wage-goods and km the income tax only on capitalists' income.

36 No taxes or State expenditure; short run

$$P = Cc + I$$

and by subtracting Cc (capitalists' conmsumption)from both sides

$$S = I$$

Now in the short period, a change in basic conditions will not modify P. For it depends on m investment which took place in the past and on capitalists' consumption which is rather inelastic.

37 State expenditure financed by taxation on wage goods and spent on officials' salaries, doles for unemployed, disabled etc.

For sake of simplicity suppose tax is ad valorem at constant rate on all kingds of wage goods, so that it is

just a new kind of prime cost.

The national income is equal to total of consumption and investment. Workers' wages equal to the value of their consumption. Taxes equal sum of salaries of officials and of dole, all of which are spent on wage goods. Hence once more

$$P = Cc + I$$

Gross profits equal capitalists' consumption plus investment.

Now suppose tax to be changed from 3% to 5% and its proceeds to be spent on unemployed who spend it on wage goods.

At the beginning of the new regime of taxation gross profits will remain unchanged on same assumptions as before. If employment and the x wage bill remain unchanged, then the marginal cost of wage goods and their prices will increase//38// by 2%. There is no stimulus for a change in Cc or I (provided the rise in prices does not involve a significant rise in interest rates which would depress investment). The/effect of increasing commodity tax is a shift in distribution of wage goods from workers and officials salaries to the unemployed that receive the new 2%.

main/

38 Now suppose there is added an income tax on gross profits: this clearly is not a prime cost so that

39 $P = (C_c + I) + T_i$

where Ti goes to the dole and is spent on wage goods to raise gross profit, P.

Now suppose income tax raised from 15% to 25% and the additional tax t goes to the dole, is spent on wage goods, and swells gross profit. Still this is conceivably not the final effect because of effect on interest rate.

When income tax 15% and interest 3% then lender is earning 2.55%; when tax advances to 25%, interest will rise to 3.4% so that lender may still earn 2.55%.

40 Now if investor expects yield of 9% and pays interest at 3%, he has a differential before income tax of 6% and after 15% deduction his differential is 5.1%. When tax is 25% and interest 3.4%, his differential before taxes is 5.6% and after tax 4.2%. Still the increased income tax swells gross profit; if it does so by 10%, then the expected yield rises from 9% to 9.9%; the differential before tax is 6.5% and after tax is 4.875%.

40 "In this way the chief change resulting from income taxation would be the rise of the demand for wage-goods on the part of the unemployed. This raises, of course, not only the output of wage-mgoods but also their prices, and thus reduces the 'real' consumption of workers employed before the introduction of the nex tax. On the other hand, there will be an increase in consumption on the part of new employed workers. What rise in total wage-bill results, depends of coursex on the elasticity of supply of wage-goods."

41 Suppose a tax of 2% per annum levied on every type of owned capital and spent on dole payments. The immediate result is a further increment of gross profit

$$P = (Cc + I) + Ti + Tc$$

Moreover the net profitability of investment and the rate of interest remain unchanged.

If one bomrrows money toinvest, one does not increase one's captital, and so one is not affected by capital tax: the same x holds if one invests one's own means, for one pay the same tax anyway. Similarly, whether or not one lends money, one pays the same capital tax, so that interest has no reason to change.

42 So the tax goes to the dole to increase consumption, employment, prices, and gross profit. The inducement to invest increases.x With increased investment, Cc + I, which remains after Ti and Tc have been paid, is greater than before.

42 "It follows from the above that capital taxation is perhaps the best way to stimulate business and reduce unemployment. It has all the merits of financing the State expenditure by borrowing, but is distinguished from borrowing by the advantage of the state not becoming indebted. It is ifficult to believe however that capital taxation will ever be applied for thispurpose on a large scale; for it may seem to undermine the principle of private property, and therefore in this case, as in general, 'any governmment which has both the will and power to remedy the major defects of the capitalist system would have the will and power to abolish it altogether.'"

Quoting Joan Robinson, Review of Harrod's Trade Cycle, in Economic Journal December 1936.

7. The Determinants of Profits [(1933) 1954] pp 78-92

78 GNP = Gross profits = Gross investment
Wages & salaries Capitalists' consumption
Workers' consumption

Gross profits = Gross investment + capitalists' consumption

on supposition of closed economy, negligible taxes and govt expenditure, negligible workers' savings.

80 .. following the Marxian 'schemes of reproduction' we subdivide the economy into three departments: department I producing investment goods, department II producing consumption goods for capitalists, and department III producing consumption goods for workers. The capitalists in department III after having sold to workers the amount of consumption goods corresponding to their wages will still have left a surplus of consumption goods will be equivalent to their profits. These goods will be sold to workers of departments I and II, and as the workers do not save it will be equal to their incomes. Thus total profits will be equal to the sum of profits in department I, profits in department II, and wages in these two departments; or, total profits will be equal to the value of production of these two departments -- in other words, to the value of production of investment goods and consumption goods for capitalists.

The production of department I and department II will also determine the production of department III if the distribution between profits and wages in all departments is given. The production of department III will be pushed up to the point where profits earned out of that production will be equal to the wages of departments I and II. Or, to put it differently, employment and production of department III will be pushed up to the point where the surplus of this production over what the workers of this department buy with their wages is equal to the wages of departments I and II.

The above clarifies the role of the 'distribution factors', i.e. factors determining the distribution of income (such as degree of monopoly) in the theory of profits. Given that profits are determined by capitalists' consumption and investment, it is the workers' income (equal here to workers' consumption) which is determined by the 'distribution factors'.

In this way // 81 // capitalists' consumption and investment conjointly with the 'distribution factors' determine the workers' consumption and consequently the national output and employment. The national output will be pushed up to the point where profits carved out of it in accordance with the distribution factors are equal to the sum of capitalists' consumption and investment.

Summary

NB The arguemnt suppposes elastic supply. If output of workers' consumption goods is at capacity level, increase in capitalist consumption or investment results in higher prices for the same workers' goods, higher profits in department III to equal higher wages in departments I and II, and a fall in real wage rates.

THE GENERAL CASE

Now consider economy that is not a closed system and that admits notable government expenditure and taxation

GNP =	gross profits net of (direct) taxes	= gross investment
	wages and salaries net of (direct) taxes	export surplus
	taxes (direct & indirect)	govt expenditure on goods & servic
		captialists' consumption
		workers consumption

81 Part of the taxes are spent on transfers such as social benefits, while the remaining part serves to finance government expen- // 82 // diture on goods and services. Let us subtract from both sides of the balance sheet, taxes minus transfers. On the income side the item 'taxes' will disappear and we shall add transfers to wages and salaries. On the other side, the difference between government expenditure on goods and services and taxes minus transfers will be equal to the budget deficit. Thus, the balance sheet will be as follows:

GNP	= gross profit	= gross investment
minus taxes	net of taxes	export surplus
plus transfers	wages, salaries & transfers net of taxes	budget deficit
		capitalists' consumption
		workers' consumption

By subtracting now from both sides wages, salaries, and transfers net of taxes, we obtain the following equation:

Gross profits net of taxes	=	Gross investment
		plus export surplus
		budget deficit
		capitalists' consumption
		minus workers' savings

Summary: this reduces to the special case when we assume that foreign trade is balanced, the budget is balanced, and workers do not save, except that now we consider gross profits after taxes.

83: SAVINGS AND INVESTMENT

Let us now subtract on both sides of the general equation for profits (see preceding page) capitalists' consumption and add workers' savings. We obtain:

Total gross savings = capitalists' gross savings = gross investment
workers' savings export surplus
budget deficit

... If we now assume that both foreign trade and the government budget are balanced, we obtain:

Gross savings equal gross investment

If we assume moreover that workers do not save we have:

Capitalists' gross savings equal gross investment

This equation is equivalent to:

Gross profits equal gross investment plus capitalists' consumpt

BL: add to both sides 'capitalists' consumption.

83 It should be emphasized that the equality between savings and investment plus export surplus plus budget deficit in the general case -- or investment alone in the special case -- will be valid under all circumstances. In particular, it will be independent of the level of the rate of interest which was customarily considered in economic theory to be the factor equilibrating the demand for and the supply of new capital. In the present conception investment, once carried out, automatically provides the savings necessary to finance it. Indeed, in our simplified model, profits in a given period are the direct outcome of capitalists' consumption and investment in that period. If investment increases by a certain amount, savings out of profits are pro tanto higher.

84 To put it in a more concrete fashion: if some capitalists increase their investment by using for this purpose their liquid reserves, the profits of other capitalists will rise pro tanto and thus the liquid reserves invested will pass into the possession of the latter. If additional investment is financed by bank credit, the spending of the amounts in question will cause equal amounts of saved profits to accumulate as bank deposits. The investing capitalists will thus find it possible to float bonds to the same extent and thus to repay the bank credits.

84 One important consequence of the above is that the rate of interest cannot be determined by the demand for and supply of new capital because investment finances itself. The factors determining the level of the rate of interest are discussed in Part III below.

THE EFFECT OF THE EXPORT SURPLUS AND BUDGET DEFICIT

84 According to the formula established above, profits are equal to investment plus export surplus plus budget deficit minus workers' savings plus capitalists' consumption. It follows directly that an increase in export surplus will raise profits pro tanto if other components are unchanged. The mechanism involved is the same as that described on p. 80. The value of an increment is the production of the export sector will be accounted for by the increase in profits and wages of that sector. The wages however will be spent on consumption goods. Thus, production of consumption goods for workers will be expanded up to the // 85 // point where profits out of this production will increase by the amount of additional wages in the export sector.

NB summary: if production already at capacity, prices will rise and real wages fall to yield requisite increase in profit

85 It follows directly from the above that the export surplus enables profits to increase above that level which would be determined by capitalists' investment and consumption. It is from this point of view that the fight for foreign markets may be viewed. The capitalists of a country which manages to capture foreign markets from other countries are able to increase their profits at the expense of the capitalists of the other countries. Similarly, a colonial metropolis may achieve an export surplus through investment in its dependencies.

A budget deficit has an effect similar to that of an export surplus. It also permits profits to increase above the level determined by private investment and capitalists' consumption. In a sense the budget deficit can be considered as an artificial export surplus. In the case of the export surplus a country receives more for its exports than it pays for its imports. In the case of the budget deficit the private sector of the economy receives more from government expenditure than it pays in taxes. The counterpart of the export surplus is an increase in the indebtedness of the foreign countries towards the country considered.

The counterpart of the budget deficit is an increase in the indebtedness of the government towards the private sector. Both of these surpluses of receipts over payments generate profits in the same way.

The above shows clearly the significance of 'external' markets (including those created by budget deficits) for a capitalist // 86 // economy. Without such markets profits are conditioned by the ability of capitalists to consume or to undertake capital investment. It is the export surplus and the budget deficit which enable the capitalists to make profits over and above their own purchases of goods and services.

The connection between 'external' profits and imperialism is obvious. The fight for the division of existing foreign markets and the expansion of colonial empires, which provide new opportunities for export of capital associated with export of goods, can be viewed as a drive for export surplus, the classical source of 'external' profits. Armaments and wars, usually financed by budget deficits, are also a source of this kind of profits.

PROFITS AND INVESTMENT UNDER SIMPLIFYING ASSUMPTIONS

summary in the main

$$C_t = qP_{t-u} + A \qquad (7.1)$$

Capitalist consumption in period, t, is equal to some slowly changing constant, A, plus a small fraction, q, of profits in some earlier period, t-u. Now profits, in the special // 87 // case, are equal to investment plus capitalist consumption, so

$$P_t = I_t + qP_{t-u} + A \qquad (7.3)$$

Profits at time, t, are a linear function of profits at times, t, t-u, t-2u, etc., and that the coefficients of investment, It, will be 1, q, q^2, etc., respectively. But q is less than 1, and probably considerably less than 1. So the coefficients are a quickly decreasing series, and so ~~we need attend~~ only profits relatively near in time periods will count in the determination of P_t. Hence we can write as approximate

$$P_t = f(I_{t-v}) \qquad (7.4)$$

where v is the relevant time lag. Now combining (7.3)and (7.4)

$$f(I_{t-v}) = I_t + qf(I_{t-v-u}) + A$$

If investment is constant for a series of periods, the subscripts to I in u and v can be dropped so that

$f(I_t) = I_t + qf(I_t) + A$ whence

$f(I_t) = (I_t + A)/(1 - q)$

//88// Kalecki takes this as the shape of the function, f, and so writes

$$P_t = (I_{t-v} + A)/(1 - q) \qquad (7.4')$$

He then turns to the general case, replaces its formula by an approximation, and statistically illustrates the relevance of the formula (pp 89-92).

6. DISTRIBUTION OF NATIONAL INCOME [(1938) 1954] pp 62-77

Determinants of the relative share of wages in income

62 We shall now consider the ratio of proceeds to prime costs in an industry (chapter 5) with the relative share of wages in the value added of that industry. The value added, i.e. the value of products less the cost of materials, is equal to the sum of wages, overheads and profits. If we denote aggregate wages by W, the aggregate cost of materials by M, and the ratio of aggregate proceeds to aggregate prime cost by k, we have:

$$\text{overhead plus profits} = (k - 1)(W + M)$$

where the ratio of proceeds to prime costs is determined, according to the above, by the degree of monopoly. The relative share of wages in the value added in an industry may be represented as

$$w = W/[W + (k - 1)(W + M)]$$

whence, if $j = M/W$, one obtains

$$w = 1/[1 + (k - 1)(j + 1)] \qquad (6.1)$$

Kalecki conceives k' and j' as adjustments of k and j such that the above formula may be extended from the individual firm to the economy as a whole and concludes (P. 63):

To summarize: the relative share of wages in the value added of manufacturing is determined, apart from the industrial composition of the value added, by the degree of monopoly and by the ratio of ~~m~~ raw material prices to ~~x~~ unit wage costs. A rise in the degree of monopoly or in raw material prices causes a fall of the relative share of wages in the value adde

/d.

75: We have seen above (statistically) that the relative share of wages in the gross income of the private sector tends to be fairly stable in the course of the cycle. This cannot be expected, however, for the relative share of wages and salaries combined. Salaries because of their overhead character are likely to fall less during the depression and to rise less during the boom than wages. Thus the 'real' wage and salary bill, V, can be expected to fluctuate less during the course of the cycle than the 'real' gross income // 76 // of theprivate sector, Y. Consequently we can write:

$$V = aY + B$$

where B is a positive constant in the short period although subject to long run changes. The coefficient a is less than 1 because V is less than Y and B is greater than 0. If we divide both sides of the equation by the real income, Y, we obtain:

$$V/Y = a + B/Y \qquad (6.2)$$

where V/Y is the relative share of wages and salaries in the gross income of the private sector. V/Y increases of course when the real income Y declines. It may be noticed here that equation (6.2) constitutes one link in the theory of the business cycle developed below.

There follows a statistical illustration from U S A 1929-41

8. DETERMINATION OF NATIONAL INCOME AND CONSUMPTION [(1939) 1954]

93 Chapter 6: relative shamre, V/Y, of wages and salaries in national income was shown to be $(a + B/Y)$

Let P' be gross profits before taxes, so that $V = Y - P'$, whence

$$V/Y = (Y - P')/Y = a + B/Y$$

andm so

$$Y = (P' + B)/(1 - a) \qquad (8.1)$$

94 GNP minus gross income of private sector equals payments to government employees equals government product so measured.

Gross private product minus gross income of private sector, Y, equals indirect taxes which are included in value of private product

GNP minusgross income of private sector equals payments to govt employees and indirect taxes.

GNP, Y, Gp, Gpr, GPP, Y, IT

GNP - Y = Gp = Gpr; GPP - Y = IT; GNP = Gpr + GPP
= Gp + Y + IT

National Product, profits, investment in a simplified model

95
$$P_t = (I_{t-v} + A)/(1 - q) \qquad 7.4'$$

$$Y_t = (P_t + B)/(1 - a) \qquad 8.1$$

so that profits vary with earlier investment and gross private income varies with profits

BL: as already described in ch 7, the role of the distribution factors is to determine income or product on the baxsis of profits which in turn are determined by earlier investment.

It follows directly that changes in the distribution of income occur not by way of a change in profits, P, but through a change in gross income or product, Y. Imagine for instance that as a result of the increase in the degree of monopoly the relative share of profits in the gross income rises. Profits will remain unchanged because they continue to be determined by investment which depends on past investment decisions, but the real wages and salaries and the gross income or product will fall. The level of income or product will decline to the point at which the higher relative share of profits yields the same absolute level of profits. In our equation it will be reflected as follows: the increase in the

degree of monopoly will cause a fall a fall in the coefficient, a. As a result, a lower level of income or product, Y_t, will correspond to a given level of investment, I_{t-v}.

Footnote^{p}95: According to equation (6.2), a is that part of the relative share of wages and salaries in income Y which is independent of the level of Y; the other part, B/Y, stands for the influence of the overhead element in salaries.

96 Changes in investment and consumption in a simplified model

Summary Writing "&" for a capital delta and differentiating 7.4' and 8.1':

$$\&P_t = \&I_{t-v}/(1 - q)$$

$$\&Y_t = \&P_t/(1 - a)$$

so $$\&Y_t = \&I_{t-v}/(1 - a)(1 - q)$$

Recall that q denotes the part of the increment of profits that goes to capitalist consumption, and that a is the coefficient indicating the part of gross income that goes to wages and salaries. Both (1 - q) and (1 - a) are less than one so that $\&Y_t$ is greater than $\&I_{t-v}$. So gross income or product increases more than investment because of the increment in capitalist consumption and workers wages. Inversely during a slump the fall in investment results in a still larger fall in employment and consumption.

97 In socialist economy fall in investment is balanced by fall in princes so that there results appropriate fall in profits.

If we compare not absolute but proportionate change in P, Y, I, then from 7.4' and 8.1' since A is the stable part of capitalists' consumption and B the stable part of salaries, it follows that
P changes proportionately less than I in course of cycle
Y changes proportionately less than P
Y changes proportionately less than I

The general case

98 The equations remain the same with a' q' A' B' I' representing modified meanings. There is added a statistic representation.

102 Gross product of the private sector

Where O denotes real gross product of private sector and E denotes aggregate indirect taxes. I is investment, I' is investment plus export surplus and budget deficit:

102

$$0_t = Y_t + E \qquad 8.2$$

$$Y_t = (P_t + B')/(1 - a') \qquad 8.1''$$

$$P_t = (I'_{t-v} + A')/(1 - q') \qquad 7.4''$$

so

$$\&0_t = \&I_{t-v}/(1 - a')(1 - q')$$

so that an increment in I' determines a later increment in 0.

103 Long-run changes in investment and income

In the long run the stable part in capitalist income, A, and the stable part in wages and salaries, B, may rise proportionately with profits and income respectively. This reverses the short run tendency of the business cycle in which relative shanges of investment surplus deficit are greater than those of gross income or output of the private sector.

9. ENTREPRENEURIAL CAPITAL AND INVESTMENT (1937) 1954 pp 105-109

106 The size of a firm thus appears to be circumscribed by the amount of its entreneurial capital both through its influence on the capacity to borrow capital and through its effect on the degree of risk... A firm with a large entrepreneurial capital could obtain funds for a large investment whereas firms with a small entrepreneurial capital could not. Differences in the position of firms arising out of differences in their entrepreneurial capital are further enhanced by the fact that firms below a certain size have no access whatever to the capital market.

It follows from the above that the expansion of the firm depends on its accumulation of capital out of current profits. // 107 // This will enable the firm to undertake new investment without encountering the obstacles of the limited capital market or 'increasing risk.' Not only can savings out of current profits be directly invested in the business, but this increase in the firm's capital will make it possible to contract new loans.

109 The limitation of the size of the firm by the availability of entrepreneurial capital goes to the very heart of the capitalist system. Many economists assume, at least in their abstract theories, a state of business democracy where anybody endowed with entrepreneurial ability can obtain capital for starting a business venture. This icture.. is .. unrealistic. The most important prerequisite for becoming an entrepreneur is the ownership of capital. # The above.. of great importance for the theory of determination of investment. One the important factors of investment decisions is the accumulation of firms' capital out of current profits.

10. DETERMINANTS OF INVESTMENT [(1943) 1955] pp 110-123

$$D_t = F_{t+u} \qquad 10.1$$

$$D = aS + b\,\&P/\&t - c\,\&K/\&t + d \qquad 10.2$$

D is the number of decisions to invest in fixed capital per time unit
F is the fixed capital produced with a lag, u
a, b, c, d are constants
S is total savings of firms: depreciation, undistributed profits, 'personal savings' ofthe controlling groups invested in their own companies through subscriptions to new share issues
&P/&t is the time rate of profit
&K/&t is the time rate of increase of fixed capital
d is a constant subject to long run changes particularly to technical progress

113 Factors not considered, why not.

114 Two special cases of the theory

suppose a and c are zero, so that decisions to invest vary with the rate of profit

this is an acceleration (deceleration) principle not open to objections that Kalecki raises against the usual view that establishes a xxxx relationship between net investment and the rate of change in output

116 suppose a is equal to 1 and d is equal to zero
117 further suppose that inventories are stable and the budget deficit and export surplus are both zero, so that savings, S, are equal to inveztment in fixed capital, F, then

$$D = F + b\&P/\&t - c\&K/\&t$$

but $F_t = D_{t-u}$

so $D_t - D_{t-u} = b\&P_t/\&t - c\&K_t/\&t$

hence when profits P and capital stock are constant, so also is the rate of investment decisions since $D_t = D_{t-u}$
when profits increase to a new level so too does D ($D_t > D_{t-u}$)
when capital stock is increasing, D declines ($D_t < D_{t-u}$)

It follows that the rate of investment decisions is an increasing function of the level of profits and a decreasing function of the stock of capital equipment. This is the relationship which was the basis of the theory of the business cycle given in my Essays on the Theory of Economic Fluctuations.

117 The foregoing account does not hold universally: it supposes that a is unity so that the whole of gross savings, S, become new fixed capital, F; and it supposes that d is zero, which excludes long term technological innovation.

Examination of the fundamental equation

summary 118 $\&K/\&t = F - f$

ie the rate of increase of fixed capital is equal to new fixed capital, F, minus dpreciation, f.

Substituting in the fundamental equation, one gets:

$$F_{t+u} = aS_t + b\&P_t/\&t - c(F_t - f) + d$$

Transferring cF to LHS and dividing through by $(1 + c)$

$$\frac{F_{t+u} - F_t}{1 + c} = \frac{aS_t}{1+c} + \frac{b}{1+c}\frac{\&P_t}{\&t} + \frac{cf + d}{1 + c}$$

The LHS is a weighted average and may be replaced by F_{t+h} where h is less than u. On the RHS the coefficient of the the second term may be replaced by b' and the whole of the third term by d', so that we read

$$F_{t+h} = aS_t/(1 + c) + b'\&P_t/\&t + d' \qquad 10.3$$

119 We shall now examine the coefficients of this equation. The constnat d' is subject to long-run changes. No ~~ffmxx~~ estimate of b' seems made. Since c is small and positive $a/(1 + c)$ IS LESS THAN a. It may be slightly greater than unity, or equal to unity, or less than unity.

122 Investment in inventories, J, where h and e are averages, is proportionate to the rate of change in output of private sector with a time lag

$$J_{t+h} = e\&O_t/\&t \qquad 10.4$$

Summing 10.3 and 10.4 one gets an equation for total investment,

$$I_{t+h} = \frac{a}{1+c} S_t + b'\&P_t/\&t + e\&O_t/\&t + d' \qquad 10.5$$

The total investment thus depends, according to our theory, on both the level of economic activity (S_t) and the rate of change of this level at some earlier time.

11. THE BUSINESS CYCLE 1943 1954 pp 124.- 137

126 It can be shown(*) that the actual dynamicprocess can be analysed into (a) cyclical fluctuations, the pattern of which is the same as in the static system described below; and (b) a smooth long-run trend.

(*) See M. Kalecki, The Theory of Economic Dynamics, London 1954, chapter 14.

124 $S = I$

on the assumption of no export surplus, no govt deficit, and no workers' savings

also assume identity of deflator of investment prices and of deflator of gross product of private sector

125 $P_t = (I_{t-v} + A)/(1 - q)$ 7.4' p. 88

where P is profits after tax, A the stable component in capitalist consumption, q the fraction of profits in captialist consumption

$O_t = (P_t + B')/(1 - a') + E$ 8.2' p. 102

where O is gross product, P profit after tax, B' and a' reflect both distribution of income factors and profit tax system, and E is indirect taxes

$I_{t+h} =$ 10.5 p 123

which states the relation, with a time lag, between investment in fixed capital on the one hand and savings, //126// the rate of change in profits and the rate of change in the stock of capital equipment on theother (the effect of the change in the stock of capital being reflected in the denominator of the coefficient $a/(1 + c)$); and (b) the relation between investment in inventories andthe rate of change in output.

The equationof the business cycle

126 is obtained by replacing in 10.5:
S_t by I_t since budget deficit and export surplus excluded
taking A, B', and E as constant and so differentiating easily equations 7.4' and 8.2'
replacing differentials of 10.5 by their equivalents in $\&I_{t-h}/\&t$ derived from 7.4' and 8.2' to determine what now is 11.2
introducing the value of d' that conditions the possibility of no long-run change, see 11.3 on p. 127
subtracting 11.3 from 11.2

writing i for I - d", the difference between investmtne and the average rate of depreciation to obtain

$$i_{t+h} = ai_t/(1 + c) + m\&i_{t-v}/\&t \qquad 11.4' \text{ p } 128$$

[since d" is a constant, &I = &i]

where m replaces $(1/(1-q))(b' + e/(1 - a'))$

if at time t, i is zero, but at time t-v &i/&t was positive, then at time t+h, i will be positive

inversely, if i is zero at t, while &i/&t was negative at t-v, then i will be negative at time t+H.

according to the values of a, c, m, on the rise
either i continues positive until no further capacity exists
or else it gradually decreases, becomes zero, then negative

130: The above mechanism of the business cycle is based on two elements.

(a) When investment reaches the depreciation level from below it does not stop at this level but crosses it moving upwards. This happens because the rise in investment and consequently the rise in profits and in aggregate output before the depreciation level is reached causes investment to be higher than that level in the subseqeunt period. Static ~~mk~~ equilibrium can come into existence only if investment is at the depreciation level and in addition it has not changed its level in the recent past. The second condition is not fulfilled at A and this why the upward movement continues. When investment reaches the depreciation ~~lx~~ level from above (at A') the situation is analogous, i.e. investment does not stop but crosses the depreciation level moving downwards.

(b) When the upward movement of investment comes a halt it does not stay at this level but starts to decline. This happens because the coefficient a/(1+c) IS LEss than one, which reflects the negative influence on investment of the increasing capital equipment (c 0) and possibly also the factor of incomplete reinvestment (if a 1). If there were a // 131 // full reinvestment of saving (ie a = 1) and if the accumulation of capital equipment could be disregarded (ie if c were negligible) the system would be maintained at its top level. But in fact the accumulation of capital equipment, which with a stable level of economic activity makes for a falling rate of profit, does

have a tangible adverse effect on investment (ie c is not negligible). Moreover, the reinvestment of savings may be incomplete (ie a 1). As a result investment declines and thus the slump is started.

The position at the bottom of the slump is analogous to that at the top of the boom. While the rate of profit is falling at the top of the boom because the additions fall to the stock of capital equipment, it is rising at the bottom of the slump because depreciation of capital equipment is not being made good.

But it may be questioned whether this situation is symmetrical with that at the top of the boom. It may indeed be claimed that the effect of capital destruction upon investment decisions during the slump is much weaker than that of capital accumulation in the boom because the equipment destroyed in the slump is frequently idle in any case. As a result, the slumps might be very long. This possibility is, in fact, not excluded in this chapter. But it should be observed that the situation is different in an economy enjoying long run growth. It can be shown that in such an economy the business cycle as described above is superimposed upon the smooth long run trend.

132 The 'ceiling' and the 'floor'

On the supposition that i continues to rise until shortages of equipment or labour intervene, then

unfilled orders will pile up and deliveries will lag

there will result an end to the rise in inventories and even a fall of investment in inventories

investment in fixed capital may be similarly affected by shortages; the period of execution of investment orders will lengthen and the rise of investment in fixed capital will taper off

after a period at the ceiling the mechanism of the business cycle begins to operate: the increase of the stock of capital
133 equipment and possibly incomplete reinvestment of savings cause investment to start falling, and the fall continues as in the automatic cycle.

is there a floor to the slump? not as obviously as there is a ceiling to the boom. but the gross value of investment in fixed capital cannot go below zero, and this may be followed by disinvestment in inventories. but when the slump does come to a halt, then process as in automatic cycle.

Explosive and damped fluctuations

133 The cyclical fluctuations inherent in equatio 11.4' may be stable, explosive, or damped depending on the value of the coefficients a, c, m, and the time lags h and v.

On a certain set of these values the amplitude of fluctuations is constant. But if m is increased while the others remain fixed, the fluctuations become explosive; and if m is reduced they becmome damped.

The business cycle and the utilization of resources

Hypothetical example pp 135-137

137: It is thus clear that fluctuations in the degree of utiliz ation of mxp equipment are of similar order as those in aggregate output. A considerable portion of capital equipment lies idle in the slump. Even on the average the degree of utilization throughout the business cycle will be substantially below the maximum reached during the boom. Fluctuations in the utilization of available labour parallel those in the utilization of equipment. Not only is there mass unemployment in the slump, but average employment throughout the cylce is considerably below the peak reached in the boom. The reserveof capital equipment and the reserve army of unemployed are typical features of capitalist economy at least throughout a considerable part of the cycle.

13. The Problem of Effective Demand with Tugan-Baranovski and Rosa Luxemburg

BL The problem is the profit criterion

In the stationary state profits equal depreciation plus capitalists' consumption

But this can be achieved only with difficulty because there are sheltered industries whose mark-up will yield a profit higher than their/depreciation/and cap con; and this means that other firms will get as much less than their depreciation and cap con as makes up the difference. Sooner or later some firms go out of business and then the squeeze moves on to other firms. The stationary state becomes a slump.

actual/
costs/

Or else the squeeze goes on the workers, whose numbers are reduced (unemployment) and/or whose wages are cut. But once again we move from the stationary state to the slump, for the squeeze moves on to other workers.

An alternative to the stationary state is the process of contraction: savings exceed investment, ie savings are not being reinvested totally.

Hence capital equipment is not being fully utilized, is being less and less utilized; workers in capital goods and services are less and less employed; profits are constantly decreasing absolutely and relatively to previous levels and rates; prices and wages fall; firms vanish.

Ineffective demand, over-production, slump are the same thing.

Another alternative to the stationary state is the process of expansion. Not only are savings totally invested, but this total exceeds depreciation and capitalists' consumption. Fixed capital is increasing at a constant rate. It follows that the ratio of profit to total fixed capital is falling.

The declineof this ratio may discourage total investment of savings, and so we move into contraction: each new investment period shows less investment than savings from the previous period. As long as this continues we are in the slump.

Again, the sustained expansion may bring us to the point where capacity for further expansion is exceeded.

Delivery periods lengthen, unfilled orders pile up, the rate of advance slows down, profits per interval decrease, and the contraction has set in. For decreased profits mean decreased investment even if all savings invested xxxxxxxx; and this decrease means still smaller profits.

Or again, since the capital expansion exists to ground a consumer expansion, entrepreneurs may fail to expand the supply of consumer goods and services proportionately to the capacity of fixed capital accumulated.

Then investment in fixed capital dries up for it has no prospect of proximate utility

Merely incxreasing the supply of consumer goods and services increases workers consumption, but that does not supply the basis for the profit that motivates and supplies the criterion for the capitalist economy.

Now it is the profit criterion that is the evil genius of the stationary state, the contracting economy, and the expanding economy.

Of the stationary state, because the criterion implies the more profits the better, and so every x effort is made to secure the advantages of the sheltered firmx awash with profits when prøfits do not exist

Of the contraction, for to enter the stationary state prior to exhaustion is a matter of taxing the sheltered firms pseudo- of their/functional profits and subsidizing the firms that are going under.

Of the expansion, for the expansion of fixed capital is for the purpose of increasing the xxxxxxxxxxx ongoing continuous supply of consumer goods and services. But this increase is not an increase in profit but functionally prøfitless and so the capitalist economy lacks the criteria to go through with it.

To satisfy the profit criterion and thereby keep a sick process running there are needed surplus export and/or budget deficit. To get a big enough deficit there is needed the armaments industry or the space program. But both of these are long-term failures: governxment deficit if financed out of capitalist profits does not help meet the profit criterion; if based on long term loans, then the loans can be paid only by sustained inflation etc

147 The theory of Tugan-Baranovski is in fact very simple: the author maintains that with 'appropriate proportions' of use made of national product the problem of effective demand does not arise. This argument, illustrated numerically by means of Marxian schmemes of reprofduction, is in fact tantamount to the statement that at any level of consumption of workers and capitalists the natioal product may be sold provided
r?/there investment is sufficiently large. These are the proportions between consumption and investment , which must be established in order than the total production should be purchased. A distortion of thisproportion leads to crises in the course of which the deviation from it is being corrected. Thus the fundamental idea of Tugan is an error that what may happen is actually happening, because he does not show at all why capitalists in the long-run are to invest to the extent which is necessary to contribute to the full utilization of productive equipment.

.. The author, by the way, does not anticipate xxxxtixxxfxx the criticism that capitalists may be unwilling to use the surplus value by investing so much....

The capitalist system is not a 'harmonious' régime, whose purpose is the satisfaction of the needs of its citizens but an antagonistic régime which is to secure profits for capitalists. as a result there is nothing absurd in basing the development // 148 // of the system on expansion of a production of 'coal and steel' which serves to develop the production of these commodities. The production of 'coal and steel' is as justified as the production of bread if it is profitable. Consumption is the final aim and proof of a 'harmonious' but not x of an 'antagonistic' régime.

It is this part of t e argumentof Tugan-Baranovski that I consider his lasting contribution to the analysis of functioning of capitalism in its various phases.

148 f devoted to shoxwing that demand can be ineffective.

150 .. an expanded reproduction will take place if there exist ~~kkk~~ factors that simply do not permit the system to remain in the state of simple reproduction (stationary state): the initial state of simple reproduction leads to a level of gross investment exceeding depreciation.

Such a factor may be first and foremost the influence of technological innovations, discovery of new sources of raw materials and the like which opens before the capitalists new perspectives. The technical progress appears in this approach not merely as depreciating old plant, which leads to their replacemet by new ones; it is also a stimulus for investment // 151 // over and above that level resulting from the fact that capitalists investing 'today' think to have an advvantage over those having invested 'yesterday' because of technical novelties that have reached them.

151 From the last two sections it follows in any case: (a) as a result of the problem of effective demand, expanded reproduction is not a natural and ovious stamte of the capitalist system; (b) nevertheless such reproduction is not necessarily a result of 'external' markets. Thus although these sections are meant primarily as a criticism of the theory of Tugan-Baranovski they constitute at the same time a startingpoint for a discussion of views of Rosa Luxemburg with which we shall deal subsequently.

151 The above (innovations etc) should not be construed in the sense that such a possibility of expanded reproduction -- without 'external' markets -- is tantamount to the elimination of influence of inadequate effective demand. Indeed the rate of reproduction resulting from this factor is by no means necessarily adequate to secure the full utilization of equipment or even to keep the degree of this utilization at a constant level.

151 Rosa Luxemburg considers expanded reproduction in the long run without existence of 'external' markets to be not only far from obvious but outright impossible.

153 One of the most interesting elements of the theory of Rosa Luxemburg is takming into consideration in her 'external markets', alongside those mentioned above (underdeveloped or non-capialist sections of developed), also the market created by government purchases and in particular armament orders.

14. CLASS STRUGGLE AND DISTRIBUTION OF NATIONAL INCOME 1971

156 Until fairly recently it was generally accepted that if wages are raised profits decline pro tanto. Even though in the analysis of other phenomena Say's law was not adhered to, at least not strictly, in this case the preservation of purchasing power was not put in doubt. And the analysis of the increase or reduction in wage rates dealt with the physical consequences of this absolute shift from profits to wages or vice versa. In the case of the rise in wage rates, the reconstruction of capital equipment in line with higher spending on wagem goods and lower outlays on investment and capitalists' consumption was emphasized; as well as the tendency to higher unemployment as a result of substitution of capital for labour that has become more expensive.

Although even today wuite a number of economists would argue in this fashion the fallacy of this approach is fairly widely recognized, even though it may be countered by various economists in a somewhat different fashion way. My counterargument runs as follows.

summary: Assumptions: (1) closed economy, (2) a proportional rise in all wage rates, (3) workers spend all their incomes, (4) they spend themimmediately, (5) prior to the short period under consideration capitalists' decisions on the volume of investment and on their consumption have already been taken and so are not affected by the rise in wages.

Consider 3 departments: 1 investment goods, 2 capitalists' consumption goods, 3 workers' consumption goods.
Old wage bills: W_1, W_2, W_3. Increment multiply by a.
New wage bills: multiply by (1 + a).
By assumption 5: employment in dep 1 and 2 remains constant; wage bill increases by $a(W_1 + W_2)$; profits decline by the same amount unless price of products has changed.
But wages of 1 and 2 are spent in 3, and there there results an equal increment in profit, either through the increase of prices there or an increase in output.
As a result total profits remain unaltered, at least with regard to the short period considered.

Will not capitalists reduce investment and cap consumption?

If they decide immediately simply because of higher wages, they would cut investment and cap con. But they are not likely to for they follow experience and, in fact, profits remain constant in the next short period and so on until they decide to cut investment and cap con.

158 The same applies obviously to a wage cut: no increase in profits will occur either ~~xxxxxxxxx~~ in the short period following it or subsequently.

Will prices of investment goods and cap con change?

159 Thus with perfect competition the volume of~~x~~ production in all three departments remains unchanged ~~xxx~~ while its value increases in each of them (1 + a) times. In this p;roportion thus the total wage bill ~~xxx~~ increases and the total profits, i.e. the distrubxution of national income remains ~~xxxxxxxxx~~ unaltered.

.. wage movements... have no influence whatever on the distribution of national income. But this conclusion is based on the untenable assumption of ~~x~~ perfect competition. In fact only by dropping it and penetrating the world of imperfect competition and oligopolies are we able to arrive at any reasonable conclusion on the impact of bargaining for wages on the distributionm of income.

160 a general theory of mark-up: let u be average cost of wages and raw materials, let p be selling price, so that (p - u) is mark up to cover overheads and profits. consider

$$(p - u)/u = f(\bar{p} / p) \qquad (1)$$

where $\bar{p}$ is the weighted average price of the product for the industry as a whole, and f is an increasing function so that the smaller is p relative to $\bar{p}$ the greater will be the mark up. Moreover the function f may vary for different firms within an industry as a result of semi monopolistic practices and the more intensive these factors the greater will be the mark up.

The price system is deterined. with s firms, there will be (s + 1) prices, p_1, p_2,.. $\bar{p}$, and s functions, and the averaging of the prices to obtain $\bar{p}$

if the functions are given and all direct costs, u, increase (1 + a) times, so too do prices, for from (1)

$$p = u[1 + f(\bar{p}/p)] \qquad (2)$$

but if costs, u_k, rise in only one firm, then $\bar{p}$ will not rise proportionately and so p_k will not rise proportionately

161 Let us now imagine that in a closed system of this type wage rates in all industries increase in the same proportion, 1 + a times. It follows easily that all prices will also increase 1 + a times PROVIDED THAT FUNCTIONS F IN industries to which they are relevant are unchanged. It follows that if these conditions were fulfilled ~~x~~ we should arrive at the same conclusion as for perfectly competitive economy -- that a general increase in money wages does not change the distribution of nationalx income. The same ould apply to the case of the decrease of money wages. However we shall argue that the functions f do depend on trade-union activity.

High mark-ups encourage strong unions to demand wage increases. If demands granted and functions not changed, then prices increase to stimulate a new round of demands, to be followed by still higher prices, more demands, etc. To avoid constantly rising prices, the firm reviews its mark-up function.

162 Now this power manifests itself in the scale of wage rises demanded and achieved. If an increase in bargaining capacity is demonstrated by spectacular ~~xk~~ achievements, there is a downward shift in functions f(p/p) and the mark-ups decline. A rexdistribution of national income from profits to wages will take place then. But this redistribution is much smaller that that which would obtain if prices were stable. The rise in wages is to a great extent 'shifted to consumers,' and 'normal' wage increases will usually leave the functions f unaffected which otherwise mark-ups may tend to get higher because of the rise in the productivity of labor.

summary

suppose spectacular wage rise, decreased mark-ups, redistribution of national income from profits to wages

then as before in department 3 profits will increase in the same proportion as wage rates; but there is the increased share in national income going towages and so dep 3 increases employment and output so that wage bill in 3 increases more than wage rates; the money value of wage ~~xk~~ bill will increase in a higher proportion than the wage rates, but total profits will increase less than the wage rates; while profits in

department 3 increase proportionately to wage rates, employment in departments 1 and 2 being unaltered, but profits in the latter two departments increase less than wage rates because of the decline of mark-ups there.

163 If the trade union power declined the process described above would be reversed. Employment and output in departments 1 and 2 would remain unchanged but in department 3 they would decline. Or the volume of investment and capitalists' consumption would remain unchanged but the consumption of workers would fall. The total output and employment would thus decline. The value of the wage bill would fall more than the wage rates while the value of profits would decline less than the wage rates.

It follows from the above that a wage rise showing an increase in the trade union power -- contrary to the precepts of classical economics -- leads to an increase in employment. And conversely a fall in wagesshowing a weakening of their bargaining power leads to a decline in employment. The weakness of trade unions in a depression manifested in permitting wage cuts contributes to a deepening of unemployment rather than to relieving it.

It follows from the above that the class struggle as reflected in trade-union bargaining may affect the distribution of national income but in a much more sophisticated fashion than expressed by the crude doctrine: when wages are raised, profits fall pro tanto. This doctrine proves to be entirely wrong. Such shifts that occur are: (a) connected with widespread imperfect competition and oligopoly in captialist system; and (b) they are contained in fairly narrow limits. However, the day-by-day // 164 // bargaining process is an important co-determinant of the distribuion of national income.

It should be noted that it is possible to devise other forms of class struggle than wage batgaining, which would affect the distribution of national income in a more direct way. For instance, actions may be taken for keeping down the cost of living. The latter might be achieved by price controls which, however, may prove difficult to administer. But there exists an alternative: subsidizing of prices of wage goods which is financed by direct ttaxation of profits. Such an operation, by the way, will not affect aggregate net profits: the argument is the same as used in section 1 in the case of a wage increase.

The same is true of the effect of price controls. And if such measures cannot be carried out by political parties associated with trade unions in the parliament, the power of the trade unions may be use to mobilize supporting strike movements...

The redistribution of income from profits to wages, as described in the last two sections, is feasible only if excess capacity is in existence. Otherwise it is impossible to increase wages in relation to price of wage goods because prices are determined by demand and functions f become defunct. We return then to the position described in section 2 where wage rise could not effect a redistribution of income.

Price control of wage goods will lead under the circumstances to scarcities of goods and haphazard distribution. Also subsidizing prices of wage goods (by taxing profits) can reduce prices only in the long run by stimulating investment in wage good industries.

.... even contemporary capitalism. . is in general still fairly remote from such a state of full utilization of resources. This is best shown by the fact that prices of finished goods are fixed on a cost basis rathr than determind by demand.

15. TREND AND THE BUSINESS CYCLE 1968

Concluding remarks

183 It follows from the above that in our approach the rate of growth at a given time is a phenomenon rooted in past economic, social, and tenchnological developments rather than determined fully by the coefficients of our equations as is the case with the business cycle. Thisx is, indeed, very different from the approach of the purely 'mechanistic' theories (based frequently on such fallacious a priori assumptions as a constant degree of long-term utilization of equipment), but seems to me much closemr to the realities of the process of development. To my mind fuxture inquiry into the problems of growth should be directed not towards doing without such semi-autonomous magnitudes as A(t) and B(t) but rather towards treating also the coefficients used in our equations (m, n, small delta, q) as slowly changing variables used in paxst development of the system.

Introduction

165 The contemporary theory of growth of capitalist economies tends to consider this problem in terms of a moving equilibrium rather than adopting an approach similar to that applied in the theory of buxsiness cycles. The latter consixsts of establishing two relations: one based on the impact of the effective demand generated by investment upon profits and the national income; and the other showing the determination of investment decisions by, broadly speaking, the level and the raxte of change of economic activity. The first relation does not involve now particularly intricate questions. The second, to my mind, remains the central pièce de résistance of economics.

I do not see why this approach should be abolished in the face of theproblem of long-run growth. In fact, the long-run trend is but a slowly changing component of a chain of short-period situations; it has no independent entity, and the two basic relations mentioned above should be formulated in such a wayas to yield the trend cum business-cycle phenomenon. It is true that the task is incomparably more difficult than in the case of another abstraction, that of the pure business cycle and, as will be seen below, the results of such an inquiry are less mechanistic. This however is no excuse for dropping this approach, which seems to me the only key to the realistic analysis of a capixtalist economy.