Since the early fifties the investment-wage has been discussed in Germany as an instrument of incomes policies. After World War II the shift in the distribution of income and the accumulation of wealth in favour of the profit-earners, and the relatively unsuccessful nominal wages policy aimed at a more equitable distribution of incomes, were the impetus for this discussion. In the political area the proposals of an investment-wage were mainly propagated by Erwin Häussler, a member of the Bundestag, while the theoretical foundations were developed by Oswald von Nell-Breuning, Helmut Meinhold, Alois Oberhauser and Wilfrid Schreiber.

These proposals are aimed at a change in the functional distribution of income in favour of the wage-earners. A redistribution of wealth accumulated in the past is not intended.

This concept of the investment-wage is based on the Kaldor-type distribution theory. According to this version of distribution theory the distribution of income depends primarily on the different propensities to spend and to save wage income and profits. The purpose of the investment-wage concept is to influence the level and the spending of wage incomes. By institutionalising a part of the savings of the wage-earners a certain amount of the wage income is made available for investment-purposes.

What is meant by an investment-wage is that a (limited and not permanently increasing) part of the wage is not paid in cash, but is accumulated as assets. These non-cash wage-components are offered for investment-purposes either directly by the wage-earners themselves or indirectly through an investment fund. The wage-earners would according to this concept receive certificates of the fund, which they could not sell within a certain period of time.

Actually the expression “saving-wage” should be preferred to “investment-wage” (or investive wage), because the wage-earners cannot choose between “consumption” and “investment”, but between “consumption” and “saving”.

The investment-wage can be arranged either in wage negotiations among trade unions and employer associations or imposed by the government. In what follows a model for the distribution of income, in which the investment-wage will be introduced, is developed.

The Investment-Wage and The Circular Flow of Income

The proposals of an investment-wage by Nell-Breuning and Oberhauser are based on the belief that wage-increases larger than productivity gains are reasonable, and should be realised in order to increase the wealth of the wage-earners. Both assume a constant investment-share. The main idea of the investment-wage can be demonstrated by the Keynesian equations of the entrepreneur’s profits in a closed economy without government activities.

From this circular flow of income approach follows, that full employment throughout is compatible with a different distribution of the national income in wage and profit income. Profits are higher, when investment and consumption expenditures of the entrepreneurs are higher and the savings of the wage-earners are smaller, and vice versa.

The ex-post identities are:

\[ Y = W + R, \]
\[ R = I + C_r - S_w, \]
where

- \( Y \) = National Income,
- \( W \) = Wage bill,
- \( R \) = Profit,
- \( I \) = Net Investment,
- \( C_r \) = Consumption expenditure of the entrepreneurs,
- \( S_w \) = Savings of the wage-earners.

If now the savings of wage-earners \( S_w \) are increased with \( Y \) and \( I \) unchanged, then \( R \) has to be reduced to the extent of the increase in \( S_w \). In order that \( S_w \) can increase, the wage-rate has to be raised by the amount of the increase of \( S_w \). The additional wage-increment is called investment-wage. The total savings of the wage-earners consist of the savings of their “cash-wages” and the savings of the investment-wage.

If \( R - C_r \) decreases and \( S_w \) increases to the extent of the investment-wage, then the ratio of the distribution of the new assets shifts in favour of the wage-earners by the same extent.

In what follows the equations for the demand and for the supply side will be developed. Later on the investment-wage will be introduced into these equations. A production function with fixed coefficients is assumed.

3. These proposals assume that the saving-ability has to be strengthened before an increase of the propensity to save can be expected.


For a different opinion see: Erwin Häussler: Der Arbeitnehmer von morgen... op. cit., p. 19.

5. Alois Oberhauser: Die wirtschaftlichen Auswirkungen... p. 41.
The Derivation of Aggregate Demand

The following equations of the circular flow of income hold true:

(1) \( Y = W + R \) (income side) *

(3) \( Y = C + I \) (product side)

(4) \( Y = C + S \) (expenditure side.)

Solving (1) for \( R \):

(ia) \( R = Y - W \)

or

(1b) \( R = (I + C_r + C_w) - (C_w + S_w) \), where \( C_w \) = Consumption of wage-earners.

or

(2) \( R = I + C_r - S_w \).

Now our next step is to replace the ex post magnitudes by behavioural functions for \( I, C, \) and \( S_w \).

(5) \( I = k.Y \) where \( k \) = Investment-share

(6) \( C_r = c_r.Y \)

(7) \( S_w = s_w (Y - R) \)

Where \( c_r \) and \( s_w \) indicate the constant marginal and average propensities to consume of the profit-earners and to save of the wage-earners.

Further it is assumed that all economic units act without money illusion. The monetary policy is assumed to be flexible.

The Investment-share: The size of the constant investment-share determines—the marginal capital-output ratio is assumed constant—the rate of growth, which is planned by the entrepreneurs. Since the investment-share depends on many factors which are still not yet satisfactorily qualified, the introduction of a different investment-function than the chosen one does not lead to a more realistic model. 

The Consumption of the entrepreneurs: The consumption expenditures of the entrepreneurs should be related to their income (6) and not to their profits e.g.

(6a) \( C_r = c_r R \). It seems to be unrealistic to assume that fluctuations of the profits will be proportional to \( C_r \). Therefore, it seems reasonable to consider \( C_r \) as being determined by convention and changing proportionally in the long-run with the increasing national income. Consequently, it is here supposed, that \( C_r \) will not be influenced by changes falling within a particular range of \( R \) (e.g., the small reduction of \( R \) consequent to the introduction of the investment-wage need not affect \( C_r \)).

Substitution (5), (6), and (7) into (2) we derive:

\[
(2a) \quad R = kY + c_r Y - s_w (Y - R)
\]

After some reshufflings:

\[
(2b) \quad R = Y \frac{k + c_r - s_w}{1 - s_w}
\]

Or, if (2b) is related to \( Y \), then the expression for the income distribution as depending on the determinants of the demand side (D) can be derived:

\[
(8) \quad D_1 = \frac{R_1}{Y} = \frac{k + c_r - s_w}{1 - s_w}
\]

If \( k, c_r \), and \( s_w \) are given, then the profit-share \( \frac{R_1}{Y} \) and the income distribution are determined. The distribution is here completely independent of the wage-rate \( w \). \( w \) does not appear in (8). Consequently, nominal wage-increases lead only to a monetary expansion of the income, but the shares \( \frac{R}{Y} \) and \( \frac{W}{Y} \) remain constant.

Of these three variables \( k, c_r \), and \( s_w \), only \( s_w \) can be influenced by the decisions of the wage-earners. This is the strategic point for any incomes policy based on the concept of the investment-wage. The additional savings should follow from increased wage-rates without changing the price-level, \( c_r \), and \( k \).

Formula (8) is only applicable to the investment-wage to a certain extent because the independence of the investment-share and the consumption expenditures of the profit-earners from the saving-share of the wage-earners is, at best, valid only for a certain limited range of variations of \( s_w \). Concerning this range the relation (8) does not give any particular clue. How much \( s_w \) can be changed

7. If the relation (6a) is chosen, then of course equation (8) would be affected but the main conclusion of this model remains unchanged.


without decreasing $k$, is the crucial problem and determines the margin for an incomes policy in a market economy. Here it is assumed that a certain range exists within which the profit-share and the investment-share are independent in this respect, that a decrease in the profit-share (e.g., caused by the introduction of the investment-wage) does not cause a decrease in the investment-share. But there is "somewhere" a lower limit of the profit share, where this independence ceases. With the assumption of a certain flexibility for an income distribution without any negative effects on economic growth, relation (8) contains an operational characteristic of an incomes-policy.\textsuperscript{10}

**The Derivation of Aggregate Supply**

The derivation of the supply equation is based on the assumptions, that the production function has fixed coefficients and that the entrepreneurs determine prices by applying full-cost pricing.\textsuperscript{11} Furthermore the average wage-rate $w$ and the mark-up for the profit on wage-costs $g$ (as a percentage) are given. Under these assumptions the equation for the supply side can be derived as follows.

The total wage-bill is

\begin{equation}
W = H \cdot w,
\end{equation}

where $H$= amount of labour hours.

The total profit is

\begin{equation}
R = H \cdot w \cdot g.
\end{equation}

If profit is related to output $Q$ and to the amount of labour hours $H$ it is true that

\begin{equation}
R = Q \cdot z_q = H \cdot z,
\end{equation}

where $z_q$= markup for profit per unit of output, and $z$= markup for profit per labour hour

Or according to (10) and (10a)

\begin{equation}
z = w \cdot g.
\end{equation}

If the amount of labour hours in a single firm is denoted by $h$ and the output is $q$, then follows, in analogy to (10a), the profit per unit of output is

\begin{equation}
z_q = z \cdot \frac{h}{q}.
\end{equation}


\textsuperscript{11} Erich Preiser: Wachstum und Einkommensverteilung, Heidelberg 1961, p. 17.
For the wage-cost per unit

\[(12) \, w_q = w \cdot \frac{h}{q}\]

Wage-cost and profit per unit together determine the price per unit:

\[(13) \, p = w_q + z_q = \frac{h}{q} (w + z)\]

The individual profit-share can be defined as the ratio of profit per unit to price per unit:

\[(14) \, \frac{z_q}{p} = \frac{z_q}{w_q + z_q} = \frac{z}{w + z}\]

or because of (10b)

\[(14a) \, \frac{z}{w + z} = \frac{g}{1 + g}\]

If numerator and denominator of (14) are multiplied by the output of that total economy, then the macroeconomic profit-share is

\[(15) \, \frac{z_q \cdot Q}{p \cdot Q} = \frac{g}{1 + g} = \frac{R_1}{Y} = S_1\]

Thus (15) is the equation for aggregate supply (S). It describes the supply price, including the profit-markup, which can be realised at the prevailing market conditions of supply and demand. If \(D = S_1\) (see (8) and (15)), then the economy is in equilibrium. Neither in the demand nor in the supply equation does the wage-rate appear. The entrepreneurs will pass on in price an increase of the wage-rate, provided that the markup remains constant and the money supply is flexible. The impact of the insertion of an investment-wage in the above model has to cause a decrease in the markup on the supply side, and an increase of \(s_w\) on the demand side, provided that \(\epsilon\) and \(k\) do not change.

The Introduction of the Investment-Wage into the Circular Flow of Income

The increase of the wage-rate via the investment-wage is denoted by \(w_1 u\), where \(w_1\) means the wage-rate before the investment-wage has been introduced and \(u\) is the investment-wage as a percentage-markup on \(w_1\). This leads to the following quantitative modifications of \(s_w\), \(\epsilon\), and \(g\).
(a) The Impact on $s_w$

The wage-rate of $w_2$ after the introduction of the investment-wage is defined as:

\[(16) \quad w_2 = w_1 + w_1 u\]

The consumption expenditure of the wage-earners has to be unchanged, because the wage-increase, according to the concept of the investment-wage, is saved and used for financing of investment-projects. Consequently the consumption-share related to $W_2$ will decline and the saving-share will increase.

\[(17) \quad c_{w_2} W_1 = c_{w_2} W_2\]

Or if $W$ is substituted for by the product of $w$ and the amount of labour hours $H$:

\[(17a) \quad c_{w_1} H w_1 = c_{w_2} H w_2\]

After some reshuffling by considering (16), (17a) can be written:

\[(17b) \quad c_{w_2} = \frac{c_{w_1}}{1 + u}\]

If $c_{w_1}$ is replaced by $1 - s_{w_1}$ and $c_{w_2}$ by $1 - s_{w_2}$, then it follows:

\[(17c) \quad s_{w_2} = \frac{s_{w_1} + u}{1 + u}\]

This is the expression which has to be inserted into the equation for the demand side (8).

(17c) describes the increased propensity to save of the wage-earners ($s_{w_2} > s_{w_1}$) which can be interpreted as:

(a) The wage-earners consider the investment-wage as an ordinary increase in the wage-rate and they raise voluntarily their saving-share according to the size of the investment-wage;

(b) The amount of the investment-wage will be saved compulsorily and the wage-earners do not change their original saving-propensity. In this case there would be a combination of voluntary and forced savings.

Both alternatives assume unchanged original saving-propensities.

(b) The Impact on $g$

The wage-rate $w$ and the markup for profit on labour hour $z$ determine the price $p$, which should not be affected by the investment-wage. Because of (10b) and (13)
\[(13a) \quad p_1 = \frac{h}{q} w_1 (1 + g_1),\]
\[(13b) \quad p_2 = \frac{h}{q} w_2 (1 + g_2)\]

where \(w_1 = \) wage rate before wage increase,
\(g_1 = \) markup for profit on wage-cost before wage increase,
\(w_2 = \) wage-rate after wage increase,
\(g_2 = \) markup for profit on wage-cost after wage increase.

The relation for the new markup \(g_2\) can be derived, provided \(p_1 = p_2\), by inserting (16) into (13b).

\[(13c) \quad p_2 = \frac{h}{q} w_1 (1 + u)(1 + g_2)\]

By equating (13a) with (13c), and after some reshuffling

\[(18) \quad g_2 = \frac{g_1 - u}{1 + u}\]

This expression will be inserted into the supply equation. According to (18) the entrepreneurs have to decrease their markup, if the general equilibrium is to remain unchanged, i.e. apart from increasing wage-costs, the prices have to stay constant. But if they raise the prices and the wage-earners do not change their saving-behaviour, then the threat of output reduction and unemployment occurs.

The assumption of a declining markup \(g\) involves a crucial problem for this concept of an incomes policy.

(c) The Final Equations

The next step is now to insert the derived expressions for the increased propensity to save (17c) and for the reduced markup (18) into the equation of the demand side (8) and into the equation of the supply side (15) respectively. The modified equations are:

\[(19) \quad D_2 = \frac{R_2}{Y} = \frac{s\cdot I + u}{I + g_1 - u} + \frac{k + g_2 - I + u}{I + s w_1 + u}\]

\[(20) \quad S_2 = \frac{R_2}{Y} = \frac{g_1 - u}{I + u} + \frac{1 + g_1 - u}{I + u}\]
The impact of the investment-wage on the income distribution is expressed by the change in the profit-share. The introduction of the investment-wage leads to a decrease in the profit-share \( \frac{R_2}{Y} < \frac{R_1}{Y} \). Only if \( k \) and \( c_r \) can be assumed to be independent, at least for a certain range of the profit-share, and further if the changes in \( s_w \) and \( g \) can be realised, then and only then, the investment-wage is an efficient instrument of income policies.

Some Economic Problems of the Investment-Wage

In considering that the objectives of a more even distribution of wealth cannot be accomplished by voluntary savings, the concept of the investment-wage therefore assumes compulsory savings. The proposals concerning the obligatory period for the savings of the investment-wage differ quite substantially. Häussler suggests that certificates for the amount of the investment-wage might be given to the wage-earners after an obligatory saving-period of 18 months. From this moment on the wage-earners are unrestricted in their rights to dispose of the certificates. Hinkel proposes an obligatory saving-period of 2 to 5 years.

The introduction of any particular obligatory saving-period can only prevent the use of the investment-wage shares for that period. The crucial question is whether the wage-earners intend to hold their investment-wage shares voluntarily when the obligatory saving-period has passed.

Even if it is certain that the investment-wage share can be assumed to be permanent, we do not know too much about the development of the total savings of the wage-earners and its impact on the price level and on the distribution of wealth. As mentioned above \( s_{w1} \) is the saving-share before the introduction of the investment-wage and \( s_{w2} \) is the saving-share after \( (s_{w2} > s_{w1}) \), both assuming stability of the price level. Three different processes are possible:

(a) If the total savings of the wage-earners mount up to \( s_{w2} \), then and only then would no inflationary effect occur and the wealth of the wage-earners increases to the extent of the investment-wage.

(b) If the total savings remain at the value of \( s_{w1} \), i.e., the wage-earners are reducing their voluntary savings out of their cash-wages exactly to the extent of the investment-wage, then an inflationary effect would be the result depending on the excess of the wage-increase over the productivity gain.

(c) The total savings of the wage-earners can adopt any value between \( s_{w1} \) and \( s_{w2} \). This might be, for example, the result when the voluntary saving

remains unchanged and the shares of the investment-wage will be saved only for the obligatory period, but then immediately used for consumption purposes. The effect on the distribution of wealth caused by the investment-wage is then restricted just to the accumulated amounts of the investment-wage during the obligatory saving-period. The smaller the rate of dissaving will be after this period, the closer the total saving-share will approach to \( s_{w2} \). Anyway the inflationary effect will be smaller than in case (b).

The voluntary savings of the wage-earners after the obligatory saving period is a necessary prerequisite for the success of the investment-wage as an instrument of incomes-policies; otherwise it would be just a short-run episode for the distribution of wealth.\textsuperscript{15}

Problems of the Marginal Firms

The introduction of the investment-wage causes problems particularly for the marginal firms (firms with no or below average returns on investment). Because of their market position at assumed constancy of aggregate demand they are not able to shift the additional costs on to prices. Further these marginal firms will be affected particularly strongly by a demand reduction, caused by successful price increases by firms in a more favourable market position.

If it is not intended to accelerate the process of elimination of the marginal firms by the introduction of the investment-wage, because the level of full employment should remain unaffected, then the rate of the investment-wage should be differentiated, including full exemption for extreme marginal firms. By this the incentive to mobility of labour is enforced in high-wage firms, but this is neutral with regard to the level of employment, since the mobility outward becomes effective only when job-opportunities in high-wage firms are available.

Effects on the Price Level

In the discussion it is frequently mentioned that the introduction of the investment-wage would cause an increase of the price level and/or a reduction of production.\textsuperscript{16} This contains implicitly the assertion, that there is no possibility of a change in the income distribution at full employment levels and further that the incomes policy which tries to influence the saving behaviour will be considered as inefficient.

The reactions of the entrepreneurs to the investment-wage (concerning shift-on-effects) depends on.\textsuperscript{17}

\textsuperscript{15} Helmut Winterstein: *Der Investivlohn in der Bundesrepublik Deutschland*, Berlin, 1961, p. 67.
1. The attitude of the entrepreneur to the investment wage, whether he opposes or supports the political aspects of this incomes policy;

2. The constraint to deliver the shares of the investment-wage to an investment fund or on the possibility to hold the shares available in the firm.

If we assume that the investment-wage was introduced against the wishes of the entrepreneurs and that therefore they are not willing to pay the higher costs out of their profits, then it is realistic to expect:

1. Long-run changes in the combination of the factors of production between capital and labour.

These reactions of the entrepreneurs would lead to an increase of the real investment-share and therefore to an accelerated process of capital accumulation. No precise statement can be made concerning the development of the price level. In a growing economy with scarce supply of labour no replacement effects of labour forces may arise either in short-run or in the long-run.

2. Shift-on-attempts onto prices of the costs of the investment-wage.

Shift-forwards-effects at a constant aggregate demand: The possibility for shifting forwards depends mainly upon the price elasticity of demand for each single producer and upon the cost curves. For explaining the partial shift-forwards-effects we assume, that all firms of the economy are grouped in three sectors.18

(a) The firms are paying the costs of the investment-wage out of their profits by unchanged produce-prices and unchanged demand.

(b) Full or partial shifts-forwards of the costs of the investment-wage on the product prices with or without reduction of output.

(c) The firms bear the costs of the investment-wage and suffer an additional reduction of their profits because of a diminished demand.

In all three sectors (except in sector 2 with a successful shift-forwards) a differentiated reduction of the profits occurs, depending on the price elasticity of demand and on the degree of the labour intensity of the production process. The appearance of unemployment is very likely.

Shift-forwards-effects at an increasing aggregate supply:

The differentiations of the process in these three sectors will remain qualitatively the same, but the reduction of the output will be less and the increase of the price level will be larger.

In general one can assume that the adjustment-process of the economy to the investment-wage will cause a slight increase of the price level, but this increase probably lightens the adjustment process. The accumulation of wealth of the wage-earners increases nominally with the size of the investment-wage, but in real terms it is diminished with the rate of the change of the price level.

18. Alois Oberhauser: *Die wirtschaftlichen Auswirkungen* ... *op. cit.*, p. 42.
The Impact in the Investment-Share

It is of crucial importance whether the assumptions of an unchanged investment-share holds true or whether and how the investments react to the investment-wage. This depends on the determinants of the investments, but opinions concerning them differ largely. It is rather probable that the entrepreneurs will decrease investments because of the profit-reduction and therefore by themselves cause additional profit-reductions and threaten the employment level.

The more independent the investments are of profits the less will be the change of the investment-share. According to empirical experiences it seems that investment is more influenced by other factors than profits, as long as a "reasonable" profit can still be realised. 19

Two further points concerning the impacts of the investment-wage have to be considered. The investment-wage can be introduced only once (maybe step by step) and not permanently increased in relation to the wage-bill or to the national income. This means the economy has to go through the process of adjustment only once, but after the changes in the income shares have taken place no additional effects are caused anymore from the investment-wage.

Furthermore these adjustment processes will be more smooth in an expanding economy than in a stationary economy. If the investment-wage is introduced step by step in the different industries, then the changes in the income shares will take place in such a way, that the profits will not decrease absolutely, but they will only grow more slowly. 20

Conclusion

As long as the wage-earners consider the present income—and wealth—distribution as too unjust and too inequitable, it is unrealistic to assume that in wage negotiations the economic conditions for stability of the price level will be sufficiently appreciated. But if it is possible with the investment-wage to change the distribution of income and the increase of wealth in favour of the wage-earners to an extent which is compatible with a market economy, then one can rather expect that the trade unions are willing to give up the ineffective nominal wage policy.

The investment-wage becomes then the instrument which makes it possible to bring the objective of income distribution into harmony with the objectives of stability and the desideratum of economic growth.


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