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THE SHORTENING OF WORKING-HOURS AS CAUSE
OF THE ECONOMIC CRISES

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THE SHORTENING OF WORKING-HOURS AS CAUSE OF THE ECONOMIC CRISES

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When the question of the shortening of working hours was being considered as a means of redressing unemployment and lured larger and larger interested circles into its ban, and finally became the subject of thorough investigations at the hand of the International Labour Office, people were strongly impressed by the thought that the division of the existing quantity of work into a larger number of available working hands should be made possible, and that in a manner, that the working hours of the individual holder of work should be curtailed without impairing the aggregate amount of working time. Whether this theoretical abstraction could be reduced to practice, and lead to the highly coveted end, namely to the removal of the curse of unemployment, is a point at issue requiring probation. If the advocates of the theory were right, a consequent shortening of working hours would be bound to be the natural result; the interests of the total of the world's economy being to abolish unemployment, or at any rate to commit the greatest possible number of unemployed men and women to regular labour and to a higher consumption of the fruits of labour. If the advocates, however, were in the wrong, and if that theory would not have diminished, or entirely abolished unemployment, then it would be a very grave error to persist in such a fallacy, for spectacular, political or demagogic reasons, and to raise hopes which can never be fulfilled.

It is therefore necessary to ascertain the agencies of the whole system of production established by a shortening of working hours, and thenceforward precisely to follow the right path of economic development and shunt all that is unessential.

We may be permitted to recur to researches made by the author in this district in 1932 (see the Austrian special journal "Industrie" copy 49 in 1931, and copies 3 and 44 in 1932) which were discussed at the Preliminary Technical Conference on Reduction of Hours of Work by the International Labour Office in 1933.

To prove the increase in the cost of production which is bound to result from a reduction of the hours of work, a plain formula had to be found out to express the cost price, as hereafter. In fact, the cost price may be divided into proportionate (or

varying) working expenses: P ; fixed working expenses: F ; and social contributions: S . With reference to the latter it should be observed that social contributions may vary according to the various systems of social insurance in force, but that they cannot however be regarded as proportionate expenses. The total cost price would thus be equal to $P + F + S$.

We are trying to appraise the degree of variation arising in the cost price of one unit of production when affected by a reduction of the working time. Now the cost price per unit would be equal to the total costprice divided by the Output: O .

Hence: Cost price per unit:

$$CPU = \frac{P + F + S}{O} \text{ or } \frac{6P + 6F + 6S}{O}$$

Should the output (meaning the output of the undertaking as a whole, and not the individual output of the worker) diminish just as much as the working period is shortened (the latter becoming of 40 h. instead of 48 h.) our costprice-per-unit-formula would become:

$$CPU = \frac{5/6 P + F + S}{5/6 O} \text{ or } \frac{5P + 6F + 6S}{5O}$$

which means that the cost price per unit must increase, since a part of the total cost price remains incompressible.

But the defenders of a shortened working week are not contented with this reduction only. They claim also a proportionate increase of the working forces, through which the productivity or output would be restored to its previous level. But increase of the working forces means increase in social contributions, which would restore the proportionate working expenses also at their previous level, so that our formula becomes:

$$CPU = \frac{P + F + 7/6 S}{O} = \frac{6P + 6F + 7S}{6O}$$

which means that the cost price per unit would show a fresh increase.

If finally a proportionate rise in the wages were to take place together with the increase in working forces, our formula would appear as follows:

$$CPU = \frac{7/6 P + F + 7/6 S}{O} = \frac{7P + 6F + 7S}{6O}$$

which means a still greater increase in cost price than in the preceding case.

Our formula is founded on the very optimistic assumption that the increase in the number of workers employed would not entail a variation in the fixed working expenses through fresh investments, enlarging the plants, a. s. o., and this assumption will certainly not be true in all cases. Each variation of the fixed working expenses would again affect our formula unfavourably. The various aspects of our formula have this in common that they show an increase in the cost of production, by all means the opposite of what might occasion a bettering in employment conditions. A decrease in the cost of production could only be obtained by diminishing the value of P , F , or S , or by increasing the value of O .

The entire prime cost ($P + F + S$), however, as proved below, being sheer costs of wages, each increase in costprices must entail an increase in prices altogether. Under three conditions only could this consequence be avoided:

a) when the profit margin is so large that the increase in cost price can easily be taken on it. But this cut in the security premium paid to the investors would finally avert capital from production, as the history of last years' depression has taught us;

b) when the increase in cost prices resulting from a shortened working period may be offset by a decline in wages. As a matter of fact, the increase in cost price being limited by the price level, any rise of the wage ratio at one stage of the process must be accompanied by a fall of this ratio at a preceding or at a following stage. It is indeed obvious that the total proportion of wages cannot exceed 100 p. c. of the cost price;

c) when the increase in cost prices through reduction of working hours can be offset by any other measure (rationalisation, mechanisation, a. s. o.) which according to the theories on technocracy and technological unemployment would mean further displacement of workers and, consequently, a fresh rise in unemployment figures.

Another preparatory work rendering valuable services to an elucidation of the true bearings of the case was done by the *Austrian Institute for Trade Cycle Research**) with the aid of the Chief Association of the Austrian Industries**) in the course of 1932: An inquiry into the wages quota in the various professions (Appendix 1 to the monthly reports of the *Österreichisches Institut für Konjunktur-*

forschung, 6th annual republication, booklet 12, December 24th, 1932).

Similar investigations partly with the aid of the methods of the *Österreichisches Institut für Konjunkturforschung*, partly by their own methods were made by other states too. It is to the *Comité Central Industriel Belge* that we owe a summary of the greatest parts of the researches in various countries, published in 1933. It would lead us too far to enumerate in detail the issue of these researches, as they are already forthcoming in the above mentioned publications. All these investigations quite naturally resulted in the conclusion that in a pro rata juxtaposition of the wage-tangents of the special phases of production, from the supply of raw material to the final disposal of finished goods to customers the essential and real costs of production are composed of the costs of wages nearly exclusively. Each increase in the costs of wages must through a link on the long chain of production lead to a parallel rising of the total of the cost of production.

This preparatory work threw in the first place light on the fact that the preeminent question was to ascertain how a shortening of the hours of work effected wage expenditure as — more particularly from the point of view of the world economics which alone is admissible to the judging of an international problem — the costs of production are to be placed on the same level with the cost of wages. Theoretically, the effect on the costs of wages will be multifarious according to whether the diminution of the time of work is followed by a levelling of wages or not; we must in these respects never yield to an act of self-deception, even if some champions of the shortening of the hours of work decline an adjusting of wages — there are but very few of this kind — a falling out of wages resulting from shorter working hours will indubitably lead to a strong pressure on the level of wages, a pressure that nothing in the long run can resist.

The research work done in this connection by Dr. Sepp Heidinger, Engineer, is of paramount importance. It was published in 1934 by the Austrian Board of Trustees for Thrift in Economic Life — (*Österreichisches Kuratorium für Wirtschaftlichkeit*) as a report on the question „Warum bauen wir so teuer?“ (Why are we building so dear?). Among the numerous items proved by figures Heidinger's computations of the *Prime-cost per working-hour* (see page 50 ff.) are important. Heidinger frames the price of the work accomplished during the working hour out of the wage of the

*) (*Österreichisches Institut für Konjunkturforschung*.)

**) (*Hauptverband der Industrie Österreichs*.)

worker paid per hour, in addition to the costs of social contributions which the employer has to bear, and the wage tax. In the two following synopses gathered from Heidingger's work the prime cost of one working hour of a bricklayer at Graz in 1914 are contrasted with that in 1932.

In 1914, the working week being of 57 hours:

1. Weekly earnings of the bricklayer K 32.49 = S 46.78
2. Social contributions of the employer:
 - Illness insurance K 0.32
 - Accident insurance K 0.70 K 1.02 = S 1.47

Participation of the employer in social contribution in p. c. of the wages = 3.14 p. c.

Cost price of the working week K 33.51 = S 48.25

In 1932, the working week being of 48 hours:

1. Weekly earnings of the bricklayer S 64.32
2. Social contributions of the employer:
 - a) Illness insurance S 0.90
 - b) Accident insurance 1.04
 - c) Unemployment insurance 2.94
 - d) Holidays with pay 1.34
 - e) Wage indemnity 5 p. c. 3.21 S 9.43

Participation of the employer in social contributions, in p. c. of the wages = 14.6 p. c.

Cost price of the working week S 73.75

According to this schedule the rising of the prime cost of a working week amounts to 52.8%, that of a working hour to as much as . . . 82 %.

Part of this disproportionate rise is to be traced to the increase of the burden of social contributions a considerable part of which devolves on unemployment insurance. We will therefore extract the real effect of a shortened working week and lose sight of the social burdens altogether, a process which is certainly open to argument on account of the dropping of unemployment insurance — and even then a rise in the costs of the pure wage expenditure in a working week from S 46.78 to S 64.32 that is to say 37.7% and from S 0.82 to S 1.34 in a working hour that is to say 63.3% is evident. While the quota of the prime-cost of working hour — always neglecting the expenses of social legislation burden — has risen by 63.3%, the weekly income of the bricklayer, which certainly represents his purchasing power, has risen only by 37.7%.

In pursuing the same process in all the trades of a country — and in fact, there is a uniform development within a large space of time in the wage conditions of the whole country, and beyond one's own country, one can discern the same process in all other industrial countries, — then there is not the slightest doubt about the decisive agents of the world crisis. As a consequence of the shortening of the working time the standard figures of the worker's weekly income fall behind the manufacturing costs of one working hour, therefore un-

employment will always be on a rising scale, as more money is invested in the manufacturing of goods than one can clear by their sale.

The proof of this example is at present carried before our eyes — as men dont want to take note of the disastrous event of the late general shortening of working hours — by a gigantic experiment.

The United States have placed the shortening of working hours in the service of the fight against unemployment, and desire conjointly to maintain, nay enhance, purchasing power at home by proportionate wage balance, — we had better call it wage increase. This expresses in a few short words the essence of the N. I. R. A. as far as it attracts our interest in the above mentioned points. A precise control of the issue of this gigantic experiment is quite possible to-day — 18 months after its inception. The figures of the *National Industrial Conference Board*, monthly published, relating to 25 different branches of industry are the basing elements of the inquiry as specified below.

We confine ourselves in Synopsis I to the reporting of average earnings per one hour and per one week, average weekly profits, index of employment, and average weekly working time per wage earner from July 1933, the starting point of the N. I. R. A.

In inspecting these columns of figures carefully we are struck by the great difference in the vacillations of the hourly wages and the weekly earnings. The diminution of the weekly earnings caused by the shortening of the time of work by 20% is so large that an augmentation by 30% of the hourly wages is requisite to maintain the original weekly income. We see from columns *c* and *d* that in spite of a 20% shortening of working time the number of employed hands increases only by 10%. On

Synopsis I

Date	Average Earnings Hourly	Average Earnings Weekly	Index of Employment Base 1923 = 100	Average Actual Hours per Week per Wage-Earner
	a	b	c	d
1933				
July	455=100	19.15=100	68.9=100	42.6=100
August	497=109.23	19.25=100.52	74.8=108.58	38.8= 91.1
September	531=116.7	19.46=101.61	76.9=111.62	36.8= 86.4
October	540=118.69	19.46=101.61	77.2=112.05	36.2= 84.7
November	545=119.78	18.51= 96.67	73.3=106.38	34 = 79.8
December	550=121.09	18.58= 97.03	73.8=107.11	33.8= 79.3
1934				
January	551=121.10	18.89= 98.65	74.2=107.69	34.3= 80.5
February	558=122.65	19.81=103.44	77.7=112.78	35.5= 80
March	561=123.30	20.40=106.99	81.4=118.11	36.4= 85.42
April	579=127.25	20.90=109.3	84.1=122.06	36.1= 84.72
May	587=129.01	20.78=107.22	85.0=123.39	35.4= 83.10
June	586=128.79	20.70=106.81	83.2=120.77	35.4= 83.10
July	587=129.01	19.92=102.78	80.8=117.29	34.1= 80.02
August	588=129.02	19.59=101.08	79.5=115.38	33.5= 78.64
September	591=130.00	19.35=100.08	75.0=108.85	33.3= 78.10
October	593=130.02	20.03=103.33	76.1=110.45	34.0= 79.81

account of these facts the thought suggests itself how they effect the class of working men as a whole. Let us, therefore, consider the employed and un-employed individuals as an entity, for the multiplication of the isolated result by the number of the employed would have yielded only the very un-interesting multiplex of the isolated results. Therefore it had to be affirmed, how the shortening of the working time and the change in the weekly income through wage balancing have reflected on 100 members of the working class. The issue of this contemplation is set forth in synopsis II.

While synopsis I contains the original figures from the Conference Board Service Letters, and only the rate of percentage is calculated by ourselves, in the following synopsis II the total weekly time for every hundred members of the working class (people in and out of work summed up) is calculated out of the average weekly time and employment index, out of which the total weekly income is calculated. Finally a third column of figures is set up which we call the *Index of Purchasing Power*. As we have proved through the above that each augmentation of the cost of wages will bring about the very same increase of the prime cost, if such increase of wages is extended over the whole sphere of production of a single body economic, nay of the entire world economics, we may without committing ourselves to an error place in our calculations the index of hourly wages as the index of prime cost, obtaining from the difference between these standard figures and the total weekly income the index of purchasing power

Synopsis II

Date	Total weekly working time for 100 members of the working class calculated out of the employment index and the weekly working time of each worker	Total weekly income for 100 members of the working class calculated out of the employment index and the average weekly income of each worker	Index of purchasing power (Difference resulting from columns a and f in proportion to 100)
	e	f	g
1933			
July	2935·14=100	1319·43=100	100
August	2902·24= 98·87	1440·70=109·13	99·90
September	2829·92= 96·25	1496·47=113·41	96·71
October	2794·64= 95·22	1502·31=113·86	95·17
November	2492·20= 84·91	1356·78=102·83	83·05
December	2494·12= 84·99	1371·20=103·91	82·82
1934			
January	2545·06= 86·71	1401·63=106·23	85·13
February	2758·35= 94·00	1539·23=116·65	94
March	2962·96=100·94	1667·88=126·40	103·10
April	3036·01=103·43	1757·69=131·63	104·38
May	3009·00=102·51	1766·30=132·28	103·27
June	2945·28=100·35	1722·24=128·98	100·19
July	2755·28= 93·88	1695·53=126·98	97·97
August	2663·25= 90·73	1357·40=116·63	87·61
September	2497·50= 85·09	1464·75=109·69	79·69
October	2587·40= 87·15	1524·28=114·15	84·13

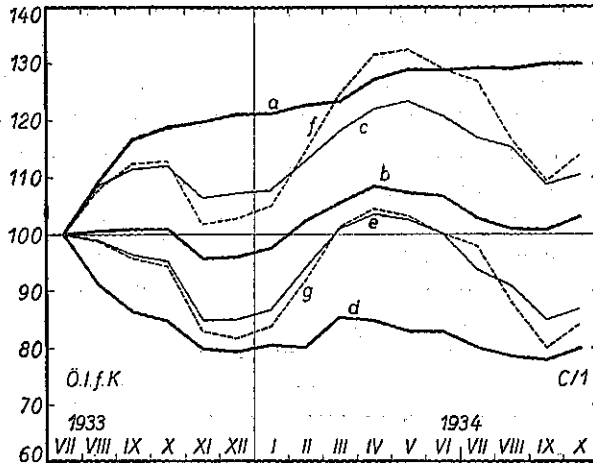
We gather from synopsis II that the total of weekly working time has not been maintained but that a loss of working energies of 13% is to be put on the debit side of the United States economy, an effect which was certainly not intended by the originators of the idea of work shortening. We further see that the total income resulting from wages in spite of a 30% augmentation of the latter and a 10% increase of the employment index displays an addition of about 14% only as a sequel to the pernicious shortening of working time. And we finally see from column 7 (and that is the decisive conclusion) that the royal thought of the N. I. R. A. viz. the maintenance of the purchasing power has miserably shipwrecked as the index of the purchasing power displays a shrinkage of 16%.

Is is evident that the said index does not demonstrate the manipulated purchasing power, paying no regard as it does to fluctuations of currency. But already the fact of a necessity of currency manipulation, or a depreciation of the Dollar without any manipulation proves the correctness of our assertion, that the shortening of working time with an express wage balance will lead up to the same disastrous destruction of the purchase power, as we have seen in the case of the Graz bricklayer with a tacit wage balance. Finally the result of our investigation shall be summed up in a graphic representation, as in such shape of representation the disastrous effects of the American experiment can be expressed most convincingly. Apart from the development displayed by the single curves for themselves, we can discern the following actual facts from this diagram.

1. The curve of employment (c) shows after an initial symmetrical trend to the curve of working time (d) a complete revulsion after 3 months, in order to run thenceforward almost parallel with the curve of the working time. The slight prolongation of working time in March and October 1934 give the index of employment already a strong and long aftereffect producing impulse to an upward tendency.

2. The total of weekly working time (e) ought to have remained unaltered according to the theory of those who want to effect only a more rational division of working time. But what we actually see instead is the sinking of its curve (e) with the shortening of the working time of the individual working man and the rising of the curve with its prolongation.

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3. The curve of the total income (f) takes its course only in the first three months parallel with the curve of hourly wages (a), thenceforward it displays its dependence on the working time (d) and the employment index (c), through a parallel course with the two latter curves.

4. The curve of the average hourly wages (prime cost) (a) follows its course regardless of these elementary events although the flaw in all the remaining curves in the 4th month clamours for revulsion.

5. The absolute parallelism of the curve of the purchasing power (g) with the curve of the total working time (e) says no more and no less than the old adage: "The less you work the less you will have to eat."

6. The working man, who in spite of the augmentation of his hourly wages by 30% will bring home on payday only 3.33% more income, can buy as against this 26.66% less. The additional employment of the other workers is but a poor consolation for him, as the total purchasing power of the working class still shows a shrinkage of 16% against July 1933. The partial equalisation through Dollar depreciation for the home purchasing power is again but a poor consolation for the rest of the world, for in the same proportion as depreciation proceeds, the American consumer must as a buyer recede from the world market.

7. And if all industrial states of the globe would go through the same experiment as the United States we should be exactly where we are now: in a catastrophic crisis on account of shortening of the working time.

* * *

If in conclusion we put the question before us, when the right hour for a further shortening of working time has struck, so that working classes should participate in the achievements of modern technical progress, we shall certainly find the answer in our graphic picture: that it cannot come at a time of universal economic crisis, we dare say we have proved conclusively. When, however, through putting our shoulders to the wheel — this is not the place to busy ourselves with the causes of political and financial crises, — that is to say through gradually abolishing short time work under simultaneous sinking of hourly wages, so that the prolonged working time with a lower rate of wage will yield a better weekly income, and as a further consequence of this reduction of prime cost — with a simultaneous upward tendency of purchasing power — a much better demand in the world markets will set in, which in turn will bring back all the unemployed men and women to their respective working plants, thus rendering them ample consumers; when general wealth will spread over all countries, then, and only then will be the hour to reduce working time. For, then, the shortening of working time will not engender any demands for an increase of wages and thus cause an increase of prime cost and an eradication of hands, but will lead us to an absorption of the ever increasing number of working hands; well then, only in a period of saturated world economy, on a much higher standard of life, and not with the erroneous intention thereby to abolish unemployment, but with the full consciousness thereby to avoid the very same evil.

Unemployment is only a symptom and not a disease proper. In removing the causes of the disease, — we are now perfectly aware what they are like — these symptoms will automatically vanish.

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