Chapter 4
The Great Depression: A Tale of Three Paradigms

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Abstract In this article we articulate three distinct paradigms about the cause of the Great Depression. These three paradigms are: the neoclassical view epitomized by Murray Rothbard and William Hutt, the intermediate view of Peter Temin, and the underconsumptionist views expressed by Herbert Hoover and Henry Ford. We present empirical evidence in favor of the Rothbard–Hutt view. The neoclassical labor market adjustment mechanism that effectively reversed the downturn of 1920–1921 did not operate in the mid-to-late 1930s, perhaps because of underconsumptionist ideology.

4.1   Introduction

> Nearly everything in this country is too high priced. The only thing that should be high priced in this country is the man who works. Wages must not come down, they must not even stay on their present level; they must go up. And even that is not sufficient of itself–we must see to it that the increased wages are not taken away from our people by increased prices that do not represent increased values.

With that statement reported in the *New York Times* (Gallaway and Vedder 1997, p. 92), Henry Ford set forth his formula for dealing with what was perceived to be rising economic distress following the stock market crash of the Autumn of 1929. Ford's remarks are reminiscent of the economics of John A. Hobson, who in the early 1920s disagreed sharply with what he felt was the conventional orthodoxy of the day, viz., that, "In depressed trade, with general unemployment, business men have considerable support from economists in calling for cuts in real wages..." (Hobson 1923, p. 84). Hobson's counterarguments bear a striking similarity to some of the reasoning presented over a decade later in Chap. 19 of Keynes' *General Theory*, employing the interrelationships between wage levels, consumption (i.e., effective demand), and prices (Keynes 1936). This underconsumptionist view was fairly widespread. Herbert Hoover, with the support of business leaders (including Ford) in attendance at

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a November 21, 1929, White House conference espoused it, as represented by his
statement summarizing that conference (New York Times 1929, p. 1):

> The President was authorized by the employers who were present at this morning's confer-
> ence to state on their individual behalf that they will not initiate any movement for wage
> reduction, and it was their strong recommendation that this attitude should be pursued by
> the country as a whole.
>
> They considered that, aside from the human consideration involved, the consuming power
> of the country will thereby be maintained.

The support for an underconsumptionist oriented policy approach would be under-
standable coming from either the political or trade union sectors of the economy.[1]
From the business sector, though, it may seem somewhat surprising.[2] Rothbard
(1963), p. 45 offers an explanation as to why business leaders would support such a
policy:

> As early as the 1920s, 'big' businessmen were swayed by 'enlightened' and 'progressive'
> ideas, one of which was mistakenly held that American prosperity was caused by the payment
> of high wages (rates) instead of the other way around .... By the time of the depression ...
> businessmen were ripe for believing that lowering wage rates would cut 'purchasing power'
> (consumption) and worsen the depression....

As to Hoover, his memoirs and papers suggest that he found morally and intellec-
tually unacceptable the means employed in dealing with earlier incidents of depressed
economic conditions. He termed it the "liquidation" of labor and he opposed it on two
grounds. First, "labor was not a commodity: it represented human bones". Second,
the underconsumptionist doctrines already discussed had clearly captured Hoover's
mind (Rothbard 1963).[3]

Of course, the critical question in this respect is whether the formally stated policy
positions of some business leaders and the President had any actual impact on the
behavior of wage rates. Rothbard believes they did, but at least two chroniclers of the
history of this era suggest that wage stability was not maintained. Broadus Mitchell
(1947, p. 84) claims that, "The obligation [of industry] not to cut wages was ... widely
dishonored" and Arthur Schlesinger Jr. states that, "The entire wage structure was
apparently condemned to disintegration (Schlesinger Jr 1957, p. 249)". The whole
thrust of Rothbard's argument is that the underconsumptionist posture of Hoover and
the business leaders interfered with the normal processes of labor market adjustment,
a view that is concurred in by W.H. Hutt.[4] Interestingly, an intermediate view is that

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[1]For example, the position of the American Federation of Labor (AFL) at this time is suggested
by a statement by the AFL's John P. Frey in 1929 relating to a public works scheme of Hoover's.
Frey's statement was to the effect that the President was in agreement with the AFL's position that
depressions were the result of underconsumption and low wages. See Dorfman (1959), pp. 349–50.

[2]Not to be ignored in this respect is the fact that ideas such as Hobson's and Hoover's were not as
unorthodox among professional economists as sometimes claimed. See Davis (1971) pp. 94–99,
who presents an interesting array of statements by economists and other academics relating to the
issue of the impact of wage reductions on the economy.

[3]For more on the underconsumptionist doctrine and Hoover, see Chap. 8 of Rothbard (1963).

[4]Hutt's views on the general subject of the underconsumptionist position are well summarized in
his essay "Illustration of Keynesianism" from Hutt (1971).

of Peter Temin, who offers certain statistical data to suggest that the real wage rate did not rise during the Great Depression (Temin 1976). Temin's purpose in presenting these data is to demonstrate that the neoclassical argument that unemployment was caused by real wage rates being too high is invalid.

Evaluating whether the announced goal of maintaining relatively high real wage levels was achieved during the Great Depression is complicated by the dilemma of determining what is the "normal" pattern of behavior of real wage rates during a downturn in the business cycle. Normal in the neoclassical theory that Hobson attacked would be the high levels of real wage rates advocated by the underconsumptionists, while normal for the underconsumptionists would be the low levels desired by the neoclassicists. To at least partially deal with this problem, we will compare the early period of the Great Depression with a similar interval during the economic crisis that marked the immediate post-World War I period. That economic downturn is chosen for comparison purposes because it initially shows an almost identical degree of decline in employment levels. Measured by the Federal Reserve Board series on factory employment, the post-World War I downturn begins in the second quarter of 1920. By fourth quarter 1921 (a period of seven quarters into the cycle), employment levels have fallen to 72.9 % of what they were in the first quarter of 1920. The downturn in factory employment in the Great Depression begins in the fourth quarter of 1929. By the second quarter of 1931 (seven quarters into the depression) employment is at 73.6 % of the third quarter 1929 level.

A further problem is the choice of a suitable real wage measure. At the heart of the underconsumptionist position are certain notions about the impact of the distribution of income on levels of aggregate effective demand. Hobson argues that a ceteris paribus increase in the real wage rate will redistribute income from the propertied to the laboring classes with an appropriate stimulus to consumption (Hobson 1923). If this is the underconsumptionist position, and we believe it is, the critical real wage measure is one that controls for changing levels of productivity (i.e., alterations in the per capita level of real income brought about by increases in total factor productivity).[5] Thus, what is important to the underconsumptionists is a change in the real wage rate which results in its being higher than would be expected given the change in productivity per unit of labor that occurred in the same period.

4.2 The Adjusted Real Wage

Such a wage measure, which we shall call the adjusted real wage, can be calculated from data available in the various issues of the *Federal Reserve Bulletin*. The specific measure of the we have calculated is given by

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[5]All other variants of the underconsumption argument that we are familiar with come back to the same basic position, viz., there is a positive relationship between the level of wage rates and employment. See, for example, Foster and Catchings (1925) or (1927).

Table 4.1 Comparison of employment and adjusted real wage

Cycle referenced on first quarter 1920		Cycle referenced on third quarter 1929	
Cycle in quarter	Employment	Adjusted real wage	Employment	Adjusted real wage
1	100.0	100.0	100.0	100.0
2	97.6	94.6	96.2	112.5
3	93.5	104.8	90.1	115.7
4	83.2	122.1	87.7	109.3
5	71.2	133.1	82.9	120.1
6	71.6	150.3	78.7	126.7
7	71.1	139.9	74.1	117.0
8	72.9	128.8	73.6	119.8
9	73.6	120.9	71.6	125.8
10	76.7	118.3	67.4	130.5
11	81.2	114.8	64.6	126.7
12	85.6	107.4	60.1	127.2

Note Comparison is for first 12 quarters of the 1920–1922 business cycle and the Great Depression

$$R = \frac{W}{OP} \tag{4.1}$$

where R denotes the adjusted real wage in manufacturing, W is the manufacturing wage bill (given by the data series describing total factory payrolls), O is the Federal Reserve Board index of industrial production, and P is the wholesale price level.

While this expression may seem unusual, the real wage (w_r) equals the money wage (W_m) divided by the price level (P), i.e., $w_r = W_m/P$. The average productivity of labor equals the total real output (O) divided by the quantity of labor employed (L), i.e., $\pi = (O/L)$. Dividing the real wage by the average productivity of labor to obtain the adjusted real wage (R) gives $(W_m/P)/(O/L)$, which simplifies to $(W_m/L)/(OP)$. The numerator is the total wage bill and the denominator is the money value of total output and income.

The calculated values of R and the level of employment during the downturns that began in the second quarter 1920 and fourth quarter 1929 are shown in Table 4.1. All data series are in index number form, with the quarter before beginning of the downturn set equal to 100. The pattern of movement in the real wage rate statistic in the 1920 cycle is one of constant upward movement after the second quarter of the cycle through the sixth quarter and then a decline through the twelfth quarter. At that point, the wage variable is only 7.4% higher than it was in the first quarter of 1920. In the cycle beginning in 1929, the movement is more consistently upward with the peak coming in the tenth quarter of the cycle. By the twelfth quarter, the wage variable is still 27.2% greater than it was in the third quarter of 1929.

The adjusted real wage rate data of Table 4.1 are suggestive that real wage levels were maintained, and in fact increased, during the Great Depression to a far greater

extent than they were during the 1920–1921 depression in economic activity.[6] This would seem to reflect adversely on the Hoover–Hobson–Ford version of underconsumptionism while being supportive of the Rothbard–Hutt view of the events subsequent to 1929. However, it does not constitute a formal test of the opposing views nor does it come to grips with the intermediate position taken by Temin and supported by certain of Keynes' theoretical notions. The Keynes–Temin view is that wage changes are basically irrelevant, being neither the cause nor the cure for the unemployment of the 1930s.[7]

It should be noted that in some respects it is perhaps unfair to ascribe fully to Keynes this intermediate view that wage changes are irrelevant. Keynes agreed with the basic neoclassical premise that unemployment was associated with the real wage rate being out of equilibrium on the high side (Keynes 1936). It is only after one reaches such a position that Keynes argues that wage changes will have no effect. His view on the role of the wage rate, though, as a fundamental source of unemployment is essentially the same as that taken by Rothbard and Hutt. Thus, assigning Keynes solely to one of these three positions is something of an exaggeration. However, on balance, he is probably closer to the intermediate position.

4.3   Testing the Three Paradigms

To more fully evaluate the various paradigms that have been advanced to explain the events of the 1930s, we will begin by defining a model that is essentially neoclassical in character, i.e., of the Rothbard–Hutt type, and attempt to empirically evaluate its validity. The neoclassical view of the labor market adjustment mechanism can be described through a basic supply and demand model. Define the demand for labor as

$$D = f(R), f'(R) \, 0 \tag{4.2}$$

where D denotes the demand for labor per unit of the population in the economy. Similarly, the supply of labor per unit of population (S) is given by

$$S = \phi(R), \phi'(R) > 0 \tag{4.3}$$

Equations 4.2 and 4.3 can be combined to provide an unemployment rate (U) equation

$$U = \frac{(S - D)}{S} = \frac{[\phi(R) - f(R)]}{\phi(R)} \tag{4.4}$$

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[6]Others have made this observation. For example, Wolman (1931) observed, "It is indeed impossible to recall any past depression of similar intensity and duration in which the wages of prosperity were sustained as long as they have been during the depression of 1930–1931".

[7]See Temin (1976), p. 140. Specifically, Temin remarks "…. in the post war debate over the Keynesian system, one of the dominant questions was whether an unemployment equilibrium was possible. The consensus now seems to be accepted that in the long run it is not".

Differentiating 4.4 and keeping in mind that $\phi(R)$ and $f(R)$ are always positive, it can be shown that

$$\frac{dU}{dR} > 0 \tag{4.5}$$

Thus we may write a first approximation of 4.4:

$$U = a + bR \tag{4.6}$$

This may be further expanded by defining R in the current period as follows:

$$R_t = R_{t-1} + \dot{w}_t - \dot{p}_t - \dot{\pi}_t \tag{4.7}$$

where t and t_1 represent different time periods, $\dot{w}_t$ is the rate of change in money wage rates, $\dot{p}_t$ is the rate of change in the price level, and $\dot{\pi}_t$ is the rate of change in productivity. All rates of change are between times t and t_1.

Combining 4.6 and 4.7 yields the following reduced form equation for the full model:

$$U_t = a + bR_{t-1} + c\dot{w}_t - d\dot{p}_t - e\dot{\pi}_t \tag{4.8}$$

This is the basic model we will test using annual data for the period 1901–1941. The use of annual data is necessitated because of a lack of information on unemployment rates for periods of less than a year. For this analysis we have used the standard data series for unemployment presented in *Historical Statistics of the United States* (Series D-86) (US Bureau of the Census 1975). Price change data are also taken from *Historical Statistics*, with the choice being Series E-135 for the consumer price index. Several options are available with respect to wage rate and productivity series. We have chosen to use two wage series, Lebergott's annual earnings of workers while employed (Historical D-724) and the David-Solar index of unskilled hourly wage rates (David and Solar 1977).

For productivity measures, we use John Kendrick's estimates, as reported in *Historical Statistics*, employing an annual output series with Lebergott's earnings series and an hourly series with the David-Solar wage measure (Historical D-724). Both sets of measures are included in the analysis at the same time. The rationale for this is that the Lebergott series measures average wage levels while the David-Solar series captures any differential movements in unskilled wage levels compared to the average. All data series are indexed with 1929 = 100. With all the variables included, the basic regression model (with the expected signs indicated) is:

$$\begin{aligned} U_t = a &+ b(R_{t-1})_L + c(R_{t-1})_{DS} + d(\dot{w}_t)_L + e(\dot{w}_t)_{DS} \\ &- f\dot{p}_t - g(\dot{\pi}_t)_L - h(\dot{\pi}_t)_{DS} + u \end{aligned} \tag{4.9}$$

where the subscripts L and DS denote the Lebergott and David-Solar data series (or the productivity series used with them), respectively, and u is a random error term. The estimation yields the results in Table 4.2

Table 4.2 Adjusted real wage regression

Variable	U_t
$(R_{t-1})_L$	0.7314
	(9.55)
$(R_{t-1})_{DS}$	0.3312
	(7.94)
$(\dot{w}_t)_L$	0.689
	(0.40)
$(\dot{w}_t)_{DS}$	0.2788
	(2.76)
$\dot{p}_t$	−0.8772
	(5.18)
$(\dot{\pi}_t)_L$	−0.6205
	(3.46)
$(\dot{\pi}_t)_{DS}$	−0.0314
	(0.18)
R-squared	0.9217
Adj. R-squared	0.9079
D-W	1.25

Note Absolute value of t-statistics in parentheses

The results are quite consistent with the basic hypotheses underlying the model. All variables have the expected signs and all but two (one money wage change and one productivity change variable) are significant at the one percent level or beyond. Collectively, the variables in the model explain over 90 % of the variation in the unemployment rate over the interval 1901–1941, a period that embraces such diverse events as the Panic of 1907, World War I, the prosperity of the 1920s, and the Great Depression.[8]

Of particular interest for our purposes is the performance of the model during the years 1929–1941, i.e., during the Great Depression and the approach to full recovery. Table 4.3 shows the actual unemployment rates for these years as well as the rates predicted by the model. An examination of the information shown there suggests that the neoclassical labor market adjustment model does a remarkably good job of explaining the behavior of the unemployment rate during the 1930s. This is a result that is quite consistent with the Rothbard–Hutt position and remarkably inconsistent with the Hoover–Hobson–Ford or Keynes–Temin paradigm of the Great Depression.

The earlier evidence comparing the first twelve quarters of the post-World War I business cycle and the Great Depression tends to confirm the results reported in Table 4.2. A diagrammatic representation of the data presented in Table 4.1 is given in Fig. 4.1. It shows that an economic downturn of greater initial severity than that beginning in 1929 was stemmed and then reversed by the operation of the neoclassical

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[8]The Durbin–Watson statistic for this regression equation is in the indeterminate range.

Table 4.3 Actual and estimated unemployment rates

Unemployment rate		
Year	Actual (%)	Estimated (%)
1929	3.2	3.4
1930	8.7	9.2
1931	15.9	15.4
1932	23.6	24.8
1933	24.9	23.3
1934	21.7	24.3
1935	20.1	22.4
1936	16.9	20.2
1937	14.3	16.9
1938	19	20.7
1939	17.2	17.6
1940	14.6	14.1
1941	9.9	8.6

Note Estimated unemployment rates obtained from the model in Table 4.2

Fig. 4.1 Comparison of adjusted real wage and employment, 1920–1922 business cycle and great depression
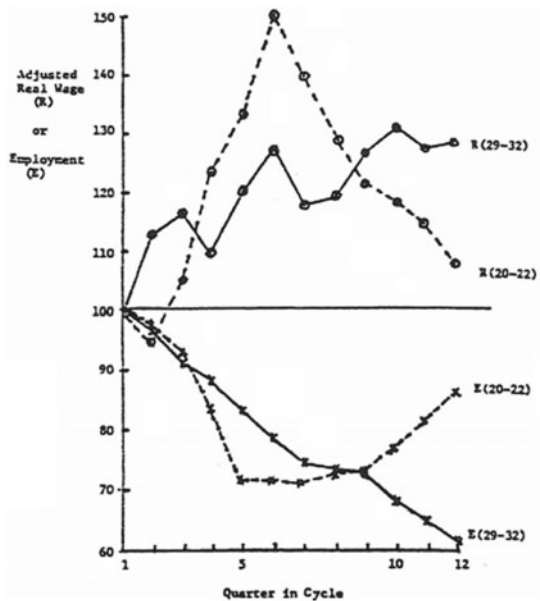
adjustment mechanism, which took hold some five to six quarters into the downturn, producing a reversal in the rise of the adjusted real wage.

By contrast, ten quarters into the Great Depression, the adjusted real wage peaked and declined only slightly in the next two quarters. It is worth noting that the patterns

of these two cyclical swings in economic activity are quite similar for the first six quarters. Thereafter, though, the adjusted real wage rate continues to rise during the Great Depression and employment continues to decline, just as predicted by the neoclassical model.

4.4   Conclusion

What can we conclude from this brief inquiry into the causes of the Great Depression? Basically, we have articulated three distinct paradigms, ranging from the neoclassical view epitomized by Rothbard–Hutt to the underconsumptionist position advocated by Hoover–Hobson–Ford. Of the three explanatory schemata, the Rothbard–Hutt argument clearly has the better of the empirical evidence.[9] A strong argument can be made that the Great Depression acquired the adjective "Great" precisely because the neoclassical labor market adjustment mechanism that so effectively reversed the rather severe economic downturn of 1920–1921 did not operate after mid-to-late 1930. To the extent that business leaders and political figures allowed their judgment to be clouded by the siren call of underconsumptionist ideology, they must shoulder a substantial part of the blame for the escalation of human misery that resulted from the intensifying of the Great Depression. Herbert Hoover may not have wished to "liquidate" labor, but the achieving of the policies he advocated did just that, reminding one of Chesterton's (1908) incisive commentary from page 31 of *Robert Browning*.

> It is when men begin to grow desperate in their love for the people, when they are over-whelmed with the difficulties and blunders of humanity, that they fall back on a wild desire to manage everything themselves. ... [the] belief that all would go right if we could only get the strings into our own hands is a fallacy, almost without exception, but nobody can justly say that it is not public spirited.

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[9]It is somewhat ironic to present empirical evidence to support a position advocated by Rothbard in that he would reject, on methodological grounds, the act of empirically testing propositions. So be it.

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