

VACANCIES AND UNEMPLOYMENT IN THE 1920s

T. J. HATTON

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Centre for Economic Policy Research
6 Duke of York Street
London SW1Y 6LA

Tel: 01 930 2963

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ABSTRACT

This paper examines the relation between vacancies and unemployment in the 1920s. This framework is used to test the predictions of the search-turnover approach to the labour market, implicit in recent arguments about the impact of unemployment insurance benefits in Interwar Britain. The econometric results do not support a stable inverse relation between unemployment and vacancies and undermine the search view of the impact of benefits. It is suggested that this is because the labour market was characterised by chronic excess supply of labour.

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T. J. Hatton
Department of Economics
University of Essex
Wivenhoe Park
Colchester
Essex
CO4 3SQ

0206 862286

SUMMARY

In the recent debate over the impact of unemployment benefits, it has been suggested that, with higher and easily available benefits, workers were induced to remain longer on the unemployment register either searching more widely or enjoying more leisure. One approach to testing this view is to examine the relationship between the flow of workers off the unemployment register and the levels of vacancies and unemployment. Using data which is only available for the 1920s, the average duration of unemployment is estimated at 7-8 weeks and the average duration of a vacancy at less than one week. However, the former will over-estimate average duration of unemployment for a worker who is actively searching and the latter will over-estimate the average duration that a genuine vacancy remained unfilled.

In the search-turnover approach to the labour market, there will be an inverse relation between vacancies and unemployment. The higher are unemployment benefits, the more choosy workers will be, both in searching out job offers and accepting them once offered. An increase in benefits relative to wages will lead to higher vacancies at every level of unemployment (or higher unemployment at each level of vacancies). Deviations of actual from expected wages and changes in the structural imbalance of labour supply and demand might also be expected to shift the vacancies - unemployment relation.

Econometric estimates for the 1920s do not reveal the strong vacancies-unemployment relation predicted by the theory. Nor is the impact of the benefit to wage ratio on vacancies for a given unemployment what would have been predicted. It is therefore concluded that this approach to explaining high unemployment in the 1920s is seriously

(ii)

undermined. An alternative view is that, given there were 8.5 wholly unemployed workers to every vacancy, workers could not be choosy about accepting job offers. There were always willing applicants at the exchange for all but a minority of slow moving vacancies. Consequently, the search turnover view of labour market frictions is not an appropriate framework for the 1920s and, if benefits did cause unemployment, then this must have operated through some other mechanism.

I

In their recent paper on interwar unemployment, Benjamin and Kochin (1979) raised the controversial claim that much of the observed unemployment level was induced by generous insurance benefits. They cleverly entitled their paper "Searching for an explanation of Unemployment in Interwar Britain" and alluded to modern theories of search as underlying their approach. This aspect of the argument has not been taken up in subsequent work. Critics have failed even to see the pun let alone follow through the implications of search theory¹.

The conventional wisdom on the search process in the interwar years is best summarized in a frequently quoted conclusion to a contemporary study by E. Wight Bakke: "The behaviour of the unemployed in searching for employment gives no evidence that the possibility of drawing Unemployment Insurance benefit has retarded the efforts of the unemployed to get back to work. It has removed the cutting edge of the desperation that would otherwise attend that search"². This study was a detailed examination of workers in Greenwich in 1931, one of the more depressed interwar years. Benjamin and Kochin specifically argued, however, that it was not in the very depressed years but in the (relatively) prosperous years of the 1920s and later 30s when benefit induced unemployment made up a substantial share of the total³.

¹ Thus two of the papers which immediately followed had "Still searching" in their titles even though they were critical of the approach (Collins, 1982, Metcalf, Nickell and Floros, 1982).

² Bakke (1933) p. 143.

³ According to their most conservative estimate, benefit induced unemployment accounted for more than one third of the total between 1922 and 1930 and again from 1935 to 1938. (Benjamin and Kochin, 1979).

In this paper we attempt a more direct test of the search hypothesis by examining the relationship between vacancies and unemployment for the 1920's. The 1920s is chosen because it is only for this period that information on the vacancy stock is available. It also avoids the world depression of the 1930s which is not, in any case, the period at issue. Using this data we can derive approximate measures of the average duration of unemployment and vacancies. A direct test of the search hypothesis is performed by estimating the time series relationship between vacancies and unemployment (the U/V curve) along the lines of recent postwar studies¹.

The results from this exercise are almost entirely negative. There is little evidence to support the view that benefit induced search was an important determinant of interwar unemployment. If unemployment benefits are to be blamed for inducing high unemployment, then some other mechanism through which the effects came, must be sought.

¹ The most recent estimates for the U.K. economy are given by Hannah (1983). See also the references to earlier work cited therein.

II

A straight forward approach to obtaining a relationship between vacancies and unemployment follows from the model set out by Holt and David (1966). Assuming a stationary register with inflows and outflows balanced, the probability of a worker who is searching being hired (i.e. flowing off the register) is equivalent to the inverse of average duration for a searching worker¹. This probability is a function k of the stock of outstanding vacancies

$$P_{us} = \frac{(h+c)^*}{U_s} = \frac{1}{D_{us}} = RV_o \quad (1)$$

where $(h+c)^*$ is the constant per period flow of hires and recalls, P_{us} is the per period probability of flowing off the register and D_{us} the average number of periods of search.

Similarly the probability that a given vacancy is filled and the average duration of a vacancy, depends on the analogous flow/stock relation

$$P_{V_o} = \frac{(h+c)^*}{V_o} = \frac{1}{D_{V_o}} = kU_s \quad (2)$$

In either case this leads to the familiar hyperbolic relation between vacancies and unemployment.

$$U_s = \frac{(h+c)^*}{k} \frac{1}{V_o} \quad (3)$$

However, not all workers will be searching or at least not with full search intensity and the relation between the proportion of the unemployed who are

¹ In a stationary register inflows and outflows are constant and equal so that both the size and the duration composition of unemployment remain constant. As long as the probability of leaving unemployment is not correlated with duration, it can be applied to the individual worker but not otherwise.

searching and the total is g . Similarly, some of the registered vacancies may not be "genuine" vacancies in the sense that they represent available job openings at prevailing wages and conditions. The proportion of genuine vacancies is m so that rewriting (3) in terms of observed magnitudes gives

$$U = \frac{(h+c)*}{gkm} \frac{1}{V} \quad (4)$$

The relationships adduced in (3) and (4) are drawn in Figure 1a for different values of the wage, employment is given by the curve marked E . Effective labour supply, which is employment plus searching workers is given by S^E and apparent labour supply, employment plus unemployment, by S^A . Similarly effective labour demand, D^E , is employment plus genuine vacancies and apparent labour demand D^A is employment plus total vacancies. The relationship between observed vacancies and unemployment is given in Figure 1b.

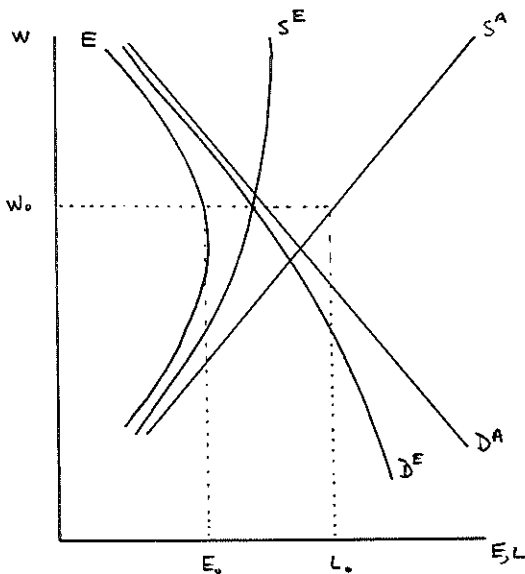


Figure 1a.

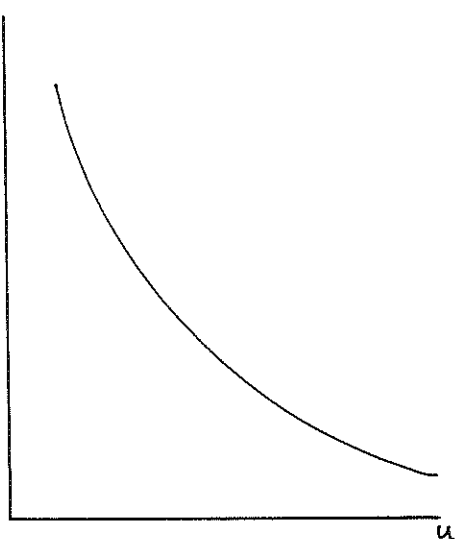


Figure 1b.

In this framework the equilibrium wage W_0 is determined by the intersection of effective supply and demand and will not necessarily be at the point where observed unemployment vacancies are equal. The position of the S^E curve in relation to S^A will depend on the marginal costs and benefits of search as well as the marginal utilities of work and leisure. The relation between optimal search and unemployment duration has been discussed in the unemployment/vacancies framework by Mortenson (1970) and Barron (1975) among many others. With a higher ratio of benefit to expected wage, workers will search longer and take more leisure. In the diagram this would be represented by a leftward shift in the S^E curve. At any level of vacancies this will raise the level of unemployment.

Optimal search strategy determines the workers' reservation wage which is formed in expectation of the frequency and level of wage offers. If actual wage rates are above those expected, then actual durations will be below expected. In this case the S^E curve will shift to the right and unemployment will be lower at every level of vacancies, causing the U/V curve to shift inwards. This, of course, will tend to lead to a lower wage and an offsetting rise in vacancies. The possible mechanisms through which wage adjustments take place have recently been examined by Jackman Layard and Pissarides, (1983). If these adjustments take place slowly or not at all, then the economy will be permanently away from W_0 . At the extreme point of general excess supply the D^E curve will touch the E curve and the UV curve in Figure 1b will be horizontal.

The aggregate labour market can be thought of as being made up of micro markets with different combinations of unemployment and vacancies following Lipsey (1960) and Hansen (1970). Given the non-linearity of the U/V curve, the macro relation will always lie above the micro curve unless in all

(identical) markets the ratio of unemployment to vacancies is the same¹.

Thus the macro relationship may be written as

$$U = \frac{(h+c)*1}{sgkm} \frac{1}{V} \quad (5)$$

where $s \leq 1$ is the appropriate index of dispersion. A rise in dispersion due to changing structural incidence of labour demand (fall in s) would be equivalent to an inward shift in the E curve and an outward shift in the macro U/V curve.

¹ Or unless all markets are in general excess supply or demand

III

In this section we examine stocks and flows of vacancies and unemployed in the 1920s before proceeding to testing the relation between them in section IV.

One very distinctive feature of the interwar labour market is a high rate of turnover among the stock of unemployed workers. Firstly a significant proportion of those registered as unemployed were, in fact "temporarily stopped". This category which was distinguished by the Ministry of Labour from 1926 was defined as "those persons recorded as unemployed on the date of the return who were either on short time or were otherwise stood off or suspended on the definite understanding that they were to return to their former employment within a period of six weeks from the date of suspension"¹. This category accounted for 24.5% of the unemployed from 1927 to 1929 and 18.5% from 1930 to 1938². Much of this is connected with very short-term layoffs under the so called "oxo" system through which workers were able to connect together repeated spells of unemployment for the purposes of claiming benefits without serving additional waiting days³.

Secondly, a separate category was distinguished by the Ministry from 1924 onwards for those registered as unemployed who were normally in casual employment. These averaged 6% of the total unemployed from 1927 to 1929 and 4% from 1930 to 1938. They were mostly very short spells of unemployment which typify occupations where casual labour was important such as on the docks and in the building trade. Both casual labour and temporary layoffs were heavily concentrated among certain groups of workers.

¹ Ministry of Labour Gazette, February 1926, p. 54.

² These figures calculated from monthly totals for the UK reported in the Gazette. The year 1926 is not included because of the effects of the General Strike which raised the share of the temporary layoffs.

³ This feature of the system was one of those stressed by Benjamin and Kochin as inducing unemployment (1979, p.447 1982, p.427). Examples of where employers and workers systematically arranged layoffs so as to maximise benefit entitlement are quoted in the evidence of the Ministry of Labour to the Royal Commission on Unemployment Minutes of Evidence.

Thus in a sample enquiry conducted for the year ended January 1931, it was found that only 27.3% of claimants had just one spell of unemployment and that 18.3% had more than ten spells. The average number of spells per claimant was 7.3, average duration was 20.8 days and some 63% of claims were for 6 days. Thus, even though the average length of spell was less than three weeks, the average amount of unemployment per claimant was 27.5 weeks or more than six months¹.

For the third category of workers, the "wholly unemployed", it is possible to examine the rate of flow through the register more directly. The Ministry of Labour recorded the number of wholly unemployed workers who were moving off the register into vacancies previously notified to the exchanges under the heading "vacancies filled"². This, however, falls short of the total flow off the register of wholly unemployed since most workers leaving the register went into employment not previously notified as vacancies to the exchanges. It is possible to form an estimate of the proportion of vacancies filled to the total outflow by reference to the "placing index" which indicates from 1932 to 1938 an average of 26.1%³. It is not however available for the 1920s though at the end of the period in the first half of 1930, it stood at 22.2%⁴. For the first six months of 1920 the number of vacancies filled can be compared with total registrations (i.e. the inflow to the register) which were 32.4% - similar to the prewar figure.⁵ With the decline in employment, rise in unemployment and expansion of the insurance system, it is likely that this figure would have

¹ The results of this enquiry appear in The Royal Commission on Unemployment Insurance CD4158, 1932 Final Report, p. 74-5.

² This figure also includes a small number of "Class B placings" which were essentially placements of casual workers and re-employment by previous employers after layoff.

³ The placing index for the UK is given by Beveridge (1944) Table 14, p. 80.

⁴ Royal Commission on Unemployment Insurance (1931) Minutes of Evidence, p.453 (Memorandum by the Ministry of Labour No. 24, Appendix C).

⁵ These figures are given in the Report of a Committee of Enquiry into the Work of the Employment Exchanges, Cd . 1054, 1920. Appendix III p. 29, see also comments on p. 8.

dropped sharply in the early 1920s and, as a lower bound estimate, we may assume it to have been about 20%¹. This would give an annual flow of wholly unemployed off the register for 1921-1929 of 5,697,335.

If we take the figure of 5.7 million as a lower bound, the number of workers flowing off the register into new employment and compare it with the average number unemployed of 1.27 million, this gives a weekly probability of finding employment for all registered unemployed of 0.09 or one in eleven. Since some of these workers flowed back into temporary or casual employment we cannot use this as an estimate of duration. Taking the wholly unemployed as 70.5% of the total gives an average duration for the wholly unemployed, if their spell was not terminated by exit from insurance, of 7.8 weeks². This would be lower for searching workers since

$D_{US} = \frac{gU}{(h+c)^*} = gD_U$. Thus, before the world recession began to make itself felt, unemployment was predominantly for relatively short spells. In September 1929, 77.1% of male and 84.4% of female claimants had been unemployed for less than 3 months. Even so, much of short term unemployment represents the repeated spells of workers in a more or less permanent state of unemployment.

In order to measure the degree of tightness of the labour market as a whole we need information on stock of vacancies. As has been mentioned, this is available only for the period up to November 1929 under the Ministry of Labour's heading "Vacancies Outstanding". This series suffers the same difficulty as the vacancies filled series, namely that it only accounts for a fraction of the total vacancy stock. The average of the series for 1921-9 is a mere 21,106. There is no information at all on vacancies outstanding outside the labour exchanges. As a first approximation, therefore, we may apply our estimate of the ratio of the total

¹ According to Chegwidde and Myrddin Evans (1933, Ftn. 2, p. 176) the placing index rose from about 18% in 1926 to 23.2% in 1932.

² Beveridge estimated that for 1937, 30% of engagements among the wholly unemployed were re-engagements (1944, p. 81).

³ Beveridge (1944) Table 8, p. 64.

outflow to the flow into registered vacancies as applicable to the stock which would give an average of 105,530 for 1921-9.

On this estimate there were, on average, 12 unemployed workers to each vacancy or 8.5 wholly unemployed per vacancy. Alternatively, we can obtain the average duration of a vacancy by taking the ratio of vacancies outstanding to vacancies filled. This does not rely on grossing up the figures but assumes only that the stock/flow relation was the same inside and outside the exchanges. This gives the average duration as 0.93 of a week. If anything this will be a gross overestimate since the vacancies notified to the exchange are likely to have been the hardest to fill and would therefore have longer average durations. This therefore represents an upper bound on the duration of genuine or effective vacancies since

$$D_{V_0} = \frac{mV}{h+c} = mD_V.$$

Though the available data is far from ideal the picture seems relatively clear. Despite relatively high rates of inflow to and outflow from the unemployed stock, the vacancies outstanding at any point in time were small in relation to the number registering as unemployed. In terms of Figure 1a the impression is of the wage fixed at some level above W_0 leading to a position out on the right hand tail of the U/V relationship in Figure 1b. This does not necessarily mean that the benefits hypothesis should be rejected. Indeed supporters of this view might argue that the very reason why vacancies were so scarce was that the impact of insurance benefits was to shift the effective supply curve to the left leading to higher unemployment at every level of vacancies. But there should still be a negative relationship between unemployment and vacancies which is simply shifted out by insurance benefits.

IV

In this section we examine the time series pattern of vacancies and unemployment depicted in Figure 1 for 1921-1929. At the very beginning of the period the vacancy stock (VO) (Measured in tens) fell sharply as the recession deepens. From the low point in 1922 there is a gradual recovery to 1924 and thence decline to 1926 and further recovery. The stock of unemployed (UN) (measured in thousands) is, by no means, a mirror image of the vacancy series. There is some evidence of inverse movements to 1923 and then the series move together in 1924 and 1925 with some evidence of an inverse pattern after 1926. From the model outlined earlier, it is clear that a stable inverse relationship will only emerge if the rate of outflow ($h + c$) and k are stable. The third series included in Figure 1 is vacancies filled (VF) (in hundreds) and this is anything but constant, rising on trend but with sharp falls in 1921-22 and 1925-26.

In order to test whether benefits induced more search, we use the model developed in section II. Since observed values of both vacancy stocks and flows are only fractions of the actual series, they may be thought of as depending on the true variables as follows

$$VO_t = A_1(V_t)^\alpha, \quad VF_t = A_2(h+c_t)^\alpha \quad (6)$$

where VO is vacancies outstanding and VF vacancies filled and the A's and α are constants relating the observed vacancy measures to the true values.

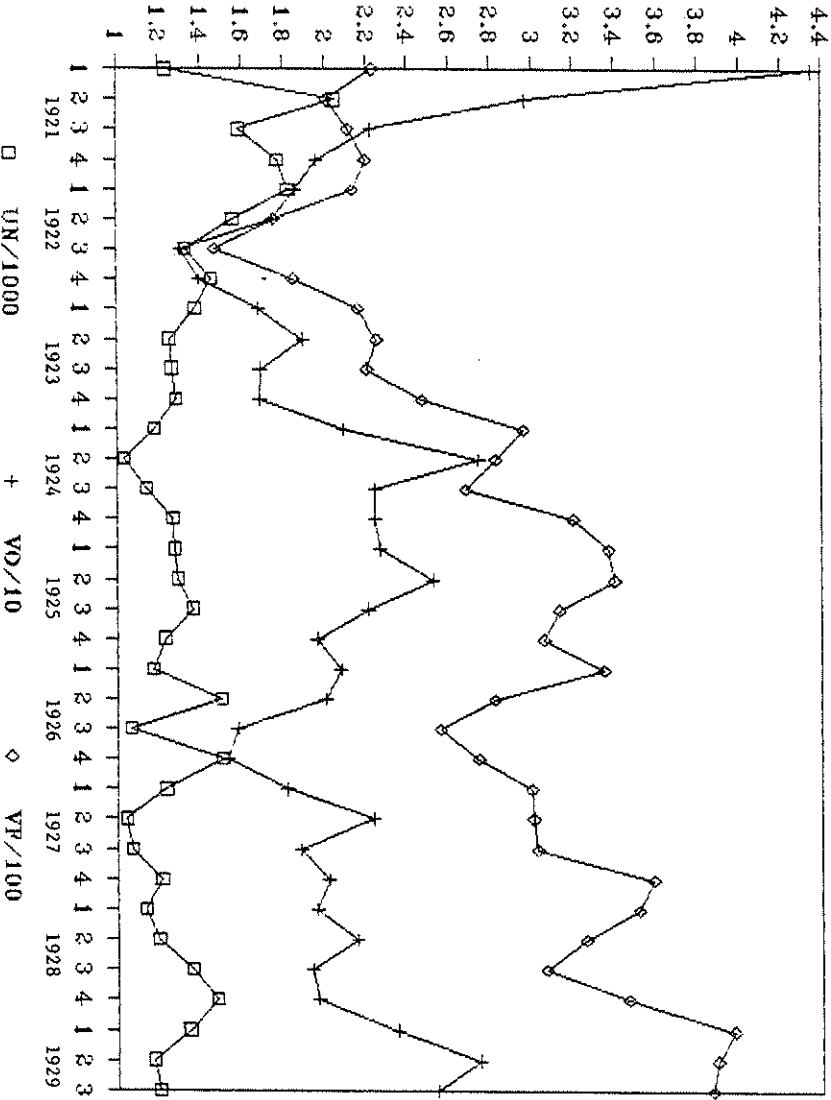
In accordance with the earlier discussion $sgkm$ is written as

$$sgkm = A_3 \left(\frac{W_t}{W_t^e} \right)^{\beta_1} \left(\frac{B_t}{W_t^e} \right)^{\beta_2} \quad (7)$$

where W and W^e are actual and expected wage rates and B the nominal benefit rate. Since gk reflects the probability of accepting an offered vacancy,

FIGURE 1
UNEMPLOYMENT AND VACANCIES
1921-1929

VF, UN, VO



it is expected that $\beta_1 > 0$ $\beta_2 < 0$

Inverting equation (5) gives

$$V_t = (h+c) \frac{1}{sgkm} U_t \quad (8)$$

Assuming $(h+c)$ is constant and substituting (4) and (5)

into (6), taking logs and adding a stochastic error term gives

$$\ln VO_t = \gamma - \alpha\beta_1 \ln\left(\frac{W_t}{W_t^e}\right) - \alpha\beta_2 \ln\left(\frac{B_t}{W_t^e}\right) - \alpha \ln U_t + \epsilon_t \quad (9)$$

where $\gamma = \ln A_1 - \alpha \ln A_3 - \alpha \ln(h+c)$

This is the standard type of U/V curve but, since we have noted that the measure of vacancies filled is quite volatile, an alternative approach is to standardise the vacancy stock by the rate of flow. This is interpreted as the average duration of a vacancy which is also a direct function of U . Substituting as before, taking logs and adding the error term gives

$$\ln\left(\frac{VO_t}{VF_t}\right) = \gamma' - \alpha\beta_1 \ln\left(\frac{W_t}{W_t^e}\right) - \alpha\beta_2 \ln\left(\frac{B_t}{W_t^e}\right) - \alpha \ln U_t + \epsilon'_t \quad (10)$$

where $\gamma = \ln A_1 - \ln A_2 - \alpha \ln A_3$

This formulation also has the advantage that changes occurring in the measurement of both vacancy series, i.e. similar movements in A_1 and A_2 will not affect the equation. In each of these equations, unemployment and vacancies were scaled by the labour force to give rates¹. The measure of benefits is a weighted average of rates and the expected wage was obtained from an autoregressive forecasting equation. Further details of the data used are given in the appendix.

The equations were estimated including seasonal dummies and a dummy for 1926II to 1926IV to allow for the effects of the general strike. Since the structural imbalance of unemployment is often thought to have

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In the case of equation (10) of course, both VO and VF are divided by the labour force so that the denominators cancel.

been exacerbated by the uncompetitiveness of staple industries following the return to the gold standard, the period of observation was divided up into two sub periods 1921III - 1925I and 1925III - 1929III to explore possible shifts in the U/V relation. Initially the equations were estimated by ordinary least squares and instrumental variables and, in both cases, the errors were found to be strongly serially correlated. It was therefore decided to impose the Cochrane-Orcutt transformation and the equations presented in Table 1 give the estimate of the autoregressive parameter for the errors. It was thought likely that, to some extent, this was due to serially correlated measurement error in the dependent variables.

The results for equation (9) are given in the top panel of table 1. The coefficient on B/W^e should be positive, that on W/W^e negative and on UR negative. For the whole period the wage surprise term gives the wrong sign and the coefficient on unemployment is very small and insignificant. The latter improves for the first sub period but apart from this coefficient none are significant in either sub period and all change sign between the two periods.

Standardising the vacancy stock by its outflow might have been expected to improve the results but this was not the case. In the whole period equation the signs are reversed and the benefit term gives a strongly significant coefficient but with the "wrong" sign. This effect, which clearly dominates in the second sub period, suggests that increases in the benefit to wage ratio raised the rate of turnover and lowered the average duration of a vacancy.¹ This result should not be taken too seriously since the basic framework of the U/V curve is not supported by the data. In every case the unemployment rate gives a very small and insignificant coefficient with the wrong sign.

¹ Equations relating the Vacancies Filled series to a set of economic variables are given in Hatton (1983) p. 16.

Table 1

Regression Results for Unemployment / Vacancies Model

Dependent Variable $\ln(VO)$

Period	Const.	$\ln(B/W^e)_t$	$\ln(W/W^e)_t$	$\ln UR_t$	P	\bar{R}^2	RSS
1921III-	-5.1452	0.8810	3.4803	-0.0714	0.5906	0.7239	0.1957
1929III	(0.9216)	(0.4651)	(1.8785)	(0.1719)	(0.1427)		
1921III-	-6.8341	1.1398	3.3828	-1.0531	0.6410	1.6487	0.0567
1925I	(0.1569)	(0.7965)	(2.3089)	(0.4036)	(0.2051)		
1925II	-7.7505	-1.2944	-7.9088	0.2098	0.9653	0.7789	0.0439
1929III	(4.3514)	(2.6405)	(4.5400)	(0.1552)	(0.0633)		
Dependent Variable $\ln(VO/VF)$							
1921III-	-4.6299	-1.2019	-0.6555	0.0443	0.5849	0.9143	0.0534
1929III	(0.4813)	(0.2428)	(0.9813)	(0.0898)	(0.1433)		
1921III-	-3.6791	-0.6371	0.3406	0.0232	0.4303	0.7977	0.0233
1925I	(1.0563)	(0.3612)	(1.5738)	(0.2498)	(0.2412)		
1925II-	-6.1017	-2.0877	-2.5156	0.0319	0.7440	0.7973	0.0143
1929III	(2.7812)	(0.1690)	(2.9259)	(0.0977)	(0.1621)		

V.

The failure to identify a strong U/V relation tends to undermine a search-turnover type view of the labour market in the 1920s. There are several reasons why this might occur. One is that the observed vacancy measures are extremely poor measures of the true variable. In effect, if $\alpha = 0$, then the whole model will break down. A second possibility is that the unemployment measure is inappropriate since vacancies notified and filled relate largely to the wholly unemployed - not all those on the register. Data for the wholly unemployed begin only in 1926I and an attempt was made to identify a simple relationship between vacancies and the wholly unemployed over the ten quarters for which the series overlap. This did not yield strong evidence of an inverse relation¹.

A third possibility is that the economy was so far down the UV curve into excess supply that the stock of vacancies was at such a minimal level as to be unresponsive to variations in unemployment, i.e. the UV curve was virtually horizontal. Thus the stock of outstanding vacancies were, for various reasons, not easily filled but new vacancies would be immediately taken up.

To test this hypothesis we examined weekly data on Vacancies Notified to the exchanges, i.e. the vacancy inflow and Vacancies Filled, the outflow for the three years from the first week in December 1926 to the last week in November 1929. We attempted to explain the outflow by current and one period lagged inflows with the following result

$$\ln VF_t = -0.2628 + 0.9500 \ln VN_t + 0.0626 \ln VN_{t-1}$$

$$(0.2118) \quad (0.0209) \quad (0.0209)$$

$$\bar{R}^2 = 0.9520 \quad DW = 1.8848$$

This indicates an overwhelmingly strong relationship between the

¹ For both versions of the model, the coefficient on unemployment was positive and insignificant.

vacancies notified in the current week (VN_t) and Vacancies Filled during that week, (t value = 45) the former accounting for 95% of the latter. The lagged value of vacancies notified takes a correspondingly small coefficient.

The correlation coefficient (for absolute values) between Vacancies Filled and Vacancies Notified is 0.97 but between Vacancies Notified and the change in the vacancy stock only 0.11. The relation between Vacancies Filled and the change in the stock is even weaker with a correlation coefficient of only -0.02. Thus changes in the stock bear very little relation to the per period outflow, a rise in outflows therefore resulted from a rise in inflows, not a reduction in the existing vacancy stock. Furthermore the correlation between the difference between Vacancies Filled and Notified and the change in the stock is only 0.53¹. Thus the stock is only partly determined by current flows, the remaining variation being due to vacancies being terminated. Given that over this period the weekly flow of Vacancies Notified exceeded the flow of vacancies filled by 3,750 or about 15% of the average stock while the stock itself hardly increased, this result is not so surprising. It supports the view that most vacancies were immediately taken up while for various reasons a small number remained outstanding - many of which would ultimately be terminated. The exact nature of these vacancies, i.e. whether they really did represent potential hires is unclear. It seems likely that some employers would have kept a notification at the exchange in order to have a stream of applicants who could be employed instantly a real vacancy arose.

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Aggregating the data up into 4 weekly periods gave very similar results.

VI

What can be said about the search hypothesis for the 1920's? The analysis of labour market data suggests that turnover was surprisingly high and there were frequent short spells. This might be thought to enhance the applicability of the search model. Despite this high turnover, evidence indicates that the stock of outstanding vacancies was very small relative to the number unemployed. When the U/V relation is estimated, there is no evidence that rising benefit shifted the U/V curve out. Indeed there is no evidence of a stable U/V relation at all even when adjustment is made for varying the rates of outflow. On these grounds, there is no support for the view of Benjamin and Kochin insofar as it rests on an implicit search model.

It is suggested that a reason for the breakdown of the model is that the economy was in general labour market excess supply. Genuine new vacancies were taken up almost immediately leaving only a few slow moving vacancies at the exchanges. Workers were simply queuing at the exchanges and a rise in the unemployment rate merely lengthened the queue - it did not cause vacancies to be taken up more quickly. Similarly, though unemployment insurance might be expected to shorten the queue of active job seekers, it did not retard the movement into vacancies of those in the queue.

Data AppendixVacancies Filled, Vacancies Notified, Vacancies Outstanding:

Quarterly measures obtained from monthly figures in the Gazette. The series for Great Britain and Northern Ireland were aggregated up into quarterly data with appropriate adjustments to ensure quarters of equal length.

Unemployment

Average of Monthly totals for live Register from the Gazette.

Labour Force

1922III - 1929III Linearly interpolated from annual totals each July
 1921III - 1922IV Various benchmark estimates from the Gazette appropriately interpolated.

Wage Rate

London and Cambridge Economic Service Bulletin, Quarterly Supplement.

Expected Wage

This was generated as the fitted values from the following regression
 1921III - 1929III

$$\ln W_t = 0.710 + 1.264 \ln W_{t-1} - 0.418 \ln W_{t-2} + 0.0004 T$$

(0.110) (0.110) (0.095) (0.0022)

$$+ \text{Seasonals} \quad \bar{R}^2 = 0.987 \quad DW = 2.196$$

Benefit Rate

Weighted index of benefit rates with the following weights. Men (>21), 0.61
 Men (18-20) 0.07 Boys (16-17) 0.05, Women (> 21) 0.17, Women (18-20) 0.06,
 Girls (16-17) 0.04, Adult dependents 0.50, Child dependents 0.80.

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