

## منحنى عرض العمل الكلاسيكي : ألا يزال انتقاد كينز لهذا الجدول صحيحا؟

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**ملخص البحث.** تهدف هذه الدراسة إلى اختيار صحة نقد كينز للنظرية الكلاسيكية للعمالة، والمتمثل في أنه لا يمكن أن يكون الأجر الحقيقي مقياسا سليما للاستخدامات الأخرى للعمالة، لذا تقوم هذه الدراسة باختبار إمكانية حدوث بطالة إجبارية في سوق العمل، وذلك عندما يرتفع المستوى العام للأسعار أو عندما تكون الأجور غير مرنة في الاتجاه السفلي. ونهجت هذه الدراسة تحليلا وصفيا لمستويات الأجور والأسعار ومعدلات البطالة لسبع من الدول الصناعية في الفترة ما بعد الحرب العالمية الثانية. وبتحليل المعلومات عن هذه المتغيرات توصلت الدراسة إلى أن النقد الكينزي للنظرية الكلاسيكية للعمالة لا يزال صحيحا، إذ ارتفعت البطالة الإجبارية في هذه الدول نتيجة لارتفاع المستويات العامة للأسعار، ونتيجة لأن مستويات الأجور غير مرنة في الاتجاه السفلي.

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Finally, with a fixed money wage, the labor supply curve in Keynes' model is different from the one in the classical model. Keynes implicitly supplanted the classical upward-sloping supply curve with a curve having a horizontal portion at or above the wage which would clear the classical labor market as portrayed in the following figure.

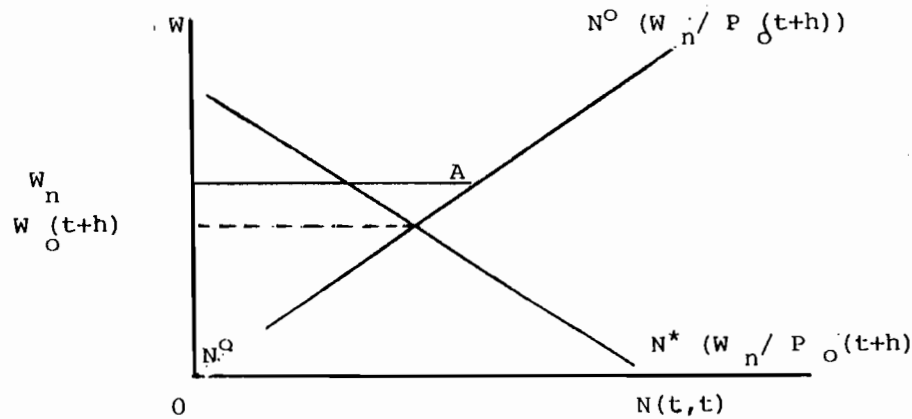


Fig.3. The classical vs. Keynesian labor supply.

Thus, Keynesian labor supply curve is WAN, and the classical labor supply is NN.

### Conclusion

The empirical analysis of wages and unemployment rates for seven industrialized countries in post WWII indicates that there were unequal proportional movements in the same direction between the real and nominal wage and there were opposite relationships between the price level and the unemployment rate.

Also, as money wage inflexibility deters the economy from being at full employment, i.e., involuntary unemployment arises in the short run, the amount of labor supplied will be determined by employers (labor demand curve) rather than employees (labor supply curve). Thus, Keynes' labor supply curve would be the classical upward-sloping supply curve with a curve having a horizontal portion at or above the wage that would clear the classical labor market.

Based on these findings, Keynes' criticism of the classical labor supply is still valid. Thus, the real wage is not an accurate measure of the marginal disutility of labor.

Secondly, the other explanation of money wage inflexibility is institutional. Long-term (three years or more) explicit contracts characterized the unionized sector of the labor market. During the life of these contracts, the money wage will not respond to any event such as a decline in labor demand.

Once such a labor contract is signed, the decision of how much labor to hire is left to the employer. A labor supply curve such as the one in Fig. 1 no longer plays any role in determining employment. The firm hires the profit-maximizing amount of labor at the fixed money wage, as explained in Fig. 2.

However, this second explanation of money wage inflexibility might not be accepted as a wage setting or a cause of wage rigidity for two reasons: (1) only a minority of American employees are organized<sup>12</sup> and (2) the contracts have an overlapping nature. Hence, "the rigidity effects of a written contract should not be overstated. In any case, wage rigidity under union contracts does not carry an obvious theoretical implication for non-union wage rigidity." [14, p. 62]

The other reason for money wage inflexibility is the implicit contracts: since the explicit contracts do not cover all workers in the labor market, there is often an implicit agreement between employers and employees that can explain the money wage inflexibility for the remaining segments of the labor market, that are not covered by the explicit contracts. The central idea is that costs and uncertainty are attached to breaking the employer-employee relationship. In such circumstances, an incentive is created to establish a long-term relationship through an implicit contract.

The incentives for employers to refrain from attempting to achieve such wage cuts are to maintain a reputation as a "good employer," to avoid a search cost for new employees when there is an expansion, and to avoid human capital losses as highly skilled workers quit because of wage cuts. Workers, on the other hand, do not ask for higher wages over a period of time. Their incentives are to avoid the risk and searching cost that are associated with seeking new jobs which satisfy their desire.

Consequently, to avoid such problems, employers offer employees "fair" treatment that involves a steady, if not increasing nominal wage. Evidently, for the post WWII era, the nominal wage rate did not decline in the industrialized countries. In fact, it increased in the U.S., the U.K., Germany, France, Italy, Sweden and Japan, even during the supply shocks periods in 1970s as shown in Table 1.

The inflexibility of the money wage causes imperfection in the labor market. Thus, an excess supply of labor exists when the money wage is inflexible. The excess supply of labor caused by the fixed money wage is called involuntary unemployment, and it occurs so long as the disutility of work at the margin is greater than the fixed wage.

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<sup>12</sup> In contrast, European workers are highly organized; more than 70% of the labor force are organized.

empirical findings give support to Keynes' central explanation regarding the labor supply curve: workers, individually and in groups, are most concerned with relative rather than the absolute real wage. Workers may withdraw their labor if their wage falls relative to wages elsewhere, but they would not do so if the real wage falls uniformly everywhere. Thus, the real wage is not a correct measure of the marginal disutility of work, or alternatively, the supply of labor does not respond to changes in the real wage.

### Money Wage Rigidity

In the context of the classical auction market, the forces of the demand and supply will clear the labor, product, money and financial markets. Hence, the labor market will be characterized by a flexible money wage as well as a flexible real wage.

Under an auction-market model, an excess supply of labor would signal the auctioneer quickly to drop the real wage. But this would lead to nominal price declines in auction product markets, so that ultimately a real wage decline would have to be a nominal wage decline too. The real versus nominal distinction is likely to be meaningful only when there are already departures from auction markets in the model [14, p. 44].

Unlike the classical school, Keynes believed that money wage would not adjust sufficiently in the short run to keep the economy at full employment [3, Chapter 19].<sup>11</sup> This belief is based on money wage inflexibility in the short run. Tobin [15, p. 3] stated:

Keynes' explanation of money wage stickiness is plausible and realistic. But two analytical issues have obscured the message. Can there be involuntary unemployment in an equilibrium, a proper, full-fledged neoclassical equilibrium? Does the labor supply behavior described by Keynes betray "money illusion"? Keynes gave aloud yes in answer to the first question, and this seems at first glance to compel an affirmative answer to the second.

There are a number of reasons to explain why the money wage is not quickly adjusted, especially in the downward direction, to maintain equilibrium in the labor market. These reasons are as follows:

First, as Keynes argued, workers resist money wage cut even as the demand for labor falls because they see the money wage cuts as unfair changes in the structure of relative wages. For example, workers in one firm do not accept the money wage cut because they have no assurance that workers in other firms will accept the same cut.

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contrast, our findings were based on data for these two variables during the 1960's and the 1970's (with the exception of the supply shocks years), and these periods were classified into short periods that are characterized by different degrees of economic slacks (see page 9 above).

<sup>11</sup> Keynes' loud message in *the General Theory* was that it is unwise to await restoration of full employment through wage flexibility.

seven industrialized countries during the period of 1981-83.<sup>8</sup>

According to these patterns, there appears to be an inverse relationship between the price level (as measured by the consumer price index) and the unemployment rate during the periods analyzed except during the periods characterized by oil price increases (namely, the 1973-75 and 1979-81 periods). Thus the unemployment rate did not decrease as price level decreased. Thus, workers do not quit their jobs because of increases in the price level.

This finding is supported theoretically by Phillips. The Phillips curve doctrine implies that lower unemployment rate can be purchased at the cost of higher inflation. Snowdon and Vane [11, p. 7] stated that "the Phillips curve appeared to provide rare evidence of stable relationship between unemployment and inflation that had existed for almost a century." Given an upward sloping aggregate supply curve, a change in the investment demand, a volatile component of the aggregate demand, would shift the aggregate demand in the same direction. This movement in the aggregate demand schedule would prompt the inverse relationship between unemployment rate and the price level in the short run.<sup>9</sup> (For more detail theoretical explanation of the Phillips curve see [12, pp. 41-44] and [13, pp. 342-348]).

However, this relationship between unemployment rate and the price level might not hold in the long run; thus, as we augmented the basic Phillips curve with the expected rate of inflation (as an extra variable determining the rate of change of money wages), the curve will be vertical [11] and [13]. At the natural rate of unemployment a shift in the aggregate demand will cause only variations in the price level (in the long run). This finding was the essence of Milton Friedman attack against the Keynesian management policies in the late 1960s, that was later acknowledged by the Keynesian [11].

Also the events occurred during the 1970's, when there was simultaneous rise of unemployment and inflation (i.e., stagflation), put doubt on the Phillips hypothesis that there are a permanent trade-off between unemployment and inflation.

Although such events might have contradicted the then Keynesian views concerning the long term inverse relationship between unemployment rate and inflation, our findings in this paper reveal that there existed such a trade-off between short periods during the 1960's and the 1970's (with the exception of the supply shocks periods).<sup>10</sup> Thus, our

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<sup>8</sup> The changes in both the price index and the unemployment rate between the periods of 1975-79 and 1979-81 were not discussed in the text since the rise in the unemployment rates in many of these countries was mainly caused by the second supply shocks, as it was the case during the period of the first supply shocks (1973-75).

<sup>9</sup> The Phillips curve allows Keynesian to link the output and employment theory with the theory of wage and inflation [11].

<sup>10</sup> Annual data for unemployment rate and inflation rate was presented by Blanchard [13, p.344] to show that the relationship between these two variables was vanished during the period after 1970, and the reasons behind this were the occurrence of the supply shocks and a change of expectations by economic agents. In

### Price Level vs. Unemployment Rate

Table 2 shows the relationship between price percentage changes (as measured by the consumer price index) and the unemployment rates in seven industrialized nations during the period of 1965-1983.

As shown in the Table, the consumer price index increased sharply while the unemployment rate had a modest increase in the U.S., the U.K., France, Germany, and Japan between the periods of 1965-73 and 1973-75. It should be noted that increase in the unemployment rate is largely due to supply shocks (e.g., oil price increases) and structural changes rather than to the sharp increase in the consumer price index.

**Table2. Price (percentage changes)\* and unemployment rates in seven industrial nations**

Nations	1965-73	1973-75	1975-79	1979-81	1981-83
<b>USA</b>					
Price %	4.3	9.6	7.5	11.3	4.5
Unemployment %	4.5	6.3	7.0	6.8	9.0
<b>UK</b>					
Price %	5.9	18.2	12.7	13.9	6.4
Unemployment %	2.3	2.8	4.9	6.8	10.4
<b>France</b>					
Price %	5.0	11.9	9.3	12.7	10.2
Unemployment %	1.3	2.7	4.8	6.7	8.5
<b>Germany</b>					
Price %	3.6	6.2	3.7	5.7	4.2
Unemployment %	0.9	2.4	3.9	3.8	6.6
<b>Italy</b>					
Price %	4.4	14.1	16.5	17.8	14.5
Unemployment %	5.0	5.0	6.4	8.1	10.4
<b>Sweden</b>					
Price %	5.2	9.4	9.3	12.2	8.4
Unemployment %	2.2@	2.0	1.9	2.2	3.0
<b>Japan</b>					
Price %	6.0	16.5	6.0	6.2	2.2
Unemployment %	1.2	1.5	2.0	2.1	2.4

Source: Collected by the author from: G. Perry [9].

\* Prices are measured by the Consumer Price Index. @ 1968-73/

Compared to the case occurred during the 1973-75 period, the percentage change of the consumer price index declined while the unemployment rate rose in all the seven industrialized nations except in Sweden and Italy during the 1975-79 period. In Sweden, the percentage change of the consumer price index almost stayed the same and the unemployment rate declined by one point of a percent between the two periods.

In comparison with the status in the 1979-81 period, the percentage change of the consumer price index declined while the unemployment rate increased sharply in all the

Both money wage and real wage declined sharply between the periods of 1973-75 and 1975-79 in all the seven countries. Yet, the decline in the real wage was relatively greater than that in nominal wage; that is, prices declined slower than money wage between these periods.

Nominal wage rose and real wage decreased in the U.S., the U.K., France, and Italy while both nominal wage and real wage declined in Germany and Sweden between the periods of 1975-79 and 1979-81. For Japan, money wage increased while real wage did not change between the two periods.

In opposite direction, the same pattern has occurred between the periods of 1979-81 and 1981-83. Thus, money wage decreased while real wage increased in all the industrial countries except Germany and France. In Germany, both money and real wage declined between the periods.

Given these patterns, there was no stable relationship between money and real wage during post WWII. When money wage moved upwards, real wage went either downwards or upwards depending on percentage changes in the price level comparing to percentage changes in the money wage. When price level went up faster than money wage, money and real wage moved in opposite directions, and when price level increased slower than money wage, money and real wage moved in the same direction.<sup>7</sup>

Although there has been no stable opposite movement between money and real wage, Keynes' argument (or objection) that workers cannot determine their real wage through money wage bargaining is not completely destroyed. Empirical data shows that the real wage did not move in the same direction and in proportion to money wage as the later changed, i.e., the percentage changes in the price level differ from the percentage changes in money wage. Lipsey [10] concludes that Phillips hypothesis, for the U.K., predicts that when the real wage actually fell, the observed rise in money wage rates would be greater than the predicted rise. Thus workers could not determine their real wage by bargaining over their money wage, i.e., workers had money illusions.

This implies that the classical theory assumption that labor can always reduce real wage by accepting a reduction in its money wage, is not valid. Consequently, if the classical assumption is not true, then there is no longer any reason to expect a tendency towards equality between real wage and the marginal disutility of labor.

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<sup>7</sup> As known to economists, price level changes are affected by both demand and supply considerations, i.e., large positive price level change is called demand-pull inflation or/and supply-push inflation. Money wage is a significant part of firms' costs, so any nominal wage change influences firms' supply of goods and services. A rise in money wage causes firms' cost to increase and thus firms' supply curve to shift upwards (to the left). Such a change causes price level to rise generating what is called cost-pull inflation.



### Is Keynes' View of the Classical Labor Supply Still Valid?

As discussed earlier, Keynes raised two main objections about the classical labor supply: (1) real wage and money wage move in opposite directions, i.e., workers cannot determine their money wage through bargaining over money wage, and (2) workers will not withdraw from labor market when the price level increases.

Both objections, raised by Keynes, reveal that workers do not respond to changes in the real wages; that is, the real wage is not a correct measure of the marginal disutility of labor. To investigate this, we will first examine the relationship between money wage and real wage, and then the relationship between price level and unemployment rate for seven industrialized nations during post WWII era. These nations are the United States, the United Kingdom, France, Germany, Italy, Sweden, and Japan. The post WWII era examined is divided into three short periods of low, medium, and high degrees of economic slack-- 1965-73, 1975-79, and 1981-83-- and two short periods dominated by oil price increase-- 1973-75 and 1979-1981 [9, p. 129].

#### Nominal Wage vs. Real wage

According to the figures above, money wage ( $w$ ) increased sharply while real wage ( $w/p$ ) declined slightly, i.e., prices went up slightly faster than money wage, in the U.S., Germany, and Japan between the periods of 1965-73 and 1973-75. However, in the U.K., France, Italy, and Sweden, nominal wage increased sharply while real wage had a slight increase, i.e., money wage rose faster than prices between the same periods.

**Table 1. Money wage and real wage in seven industrial nations (percentage change per year)\***

Nations	1965-73	1973-75	1975-79	1979-81	1981-83
<b>USA</b>					
Money wage	6.0	10.7	8.2	10.1	5.9
Real wage	1.7	1.1	0.7	-1.2	1.4
<b>UK</b>					
Money wage	9.8	25.6	15.1	15.1	7.8
Real wage	3.9	7.4	2.4	1.2	1.4
<b>France</b>					
Money wage	9.9	19.3	13.2	14.1	14.3
Real wage	4.9	7.4	3.9	1.4	4.1
<b>Germany</b>					
Money wage	10.0	11.4	7.7	7.4	4.4
Real wage	6.4	5.2	4.0	1.7	0.2
<b>Italy</b>					
Money wage	13.0	23.7	16.3	19.0	17.2
Real wage	6.4	7.2	2.2	1.2	2.7
<b>Sweden</b>					
Money wage	10.2	17.8	11.0	10.5	7.9
Real wage	5.0	8.4	1.7	-1.7	-0.5
<b>Japan</b>					
Money wage	15.1	21.4	7.0	7.2	3.9
Real wage	9.1	4.9	1.0	1.0	1.7

Source: Collected by the author from G. Perry [9].

\* Money wage is measured as an hourly compensation.

Now, it seems appropriate to construct a model where nominal wage is rigid downward, that indicates labor market is not clear when real wage declines. In this model (the Keynesian model), we assume the following:

1. Workers and employers agreed upon money wage ( $W_n$ ) for a period  $(t, t+h)$  prior to time  $t$ . This agreement is based on incorrect information.
2. Fixed money wage that workers and employers agreed upon is greater than the money wage ( $W_0$ ) that will clear the market for the period  $(t, t+h)$ . Thus, at time  $t$ , workers and employers will have a perfect foresight for the period  $(t, t+h)$ , so that the money wage ( $W_0$ ) will clear the market.

According to these assumptions, labor market for the period  $(t, t+h)$  is characterized by an excess supply of labor. This is shown in the diagram below:

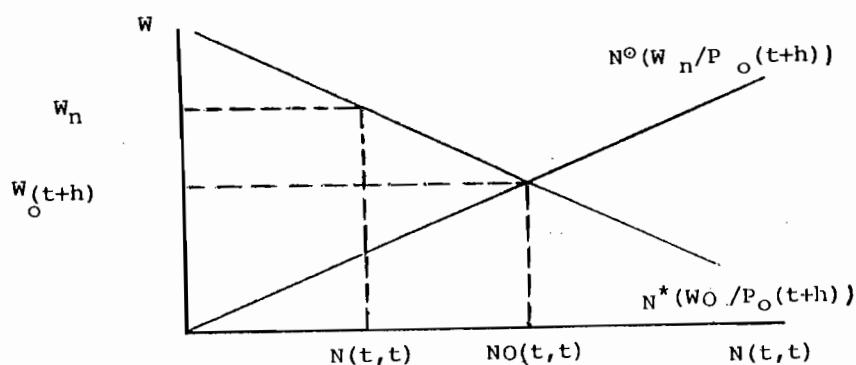


Fig.2. The labor market under keynes' view.

where  $W_n$  is fixed nominal wage that agreed upon prior to time  $t$ ,  $W_0(t+h)$  is the classical money wage that clears the labor market,  $N(t,t)$  is the employment associated with the fixed money wage,  $NO(t,t)$  is the employment associated with  $W_0$ ,  $P_0(t+h)$  is the price level expected prior to time  $t$  (incorrect expectation),  $N^o(W_n/P_0(t+h))$  is a labor supply function, and  $N^*(W_0/P_0(t+h))$  is a labor demand function. The level of employment  $N(t,t)$  associated with rigid money wage is lower than the level of employment  $NO(t,t)$  associated with the classical money wage that clears the labor market. Thus, with inflexible money wage ( $W_n$ ), there is an excess supply of labor which equals  $NO(t,t)$  minus  $N(t,t)$  and is called involuntary unemployment.<sup>6</sup>

<sup>6</sup> The labor supply curve indicates the maximum total hours willingly devoted to work at each money wage given an expected price level. At rigid money wage,  $W_n$ , there are workers willing to work but they cannot find jobs (involuntary unemployment). For individuals who would like to work at or below the wage floor, such unemployment is involuntary [8, p. 48].

Hypothetically, to derive an aggregate labor supply schedule, e.g., for a nation, we horizontally sum up individuals' labor supply schedules at every level of the real wage. Empirically, the aggregate labor supply schedule is positively sloped indicating that higher real wages draw people into the labor force or encourage those who are already in the labor market to offer longer hours. Theoretically, however, the aggregate labor supply schedule is positively sloped only to a point where the substitution effect is equal to the income effect. Beyond this point the schedule is bended backward, i.e., it becomes negatively sloped. This is because high real wage may encourage workers to enjoy a greater amount of leisure, so long as, the income effect is higher than the substitution effect. Hence the labor supply curve is, at least theoretically, backward bending [2, p. 139]

### Keynes' View of the Classical Labor Supply

The second postulate of the classical theory of employment posed by Keynes in *The General Theory* is as follows: supply of labor is determined when "the utility of the wage when a given volume of labor is employed is equal to the marginal disutility of that amount of employment" [3, p. 5].

Keynes further attacked the second postulate of the classical theory of employment. Keynes argued that the real wage cannot be taken as a measure of the marginal disutility of employment because labor supply is a function of both real and money wage, not of the real wage alone as classical economists think [4, pp. 719-720].

Keynes' attack on the classical labor supply was based on two objections: the first, real wage and money wage move in opposite directions, as has been proved statistically, and the second, workers think in real terms and money wages (in contrast) are set in nominal term. The first objection suggests that money wage is not flexible downwards to resequilibrium in the labor market, as believed by the classical economists. Thus workers would not accept a reduction of their money wage as employment is falling [5]. Froyen [6, p. 224] states that "Keynes believed that the money wage would not adjust sufficiently in the short run to keep the economy at full employment." (There are many explanations of the rationality of the money wage inflexibility, which will be discussed in the following sections.)

The second objection suggests that workers do not react immediately to price level changes; i.e., workers have a money illusion. For example, if workers are working for \$50 a day (8 hours) when the price level is 1, then if price level is increased, say by 10%, the purchasing power is reduced, to 45.5 (50/1.10). Keynes thinks that workers will not reduce their supply of labor (with their money wage unaltered) as they realize an increase in the price level.<sup>5</sup>

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<sup>5</sup> Workers cannot determine their real wage as they do with their money wage by bargaining. The real wage depends on money wage and price level which is determined by factors involved in the economic system such as factor mobility costs, other factor costs, transaction costs, government policies, international economics, etc. Since workers have imperfect information about the present and the future, they cannot expect prices correctly [7].

that there exists a unique real wage  $(w(t+h)/p(t+h))$  and rate of employment  $N$ . For illustration, the labor market in the classical world can be shown in the following diagram:

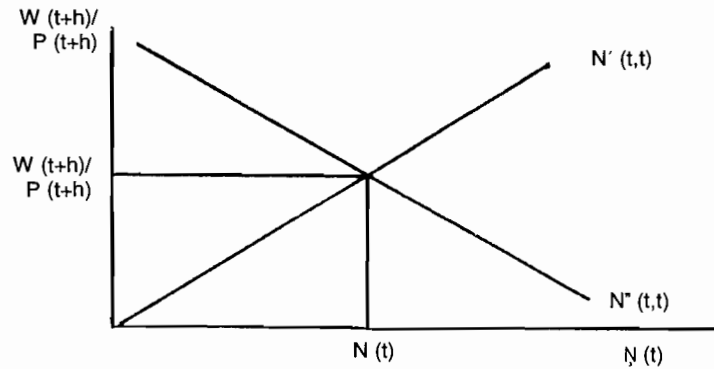


Fig.1. The classical labor market.

where  $(w(t+h)/P(t))$  is the real wage,  $N(t)$  is the equilibrium level of employment,  $N'(t,t)$  is labor supplied at time  $t$ , and  $N''(t,t)$  is labor demanded at time  $t$ .

To achieve the objective of this paper, our focus is only on analyzing the labor supply curve. The labor supply schedule--as it is implicitly indicated from the above discussion-- shows the amount of labor workers are willing to supply at different levels of real wages.<sup>2</sup> More specifically, workers will decide at the beginning of the period ( $t$ ) the amount of work they will supply for time ( $t$ ) at a specific level of money wage and at an expected price level ( $p(t+h)$ ) at time  $t$ , i.e., workers will base their decision regarding the amount of work they supply on real wage that they expect at the beginning of the period. Thus workers measure their marginal disutility of labor by the real wage they expect to receive.<sup>3</sup>

A worker decides to supply a specific amount of labor when he/she maximizes his/her utility function (a function of leisure and expected real wage) subject to some constraints, e.g., non-labor income and wealth<sup>4</sup>. At this level of labor, when a worker maximizes his/her utility function, the utility of the real wage must equal the disutility of employment.

<sup>2</sup> Our focus is on analyzing the labor supply schedule as it occupied Keynes's argument against the classical economists.

<sup>3</sup> Disutility covers every kind of reason which might lead a man to withhold his labor because of low money wage.

<sup>4</sup> Work time is negatively correlated with the leisure time. A worker divides the 24 hours a day between leisure and work. The greater the work time, the less the leisure time.

supported his claim with two objections: (1) money wage and real wage move in opposite directions, i.e., workers cannot determine their real wage by collective bargaining; and (2) workers would not withdraw from the labor market as price level increases, where money wage is unaltered.

The purpose of this study is to examine the validity of Keynes' argument: the real wage cannot be an appropriate measure of the marginal disutility of labor. To accomplish this purpose, we will first determine whether money wage and real wage move in opposite directions. Then we will investigate whether or not workers withdraw from the labor market as price level increases; that is, to investigate the relationship between the price level and unemployment rate. Finally, we will examine whether an excess supply of labor exists under Keynes' thought; i.e., determining if money wage inflexibility causes a rise of involuntary unemployment.

This study will be conducted using simple tabulations of wages, prices, and unemployment rates data. This data is for seven industrialized nations (the U.S.A., the United Kingdom, France, Germany, Italy, Sweden, and Japan), and during the period after WWII.<sup>1</sup>

### The Classical Labor Market

The classical labor market can be modeled, based on the following simplified assumptions:

1. The analysis of the labor market is not dynamic but static, in that workers make their decision about their labor supply, for one period and in the beginning of that period.
2. The labor market is characterized by competitive equilibrium, i.e., wage and employment level adjust to clear the labor market at the beginning of the period.
3. Households possess perfect foresight with respect to expectations concerning the price of output at the end of the period (the beginning of the second period).
4. The labor supply depends only on the real wage (the nominal wage that workers receive at the end of the period divided by the correctly expected price level for the end of that period), i.e., labor supply function is

$$N'(t,t) = N(w(t+h)/p(t+h,t))$$

where  $t$  is the beginning of the period,  $t+h$  is the end of the period and the beginning of the next period,  $N'(t,t)$  is the supply of labor at time  $t$  that workers decide upon at time  $t$ ,  $w(t+h)$  is nominal wage that workers will receive at time  $t+h$ , and  $p(t+h,t)$  is output price (price level) that workers expected at time  $t$  to encounter at time  $(t+h)$ .

Based on the previous assumptions, the labor market will be in equilibrium such

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<sup>1</sup>Snower [1, p. 16] stated that "[It] would surely be unwise to have a heavy stake in a policy whose underlying theory explains little of how unemployment has evolved in the postwar period."

## **The Classical Labor Supply Curve: Is Keynes' Critique of This Schedule Still Valid?**

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**Abstract.** The purpose of this study is to examine the validity of Keynes' argument: the real wage cannot be an appropriate measure of the marginal disutility of labor; i.e., to investigate whether an excess supply of labor (involuntary unemployment) exists as price level increases and /or as money wage becomes sticky downwards. This study was conducted by using simple tabulations of wages, prices, and unemployment rates data for seven industrialized nations during post WWII period. The empirical analysis of unemployment rates, price levels, and wages suggests that involuntary unemployment arises as price level increases and/or as money wage has become rigid downwards for the industrialized nations during post WWII period. This finding, therefore, confirms the validity of Keynes' criticism of the classical labor supply; that is, the real wage is not an accurate measure of the marginal disutility of labor.

### **Introduction**

The classical labor supply is a function of the real wage ( $w/p$ ) only, i.e., real wage is an accurate measure of marginal disutility of employment. Workers will supply  $x$  amount of work hours in which the utility of their wages equals the marginal disutility of labor.

This approach by classical economists was widely believed prior to Keynes' book, *The General Theory*. In his book Keynes rejected the classical labor supply approach by arguing that the real wage ( $w/p$ ) is not a valid measure of the marginal disutility of employment, i.e., workers do not respond to changes in the real wages. If money wage ( $w$ ), for example, declines or price level increases, workers would not withdraw from the labor market merely because they realize a decline in their real wage ( $w/p$ ). Thus, not only voluntary unemployment, but also involuntary unemployment will arise. Keynes