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POST KEYNESIAN EMPLOYMENT ANALYSIS AND OECD UNEMPLOYMENT

by

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Post Keynesians [hereafter PK] fashion their theory of employment (i.e., private sector labor-demand hiring) utilizing Keynes's general theory. Entrepreneurial demand for hiring workers is derived from the point of effective demand determined in product markets. Since Keynes's "general" theory requires fewer restrictive axioms than the axiomatic theory underlying both classical economics (new and old) and "Keynesian" economics (new and old)[(1)], there is no aggregate demand for labour schedule in the sense that underlies Phelps or Nickells view of the existence of eiither a "natural rate of employment or a NAIRU.

My task in this "Policy Forum" is two-fold:

(a) to provide (in Section II) a PK perspective on the high unemployment rates in OECD in the last quarter century and (b) in Section III to explain why, in contrast to Phelps and Nickell's framework, PK theory demonstrates that (i) a reduction in the real wage is sufficient to increase ermployment and why (ii) NAIRU is a fallacious concept.

Keynes's General Theory is a classic (defining a classic as something everybody cites and nobody reads), while Phelps [1994] and Layard, Nickell and Jackmen [1990] are merely widely read and known by the current generation of economists. Accordingly, my task will require injecting into a "policy Forum" a short discusion of the PK analytical framework (Section I) to expose the reader (perhaps for the first time) to the logical framework developed by Keynes and its difference from that underlying Phelps's and LNJ's. Keynes's logical foundations are not the same as either Samulson Keynesian-cross or Hicks's IS-LM framework (which Hicks [1980-81] recanted as not representative of Keynes's general theory.).

I.. THE LOGICAL DIFFERENCE

The point of effective demand is determined by the intersection of Keynes's aggregate supply (Z) and demand (D) functions --where both functions are expressed entirely in terms of money (or money values deflated by the average money wage rate i.e., in wage units) and employment units [Keynes, 1936, p.41]. The Z-function is directly derivable from the Marshallian firms' supply functions [see Davidson, Palgrave]. The aggregate demand function consists of D_1 spendimg (expenditures related to current income and employment e.g., the propensity to consume) and D_2

Spending (expenditures not related to current income (e.g., investment, government and exports) [cf. Keynes, 1936, pp.28-30].

The rationale for using these specific Z,D functions resides in Keynes's distinction between an entrepreneurial economy and a cooperative or non-monetary, real exchange economyeconomy. An entrepreneurial economy is one where money and money contracts are an essential tool for organizing time consuming production (and exchange) processes. Consequently, in such an economy, money is never neutral in either the short-run or the long-run. A cooperative or real exchange economy, on the other hand, is one where the classical theory (whether it be Old Classical, Neoclassical Synthesis Keynesians, New Classical, New Keynesian or even Phelps's [1994, p. 2] modern structural equilibrium theory or LNJ's "Unemployment" [1994] theory. -- and consequently money is always neutral at least in the long run..

The relevant characteristics of Keynes's General Theory that are fundamental to the Post Keynesian analysis of employment are:

1. Involuntary Unemployment is a possible and normal short- and long-run equilibrium outcome of any money-using market-oriented laissez-faire economy. The equilibrium unemployment level is determined by the intersection of the aggregate demand and supply functions, i.e., the point of effective demand, whether these functions are expressed either in nominal terms or deflated by the money wage rate. In any entrepreneurial economy Say's Law "is not the true law relating the aggregate demand and supply functions [Keynes, 1936, p. 26], and three classical axioms are not applicable. These classical axioms are: (1) the neutral money axiom, (2) the ergodic axiom (that assumes that an uncertain future can be reduced to a probabilistic risky future which can be reliably predicted, and (#0 the gross substitution axiom.

2. The marginal productivity of labor function is not the demand curve for labor in any money-using market-oriented entrepreneurial economy. At best, a conception of an aggregate labor marginal productivity curve [muliplied by a scalar representing Lerner's [1935] degree of monopoly] can be interpreted as, in Patinkin's [1965, pp.391-2] terminology, "a market equilibrium curve" that specifies the real wage outcome associated with any given equilibrium level of employment where the latter is determined by the point of effective demand.

3. A downward sloping marginal product of labor curve would be "the obverse of the familiar [classical] proposition that industry is normally subject to decreasing returns [i.e., increasing costs] in the short period during which equipment is assumed to be constant so that the marginal product in the wage good industries (which governs the real wage) necessarily diminishes as employment increases" [Keynes, 1936, p. 17]. Only if in the aggregate industries are operating under diminishing returns will an increase in employment induced by an increase in effective demand result in a lower real wage outcome [Keynes, 1936, p. 18].

In his response to Dunlop and Tarshis, Keynes [1937] admitted his General Theory does not require that higher levels of employment equilibrium are necessarily associated with lower real wage rates. As long as effective demand rises then employment will increase. Whether the resulting real wage declines or not depends on the supply conditions including returns to labor,

the degree of monopoly, etc that underlay the Z curve (as LNJ [1990, pp.341-2] recognize but fail to incorporate into their analysis..

4. In an entrepreneurial economy, money is never neutral in either the short run or long run [cf. Keynes 1935, p. 409]. Consequently, the economy will not be automatically self-adjusting to any full employment rate (or natural employment rate or natural interest rate) and "without purposive direction it is incapable of translating actual poverty into potential plenty" [Keynes, 1935, p.].

In a market-oriented monetary economy, money always matters. Moreover, in the post-1973 open global economy of flexible exchange rate markets, speculation, imbalances in international monetary payments and foreign exchange market activities are the money matters that plays a prime role in determining global employment as well as the distriubtion of employment among the trading partner nations. As we will argue below the high unemployment rates associated with OECD nations (compared to the first quarter century after World War II) can be largely explained in these terms.

5. Contracts denominated in money terms are a ubiquitous human institution used to organize production and exchange activities in all market-oriented entrepreneurial economies. The civil law of contracts evolved to help humans organize time-consuming production and exchange processes in a world of nonergodic (uncertain) circumstances[(2)]

where economic agents recognize that future outcomes can not be reliably predicted on the basis of past and current data. Since the money-wage contract is the most ubiquitous of these efficiency-oriented contracts, modern economic systems can be characterized as money-wage based systems. The ubiquitous use of the money-wage contracts underlies (1) why Keynes (and PK) deflate the nominal values of the Z and D functions by the (money) wage unit to obtain output measures in terms of labor time rather than deflating by a goods and services price index in a delusive attempt to measure aggregate real output, and (2) why in a money-using economy, the market demand for labor is not derivable from any marginal productivity relationships any more than the micro-demand for any product is deriveable from the marginal cost schedule of a firm or the supply schedule of the industry.

6. Money is a chartalist institution. In any money-using system, liquidity is defined as being able to meet your monetary contractual obligations as they come due. The civil law of contracts makes the State the enforcer of all contractual commitments. In modern entrepreneurial systems, where slavery is illegal, all contractual obligations can ultimately be enforced only in terms of nominal payments and penalties. Thus money and the demand for liquidity affects real behaviorial decisions in both the short and long run.

7. Money possesses two "essential properties" [Keynes, 1936, ch. 17], namely its elasticity of production is (approximately) zero, i.e., money does not grow on trees, and its elasticity of substitution with the products of industry is (approximately) zero so that if the price of money

(or other liquid assets increases) agents do not attempt to substitute producible goods to provide the same services as liquid assets do. Consequently, as Hahn points out, "in any economy which is not a barter economy, the existence of "any nonreproducible asset [i.e., a durable that has a

zero elasticity of production] allows for a choice between employment inducing and non-employment inducing demand. But, of course in a monetary economy money is an important nonreproducible asset" [Hahn, 1977, p. 39]. In other words, as Hahn [p. 31] unemployment is possible as long as there "resting places for saving [in] other than reproducible assets"[(3)].

Unfortunately Keynes's method of analysis has been ignored by the majority of the profession who in a retrogression movement encouraged by Samuelson's Foundation of Economic Analysis and the neoclassical synthesis adopted the classical axiomatic microanalysis as the foundations for expressing the aggregate demand function on the assumption of neutral money and the aggregate supply function on the assumption of Say's Law based either on the classical labor supply function where homogeneous workers are willing to do a day's work for a day's pay or the New Keynesian labor supply where workers are a homogeneous group of shirkers and wastrels who must be bribed to do a day's work for more than a day's pay. Because Keynes's functional analysis is practically unknown to most readers of this journal, I will be required to

II.THE POST KEYNESIAN EXPLANATION OF HIGH OECD UNEMPLOYMENT

The 1944 Bretton Woods agreement formed the basis of the immediate post-war international payments system. In large measure, this agreement was shaped by J. M. Keynes's incompatibility argument that flexible exchange rates and free international capital mobility were incompatible with the goals of achieving global full employment and rapid economic growth in an era of multilateral free trade [Cf. Felix, 1998]. Operating under this Keynesian "incompatibility thesis", the free world's economies experienced unparalleled economic growth and prosperity.

In the 1960s, however, conservative economists began arguing that Keynes was wrong. The conservative mantra was free trade and optimum global economic growth required a laissez-faire approach to international economic matters. In other words flexible exchange rates and free capital mobility were required for global prosperity.

In 1972, the first oil price shock created huge international payments imbalances and unleashed inflationary forces in oil consuming nations. The resulting economic dislocation placed policy makers in a difficult position. Under these circumstances, politicians found irresistible the allure of the conservative siren song that "all is for the best in the best of all possible worlds provided we let well enough alone". Policy makers abandoned any attempts to limit international financial flows and permitted exchange rates to float freely.

This new international world of finance made the exchange rate itself an object of speculation. Freed of any government restraints and utilizing the new computer technology, financial capital could speed around the globe at the speed of light. Since the mid-1970s international financial transactions have grown thirty times as fast as global exports. International financial flows now dominate trade payments and therefore exchange rates movements reflect changes in speculative positions rather than changes in patterns of trade. Moreover significant exchange rate movements alter the international competitive position of domestic vis-a-vis foreign industries. International competition and the inducment to invest in large investment projects with irreversible sunk costs has become the tail wagged by the international speculative exchange rate dog.

In the early 1980s, for example, a rising and overvalued US dollar transformed US heavy industries in the Midwest into a noncompetitive "rustbelt". More recently, THE NEW YORK TIMES noted that between February 1995 and February 1997, Korean export industries had lost their competitive edge to the Japanese, not because of any change in technological progress between the two nations but because the Japanese yen fell from less than 80 yen to more than 120 yen to the dollar while the Korean yuan-dollar exchange rate was much more stable.

Continuous movements in exchange rates since 1972 have made entrepreneurs more wary of undertaking large investment projects. Volatility in exchange rates implies less confidence in being able to estimate the future income stream of any investment project. Every exchange rate increase, for example, not only threatens domestic industries with significant loss of export-market share but also the loss in home markets as imports become less expensive. Managers have come to realize that any upward blip in the exchange rate during the lifetime of any contemplated investment project can saddle their enterprises with irreversible costly idle capacity. Consequently, ceteris paribus, the long-term expectations of the marginal efficiency of investment (adjusted for uncertainty) is reduced in entrepreneurs minds[(4)].

Not surprising, therefore, when the free world changed from a fixed to a flexible exchange rate system, the annual growth rate in investment in plant and equipment in the OECD nations fell from 6% (before 1972) to less than 3 % (since 1973). Less investment growth means a slower economic growth rate in the OECD nations (from 5.9% to 2.8%) while labor productivity growth declined even more dramatically (from 4.6% to 1.6%).

These statistics indicate that the pre-1972 period was a golden age of economic development for OECD economies. Abandonment of the principles and conditions that existing during the Bretton Woods period of 1950-1972 is a major factor explaining why the OECD economies have experienced slower economic growth, rising global unemployment, and increasing inequalities of income within each nation as well as between nations [Davidson, 1997]. Why, despite this clear record of failure of free international financial markets to produce a state of economic bliss do policy makers remain wedded to this free international capital market policy? Why has no government official come forth with a plan to re-establish the principles of Bretton Woods to provide for a fully employed and rapidly growing global economy?

Politicians stick with the conventional wisdom. They, therefore, do not have to take individual responsibility of poor performance of their economic systems since 1972. As Keynes noted "it is better for reputation to fail conventionally than succeed unconventionally". Today's conventional laissez-faire philosophy as embedded in the efficiency theories of Phelps and LNJ has no end of scapegoats that can be blamed for preventing the free market from delivering what the conservatives promise. It is the labor unions, or the monopolists, or the socialists who created a social safety net financed by an oppressive tax system that prevents the promised nirvana of the free market from being experienced [Cf. Phelps, 1994, pp. , LNJ, 1990, pp. 25 ff. , 472 ff.]

On the other hand, it takes courage for a politician to advocate unconventional solutions even when the record indicates that an innovative redesign of the current international financial system based on Keynes's principles adopted in Bretton Woods is more likely to deliver the goods!

Nobel Prize winning economist James Tobin has been warning that free capital markets with flexible exchange rates can have a "devastating impact on specific industries and whole economies". The result of the Mexican pesos decline that pulled down the dollar was to make US industry more competitive while both Japanese and German workers and exports significantly more expensive thereby depressing employment and output and exacerbating these nations's difficulties in recovering from the 1990-91 global recession. Nations that remained pegged to the mark suffered a similar fate,(e.g., France).

Persistent swings in exchange rates between groups of OECD nations has been a major contributor to the drastic decline in global economic growth rates and the creation of more than 130 million unemployed in OECD nations. Restoring a golden age of low unemployment, rapid economic growth and a stable international competitive structure that will allow nations to specialize in their comparative advantage industries. As Tobin correctly argues, what is required is some form of government constraint on international financial flows -- not the policy implications of Phelp's (to change the income tax to a VAT or those of LNJ to take a "tougher line" on the social welfare net. Threse policies imply that increase employment requires that workers be first forced to accept a lower real wage than that which prevails in the marketplace before the policy change.

III.CHANGES IN REAL WAGES: CAUSE OR EFFECT OF CHANGES IN EMPLOYMENT?

I tell my students that the best way to evaluate the policy prescriptions of any theory is to consider the model builder "as if" she is a stage magician. Model builders rarely make logical errors in moving from axioms to conclusions, any more than professional prestidigitators drop the deck while performing a card trick. Model builders excel at creating the illusion of pulling relevant policy conclusion rabbits out of their black hat (model). The more surprising the rabbits pulled from the hat, the greater the audience enjoyment and applause.

Accordingly, a careful examination of the rabbits put into the hat is required to evaluate the policy rabbits pulled from the hat. Invoking the name of the god "tractable science" is not a sufficient reason for accepting inapplicable rabbit axioms that even their breeder admits are "patently false" [Lucas, 1981,p.].

Nowhere is this rabbit in-rabbit out analogy more appropriate than with the claims of Phelps and Nickell et al. that policies aimed solely and directly at reducing the real wage are sufficient to reduce unemployment. This claim relies on these modern structural unemployment theory of shirking workers requires putting at least two classical rabbits (axioms) into their hat -- neither axiom is generally relevant for analyzing the demand for labor in a money-using, market-oriented entrepreneurial economy. The first rabbit claims the net marginal product curve of labor (MPL) is the demand for labor curve (Phelps, 1994, p. 154] or (at least) the demand curve for labor is the MPL schedule indexed to some scalar [Phelps, 1994, p. 49]. LNJ invoke a similar rabbit when they claim either that their "price-setting equation is the equivalent of the labor demand curve in perfectly competitive conditions" [LNJ, 1990, p. 20] or the net " marginal revenue productivity condition becomes "a standard labour demand function" [LNJ, 1990, p. 341]. In other words, Phelps and Nickell's policy forum prescriptions ultimately requres

acceptance of a supposition that the aggregate demand curve for labor is uniquely related to (if not equal to) a MPL schedule.

The second rabbit put into the hat by Phelps and LNJ is that their demand curve for labor is always downward sloping (LNJ "price setting curve is upward sloping) with respect to aggregate employment because industry operates, in the short run, under conditions of diminishing returns. This relevance of this second assumption to the real world in which we live was challenged as early as 1939 by Dunlop [1938] and Tarshis [1939]. LNJ [1990, pp. 341-2] to their credit recognize that diminishing returns in not a necessary feature of industries in imperfect competition (i.e., real world firms)[(5)].

We have already indicated that diminishing returns is not a condition for Keynes's GT framework. Empirical evidence since the 1930s has tended to verify the Dunlop and Tarshis findings that real wages do not necessarily decline as employment rises.

When asked to justify the rabbit that claims that the demand curve for labor is equal to (or a function of)the MPL schedule and hence the real wage determines the level of employment, mainstream theorists mechanically input this causality to the real wage by pointing out the MPL is the inverse of the logical condition for profit maximization. Stiglitz [1992, p. 367], for example, specifically insists that the marginal productivity curve must be the demand curve for labor because it is the algebraic equivalent of equating price to marginal cost and it is downward sloping because of diminishing returns[(6)].

What is true is that if involuntary unemployment given the level of effective demand, then, by definition, the marginal disutility of labour is necessarily less than ...the marginal product" [Keynes, 1936, p. 128]. It does not necessarily imply that either (a) the Phelps argument that lowering the real wage is the only way to increase employment, or even (b) if effective demand increases the real wage must decline (The cyclical real wage hypothesis).

There are of course other rabbits put into the Phelps hat that can not be justified as applicable to a money using entrepreneurial economy. For example Phelps [1994, pp. 405-6] boasts that the modern structuralist approach "treats unemployment as the outcome of real demands and supplies, not the supply of money", i.e., neutral money rabbit is essential to his theory.

If the first rabbit is rejected then it immediately follows that the only way to increase employment is to increase the point of effective demand independent of whether real wages fall, rise, or are constant as the economy expands. The real wage outcome will depend on returns to increasing output, changes in the degree of employment as output changes, and, in an open economy with flexible exchange rates, changes in exchange rates.

Unfortunately for their logic, these three rabbits cannot be the basis for sound policy prescriptions for the argument is what Keynes [1936, p. 259] called an ignoratio elenchi, i.e., the fallacy of offering a proof that is irrelevant to the proposition in question.

The proposition in question can be phrased as follows: given the obvious historically high rates of unemployment in OECD nations in recent decades vis-a-vis the early post war period, what

policies should be undertaken to restore unemployment rates to those that occurred in the 1950s and 1960s in the OECD? The onus is on Phelps and Nickell to demonstrate in a world stripped of their three rabbits why would specific policies aimed solely at reducing the real wage automatically increase the point of effective demand.

Before turning to the Post Keynesian explanation of why the recent high OECD unemployment rates, it may be useful for the reader unfamiliar with the Keynes-Post Keynesian Z,D model to use this framework to refute Phelps's argument [WSJ1994] that payroll taxes (and personal income taxes) are per se "mass job-killers" while value added taxes are not. Phelps claims that payroll and personal income taxes require businesses to pay a required real wage (including the tax) that is far greater than the marginal disutility of labor at that level of employment. Phelps claims that if a nation instituted a value added (or a sales) tax to finance government spending rather than a payroll tax, then by reducing the real wage (including the payroll tax) that the employer is required to pay, the private sector will hire, ceteris paribus, more workers-- even if by construction there is neither additional government spending nor private sector spending. Phelps rationale for this is that with the value added tax entrepreneurs raise the market price (including the tax) leaving "intact the marginal productivity of labor in a schedule sense" and therefore "leaves intact the demand price for labor in terms of money if the nominal price to consumers rose to cover the tax". Hence since there (by assumption)no change in MPL or the demand for labor, there can be no change in employment. A payroll tax, according to Phelps, while leaving the "after-tax money marginal product of labor...undiminished" causes the price of the product to be raised proportionately so that non wage income raises relative to wage income (since the wage share in total revenue is less than unity. But since, Phelps assumes workers will shirk more when their income from non-wage sources rises, he argues that entrepreneurs are required to pay higher real wages (to offset the increased shirking incidence as workers feel wealthier because of their nonwage incomes. "The end result is a decline in employment, a rise in the product wage [real wage] and a decline in the real wage to households" [Phelps, 1994, p. 155].

For Post Keynesians the Phelps approach raises the issue of how could a change in the type of tax collected from payroll to value added without any change in total tax revenue collect or government spending, increases the point of effective demand, i.e., increases the demand for the products of industry at profitable money market prices(including VAT)relative to money wage rates. For if it does then entrepreneurs will hire more workers in the private sector whether real wages decline (because of diminishing returns) are unchanged (because production occurs under constant returns) or even rises (because of increasing return s to production).

Alternatively, if the policy does not change the level of effective demand, then policy makers can attempt to lower real wages paid by firms until they are blue in the face without affecting private sector hiring decisions one iota.

KEYNES'S AGGREGATE SUPPLY AND DEMAND ANALYSIS

Following Keynes, here, is how this problem should be analyzed:

Let Z represent aggregate supply (or entrepreneurial expectations of market sales receipts (including any VAT) in monetary terms, D aggregate demand (or planned expenditures) in money units, w the pre-tax money wage rate[7] and N the number of workers. The aggregate demand function is

$D = f_d(w,N)$ (1)

The aggregate supply function is

$Z = f_z(w,N)$ (2)

Keynes accepted the "age-old" normal (Marshallian) supply conditions based on the marginal cost function plus any monopoly mark-up as a micro-basis for the aggregate supply function[8] of equation (2)

Keynes developed an expanded taxonomy for the components on the aggregate demand relationship to differentiate his general case from the classical special case. In the classical system, there is only a single category

of spending. All demand expenditures is a function of (and is equal to) income earned (supply). Keynes split aggregate demand into two categories, D_1 and D_2, i.e.,

$D = D_1 + D_2 = f_d(w,N)$ (3)

Keynes' D_1 demand category represented <u>all</u> expenditures which "depend on the level of aggregate income and, therefore, on the level of employment N,"[9] i.e.,

$D_1 = f_1(w,N)$ (4)

D_2, therefore, represented <u>all</u> expenditures <u>not</u> related to income and employment, i.e.,

D_2 f(w,N) (5)

These two categories make up an exhaustive list of all possible classes of spending. In terms of NIPA, D_1 is Consumption expenditures on domestically produced goods and D_2 is thee sum of gross domestic investment, government and export spending on products of domestic industry.

In figure 1, assume a given payroll tax of x per cent that raises $xN revenue at any given level of employment. Assume that all these dollars of revenue are spent on government purchases of goods and services directly (or fully distributed in entitlements and then these entitlements are spent on consumption goods.)

Let us assume that the government repeals the payroll tax and institutes a VAT that yields the identical revenue <u>at any given N level</u> and that the tax revenues are spent by government in the identical way as when the payroll tax was the revenue source. What is the effect on the point of effective demand?

The reduction in the payroll tax reduces the pretax real wage that the entrepreneur has to pay at each N level reducing the costs of production at each N level and thereby reducing the aggregate supply costs in the Z curve. If this was all that happened then the aggregate supply curve would decline from Z1 to Z1a as in Figure 2a and the vertical disance from ab, for example, represents the total decline in payroll taxes paid at each level of employment. If there is no change in aggregate demand for C, I, G, unless export demand increased dramatically, the aggregate demand curve would remain unchanged. Employment would rise by from N1 to N1a and the Phelp's argument would be demonstrated.

If the VAT tax is designed to yield as much revenue at each level of employment as the payroll tax, then though the costs of production has fallen at each level of employment by the vertical magnitude such as ab at N1 (as in Figure 2a), then the market price including VAT that the entrepreneur has to charge buyers has increased by exactly the amount equal same amount, ab. In other words, the effect of a VAT that yields the same revenue at each N-level as the payroll tax restores the Z function to its original position. Thus if there is no effect f the change in the source of tax revenue on aggregate demand, switching from a payroll tax to a VAT has no effect on effective demand and the level of unemployment is unchanged.

In other words, the Phelps argument must rely on a change in the tax structure

If the Phelps and Nickell policies are to be accepted, the burden of proof is on them to show that a change in the tax source or any other policy that merely reduces the real wage cost facing the entrepreneur either (1) increases in real terms D1 or D2 components of aggregate demand or (2) has shifts down the Z curve for his claim to be applicable in this monetary analysis. It should be clear from the aforecited discussion of Phelps analysis of VAT vs payroll taxes, it is only because Phelps assumes that labor workers harder (shirks less) each hour with VAT than with a payroll tax, that Phelps can claim a supply-side effect.

Those who remember an earlier supply-side revolution that argued if one reduced tax rates people would work harder (thereby shifting down the supply curve independent of demand) should accept the Phelps policy prescription with more than a pound of salt!

EXPORTS

Since the payroll tax is a cost that entrepreneurs must recoup in their prices while Vat taxes are usually not levied on exports, won't this hypothesized change in tax source stimulate exports and therefore increase the export component of D2 thereby increasing the point of effective demand?

Under these circumstances it is true that the quantity of goods for export will increase but, if VAT is to yield the same revenue at each level of employment, the loss of revenue from not collecting VAT on exports must be made up by increasing the VAT rate on each unit of product purchased domestically. Accordingly the VAT per unit sold domestically will be a greater amount than the payroll tax per unit of output. Consequently the after VAT real wage of wage earners will be lower at any N level than the after payroll tax real wage, and real consumption spending will be lower at each N level thereby tending to offset any gain in real export demand at each N level. For Phelps and Nickel's claim to be applicable, then the increase in exports must

more than offset the decrease in real consumption. But as long as global effective demand remained unchanged, the effect of a Phelps - Nickel's policy is to merely export your unemployment. It is subtle way of, in essence, lowering your exchange rate.

CAN FLEXIBLE WAGES EVER ASSURE FULL EMPLOYMENT?

Modern structural theories of employment share the view of PreKeynesian classical economists claimed that the only (primary?) Cause of unemployment was because wages were too high to sustain full employment. If money wages and prices were perfectly flexible and immediately decline with any shock that causes a fall in nominal demand, then full employment would be restored.

Unemployment could therefore be attributed to the "fact" that workers (and unions) fixed the wage too high and then refused to cut wages in the face of unemployment. Keynes rejected this view[(10)].

Keynes's principle of effective demand is not merely a novel way of demonstrating that wage inflexibilities are the necessary cause of unemployment. In Keynes's analysis, unemployment can develop even if wages are perfectly flexible. Changes in the money wage rate induced by some

exogenous change in demand will not automatically restore full employment.

Given space limitations, it is not practical to delve into the details of Keynes's answer to the classical "too high" wage problem. It is sufficient to note that if both aggregate demand and aggregate supply money proceeds are deflated by the money-wage, then Keynes's effective demand analysis is presented in terms of his wage unit. Equations (1) and (2) would be written as:

$Z_w = f_a(N)$ (1w)

and

$D_w = f_b(N)$ (2w)

where the subscript w indicates measured in (deflated by) nominal wage units. Equations (1w) and (w) are drawn in Figure 3 for a given money wage, w_1. The point of effective demand in Figure 3 is point E, and the equilibrium level of employment is N_e where

$D_w = f_b(N) = f_a(N) = Z_w$ (3w)

[Enter Figure 3 here]

What is the effect of a change in the money wage on this underemployment point of effective demand? By construction, any change in the money wage, say from w_1 to w_2, where $w_1 > w_2$, will not cause any change in the position or shape of the aggregate supply function in wage units. Consequently, if a change in the money wage is to increase the employment point of effective

demand and move the economy toward full employment equilibrium (N_f) in Figure 3, then the aggregate demand curve in wage units must be induced to shift upwards as a direct effect of the hypothesized decline in the money wage. As Keynes put it "the precise question at issue is whether the reduction in money-wages will or will not be accompanied by...an aggregate demand...which is somewhat greater measured in wage units"[(11)]. Keynes' "difference of analysis"[(12)] involves tracing how a change in the money wage affects D_1 and/or D_2 when both are measured in wage units relative to the unchanged aggregate supply function when the latter is also measured in terms of wage units. In other words, Keynes parameterization of the money wage forces the analyst to evaluate how any change in the money wage works through the D_1 and D_2 components of aggregate demand if one is to claim that a too high wage causes unemployment and a change in the wage (i.e., flexible wages) per se will cure the unemployment problem.

By loading marginal productivity rabbits into the classical hat, classical taxonomy deflected attention away from the necessity of studying the components of aggregate demand to explain involuntary unemployment, whether money wages (and prices) were flexible or not. The absence of flexible wages and/or prices per se is not a necessary condition for underemployment equilibrium. Nor is the existence of perfectly flexible wages and/or prices a sufficient condition for guaranteeing full employment.

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1. Keynes [1936, p.16-7] specifically noted that just as the Reimannian geometry of curved spaces required the throwing over of the axiom of parallels that was basic to Euclidean geometry,

what "is required in economics today" is throw over a similar restrictive axioms of classical economics.[see also Keynes, 1936, p.3]. Galbraith [1996] has cogently argued that Einstein's theory of relativity was an extension of Reimannian geometry to space-time concepts and that Keynes attempted to apply to classical economics the same approach as Einstein's revolution was to classical Newtonian physics.

2. In the absence of the ergodic axiom (What Samuelson [1966] labeled the ergodic hypothesis) the economic world is susceptible to ontological uncertainty. As a consequence it is logically impossible to reduce human decision making to algorithms.

3. Hahn [1977, p. 37] also notes that in an economy where money is a nonreproducible asset, "the view that with 'flexible' money wages there would be no unemployment has no convincing argument to recommend it. (I am here interpreting this to be a view about dynamics....)."

4. Even neoclassical economists recognize that as uncertainty increases entrepreneurs continually put off making investments as the "ability to delay an irreversible investment expenditure can profoundly affect the decision to invest" as Pindyck [1991, pp. 1110-11] demonstrates that net present values can increase in projects are postponed when the future becomes more uncertain. And clearly volatility increases the possibility of a more uncertain future. invocation of "hysteresis concepts have been used to explain why, when volatility occurs, even when conditions for profits brighten investors fail to undertake what would appear to be profitable investment projects under a more stable economic environment and can also feed into persistent changes in exchange rates {Pindyck, 1991, p. 1134-5]. Pindyck [1991, p. 1139] has demonstrated that even in the long run, more volatility "implies a firm should hold less capital" -- especially if decreasing returns or imperfect competition are relevant factors. Finally, it should be noted that Dornbusch [1987] has indicated that the same phenomenon occurs in labor markets where there are sunk costs in hiring, training, etc.

5. They incorrectly argue, however, that when there is constant returns to scale although the MRPL is a constant, the demand curve for labour in their construction does not exist [lnj, 1990, P. 341]. This statement is true if a purely competitive economy is assumed, but once imperfect competition is permitted, then, in their framework, the demand curve for labour will be the MRPL function,hose slope is a function of both returns to scale multiplied by a varialbe that is the Lerner degree of monopoly. 5. and the Lerner degree of monopoly

6. In numerable places, Phelps suggests that Stiglitz's analysis is similar to his own, e.g., [Phelps, 1994, p. 20, 57,69,246,248.

7. To match the Phelps's argument, this is the money wage rate per worker including payroll taxes paid by workers and employers, i.e., the pretax money wage as paid by the employer. The real wage received by the worker is the after tax money wage divided by the market price (including any sales tax or VAT). The real wage received by the worker is the money wage rate after all payroll taxes divided by the market price including all sales taxes and VAT.

8. The existence of monopolistic power in the product and/or the labor markets is not a necessary condition for the existence of a barrier to full employment. A purely competitive market system

with perfectly flexible wages and prices could still suffer from unemployment due to a lack of effective demand.

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