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Unemployment has been a concern of political economy since its inception. Petty, whose work Marx considered the origin of Classical Political Economy (Marx, 1967 [1867], p. 85), proposed a Public Works policy to address unemployment. The Physiocrats attempted to understand how social reproduction could be guaranteed in a social economy based on the production and circulation of commodities and money in and among various sectors. The "Improvement in the Productive Powers of Labour" and the "Nature, Accumulation and Employment of Stock" were among the concerns relevant to employment in Adam Smith's *An Inquiry into the Nature and Causes of the Wealth of Nations* (1776). His "society of perfect liberty," by which he meant a competitive capitalist economy, was characterized by a mutually reinforcing relation between capital accumulation and technological change. This point would later be emphasized by Allyn Young (1928), and incorporated into his student Kaldor's (1985) analysis of *cumulative causation* and the polarisation thesis concerning unequal development and declining terms of trade between industrialized nations and the Third World (constituting another route to the Prebisch-Singer hypothesis).

Ricardo is often thought to have switched the nature of inquiry away from the determination of the level of economic activity to the distribution of output and income, but he contributed to the discussion of unemployment both in his correspondence with Malthus and, especially, in his investigation of the Machinery Question in the third edition of his *Principles of Political Economy and Taxation* (1821). With Smith's insights concerning accumulation and technological change and Ricardo's discussion of the changing technical coefficients of production among sectors of the economy and its impact on employment, we have the origins of *structural analysis*, an indispensable tool for

investigating unemployment in capitalist economies. What are the implications for employment in a capitalist economy that is undergoing various kinds of structural and technological change, such as changes in labor supply and the supply of natural resources, capital- and labor-displacing technological change, and changes in the composition of final demand?

Marx's contributions (1867, and *passim*) were exceptional and his results decisive, as he analyzed the endogeneity of labor-displacing technical change in his "General Law of Capitalist Accumulation," (later formalized by Goodwin, 1967, in an early contribution to non-linear dynamics) overthrowing Malthus's population theory with his notion of the industrial reserve army. Marx identified various components of unemployed, such as semi-employed, cyclically unemployed, and permanently unemployed, demonstrating the *functionality* of unemployment in capitalist economies, its role in the cycle and its role in growth. The schemes of reproduction also laid bare the intersectoral relations and therefore conditions of reproduction, with its implications for employment, continuing the analysis begun by Quesney, to be taken up again in the twenties by Sraffa and Lowe and Luxemburg and Leontief.

In the meantime, however, with the rise of marginalist or neoclassical economics, we get for the first time a fully fledged theory of how, under certain conditions, a market economy will tend to the full employment of all productive resources, including labor. Perfectly flexible wages, prices, and interest rates constitute the self-adjusting mechanism that ensures unemployment will be eliminated in the long run. No such theory existed in Classical Political Economy, which had a different, and much weaker, version of Say's Law (Garegnani, 1983). In its neoclassical form, however, Say's Law hinged on the notion of an interest rate equating aggregate saving and investment at the full employment level of output.

With neoclassical economics, unemployment in capitalist economies results from some market imperfection, such as government regulation, or unions prohibiting wages from adjusting to their equilibrium level. It was this theory, and not Classical Political Economy, that Keynes's *General Theory* (1936) was meant to turn over. Keynes did believe that Malthus had an 'early and rude' notion of effective demand, but we know that in fact Malthus did not discover the principle of effective demand, and the argument he made against Ricardo was theoretically flawed. If Malthus had simply divided the economy into capital goods and consumption goods sectors, he would have seen the source of the demand for consumption goods over and above the demand coming from that sector's own workers. Workers in the capital goods sector also buy consumption goods. Of course, however, this can be the case without total employment in the two sectors fully employing the labor force.

It is important to understand that neoclassical economics does not merely assume full employment, although there are certainly models in neoclassical economics that do. Rather, there is a neoclassical *theory* of how the economy tends to full employment. It is also important to note that this theory is not fully depicted in the labor market alone. We also need the loanable funds market. If there is unemployment in the economy, in neoclassical theory this means that, since by definition labor supply must be greater than labor demand, the real wage must be above the equilibrium level (but see Darity and Horn, 1988). Competition in the labor market among the sellers of labor services will lead to the real wage being bid down, inducing greater labor demand and causing labor supply to contract. This process continues until the real wage reaches its equilibrium level, at which point labor supply is equal to labor demand. Assuming the elasticity of labor demand to be elastic, aggregate output and income must be higher now than before the fall in the real wage. Who will buy the additional output produced as a

result of the increased employment brought on by the fall in the real wage? The newly employed laborers, who will spend some of their new income on consumption, will purchase some of it. Unless they spend the entirety of their income, however, this will not be the case. If they save any of it, this income not spent will represent new production not purchased. Firms must have their output justified by real sales or they will not continue to produce at the higher (full employment) level of activity, and so this is where we depart the labor market and enter the market for loanable funds.

At the old equilibrium rate of interest, the higher saving is due to a shift out in the saving function resulting from the higher income. Nothing has happened to our investment function, however, so we have savings greater than investment, which corresponds to the net production not purchased at the full employment level of output. Banks now have excess reserves for which there is no demand at the old higher rate of interest, so banks competing with one another start cutting interest rates to attract borrowers. As the rate falls, borrowing increases, as some saving is withdrawn. This continues until we hit the new equilibrium rate of interest corresponding to the intersection of the investment function and the new saving function. There, savings equals investment at the full employment level of output and income, the economy is in macroeconomic equilibrium, and the price mechanism has eliminated the unemployment.

In many respects, Keynes's critique of neoclassical theory, inspired by the mass unemployment of the Great Depression, focused as much or more on the loanable funds market as the labor market. Keynes rejected key assumptions made in neoclassical theory concerning both the savings function and the investment function, both functions of the interest rate. Neoclassical theory holds income constant

when drawing the savings function, and holds expectations constant when drawing the investment function. For Keynes, saving is primarily a function of disposable income, and investment is determined by expectations of profitability, itself partly determined by the complex of expectations of other variables, such as expected future demand and expected future price of output once it is delivered to market. Savings equals investment in macroeconomic equilibrium in both neoclassical theory and in Keynes, but in the former savings determines investment through variations in the rate of interest, while in the latter investment determines savings through changes in income. In the Keynesian view, capitalism is a monetary production economy, and a 'pool' of savings is not required in order to finance investment. Savings itself is the result of economic activity (rising incomes), not the source of that activity, magically turned into investment by the banking system. Employment is not determined by the real wage, but by effective demand. Investors make decisions in an uncertain environment, in historical not logical time, and there is no coordination of aggregate investment that ensures it will exactly match the excess of aggregate production over aggregate consumption at full employment (Davidson, 1972). Bringing in the foreign sector does not change the result in any fundamental respect. Unemployment is a normal feature of capitalist economies, and the market system on its own will only operate at full employment by chance. Keynes provides a theoretical justification for government intervention to stimulate aggregate demand and promote full employment.

The classic statement of the full logic of the Keynesian position is Abba Lerner's functional finance (1943). Lerner proposed that in a capitalist economy with a state money system, a federal government could operate fiscal and monetary policies to ensure full employment, price stability, and an environment conducive to economic growth. He showed that taxing and borrowing are not funding

operations; rather, taxes ensure the demand for state currency and bond sales are a means to manage bank reserves and target an overnight lending rate. Deficits can be run without worry to eliminate unemployment, taxes can be used to guard against demand-pull inflation. 'Printing money' has no effect on the economy independently of government spending, giving, and lending, so it would be double counting to examine its impact in addition to these. This new view of fiscal policy gradually infiltrated the highest levels of policy making, albeit in slightly moderated form, so that by the time President Kennedy came into office he would hold Heilbroner and Bernstein's *Primer on Government Spending* (1963) in his hand and plead with the country to discard the old myths of deficits and the debt and promote a common sense approach to budgetary matters.

Many believed Keynes to have refuted the neoclassical theory that a market system tends to full employment on its own via the price mechanism. But many neoclassical thinkers were not ready to accept this conclusion. Here we are not referring to those who ignored Keynes or misinterpreted Keynes to be arguing that unemployment is due to sticky wages. That was already true in the neoclassical framework; if that was all Keynes had been saying he would have been saying nothing new. This view was partially due to the fact that Keynes did believe that for institutional reasons money wages tend to be fairly rigid downward, but that is different than saying that this is the cause of unemployment. It was also partially due to the fact that, for reasons of simplicity of exposition, Keynes assumed money wages to be constant for part of *The General Theory*. But he clearly stated that his results did not depend on this assumption and that he would relax it later on, which he did (1936 [1964], pp. 27, 257ff.). The neoclassical response that is most interesting for present purposes is the one that said: Keynes is making some real contributions. His insistence that we conduct aggregate analysis, that

money be seriously treated, his theory of the multiplier, even his liquidity preference theory, all are real contributions. But Keynes is not refuting neoclassical theory. All these contributions can be considered and blended into the larger body of neoclassical economics and it can still be demonstrated that the fundamental propositions of neoclassical economics still hold. Under certain conditions (perfectly flexible wages, prices, and interest rates), the price mechanism will still ensure that the economy tends to full employment of resources on its own, absent government intervention, in the long run. The price mechanism eliminates unemployment. This response was dubbed by Samuelson the "Grand Neo-Classical Keynesian Synthesis," or 'neoclassical synthesis' for short.

The centerpiece of the neoclassical synthesis is the real balance effects arguments. They begin by pointing out that, in Keynes, when aggregate supply is greater than aggregate demand, he assumes that output (income) is the adjustment mechanism. In other words, businesses with unsold inventories will slash output and lay off workers, causing income and spending to decline until the economy comes to rest at an underemployment macro equilibrium. What, the neoclassical synthesis argues, would happen if instead of slashing output, firms slashed prices, such that the price level would fall? The fall in the price level would increase the real value of cash balances, instigating two processes, known as the direct and indirect real balance effects. In the direct real balance effect, or Pigou effect, consumers and investors holding cash would feel richer and increase consumption and investment, with multiplier effects increasing aggregate output, income, and employment. In the indirect real balance effect, aka the interest rate effect or Keynes effect, the increase in the real value of cash money means that the amount of money necessary to satisfy the transactions demand for cash falls, increasing the amount available to satisfy speculative demand. The demand for securities rises, bidding up bond prices, causing interest

rates to fall. Consumers and investors increase borrowing in response to the lower interest rates, and we are off to the races—more consumption and investment, multiplier effects, rising output, income, and employment. Some versions include falling wages, cutting business costs and assisting them in lowering their prices. The two effects can occur simultaneously, with some consumers and investors increasing their spending in direct response to the increase in the value of money, others indirectly in response to the falling interest rates. In some versions of the interest rate effect, the story is told a bit differently, with deflation increasing the real value of the money supply, causing interest rates to fall, and off to the races once again.

It was a clever response. The arguments incorporate some 'Keynesian' features and insights—aggregate analysis, money as a central determining variable, the multiplier, even liquidity preference—and yet demonstrate that the central proposition of neoclassical theory still holds: the economy, absent government intervention, tends on its own to full employment, and does so via the price mechanism—perfectly flexible wages, prices, and interest rates. But the approach has some problems. The indirect real balance effect is sometimes called the "Keynes effect" because some of this was considered by Keynes as a theoretical possibility, but he also stated some reasons why he felt the argument was flawed, yet we do not find these counter-arguments considered in much of the real balance effects literature. Other authors noted counter-arguments as well. First, yes the real value of money goes up when the price level falls, but what about the value of other assets? If people are holding cash when the price level falls they might feel richer, but if their wealth is in the form of non-cash assets—land, buildings, stocks, inventories, etc., they might not. The devaluation of non-cash wealth will dampen the stimulative effects. Second, the fall in the price level increases the real value of debt. Now you have to

pay back your loans with money that is worth more. How important is debt for consumers and investors? If wages have fallen then workers have to work more hours to pay back debt that is worth more. It is doubtful they will be going out on a spending spree. This will also dampen the stimulative effects. The real value of the national debt also goes up. If people believe this is not good, regardless of whether it matters or not, it may dampen business expectations and consumer confidence. Third, consideration of expectations also complicates the story. If these are one time decreases in prices and interest rates and consumers and investors know they have fallen and stopped falling, then we might expect more spending and borrowing. But if they have fallen and people think they may fall again, then consumers and investors may not spend and borrow, but wait and watch. Theoretically, in the real balance effects stories, prices and interest rates stop falling when consumers and investors spend and borrow and the economy moves to full employment. So if consumers and investors are waiting until the prices and interest rates stop falling, and they do not stop falling until they consumer and invest, prices and interest rates will fall to zero as consumers and investors stand frozen watching and waiting. Of course, consumers and investors will believe prices and interest rates have hit rock bottom before they hit zero, and so may jump in, but how long before? When the economy is in a major deflation? So there are some problems with the real balance effects stories. Another one appears when we think of investors not only as buyers, but also as sellers. Buyers may be happy to see prices fall, but if you are thinking about borrowing and investing in plant and equipment to increase productive capacity to produce a good for sale, are you happy to see the price of the good you are going to be selling falling like a lead balloon? Students of Keynes will also note that the arguments also sneaked back in some very pre-Keynesian elements, like the mechanistic interest-elastic investment demand in the 'Keynes' effect. What happened to expected profitability of investors in an ontologically uncertain world? Or

just plain old business sense that you don't increase productive capacity when demand is not high enough to utilize the capacity you have already? There are also more empirical and historical problems—we have had many periods with substantial unemployment and slack demand, but have we seen deflation during these periods? We have seen decreases in inflation, but that just means the value of cash is being eroded more slowly, not the effect we need for the real balance effects.

Interestingly, the proponents of the neoclassical synthesis theory do not support the policy conclusions that follow logically from their analysis. They almost all supported monetary policy lowering interest rates as the pragmatic means of stimulating demand, rather than actually waiting for these effects to occur. Many even supported fiscal policy, and the pieces by people like Samuelson and Tobin from the early 1960s would sound 'radical' in today's context of budget balancing deficit hawkism. Samuelson (1966) even used the phrase 'functional finance', and touted "[Warren] Smith's Law"—the budget should never be balanced in any one calendar year. Now this was not really Lerner's functional finance, it was a deficit dove position of balancing budgets over the business cycle, but it was light years away from anything in the mainstream policy discussion today, including many of our 'progressive' think-tanks. So there was a contradiction between the theory and the policy of the neoclassical synthesis authors. And so Kennedy tried to convince the country that it is ok to cut taxes even if it means a deficit and a little run up of the national debt. And by the end of the sixties we have Nixon remarking famously that "We are all Keynesians now" (and Herb Stein, less famously, writing that "We are all functional financiers now"). But even this lukewarm pragmatic Keynesian policy approach was not to last. Stagflation came in the seventies, and the Keynesian response was weak. Cost-side

inflationary pressures are perfectly explainable within a Keynesian framework, but the crack in the 'Keynesian Consensus' turned into a major fissure.

The fiscal sociology of the rest of the century is nothing if not bizarre. By the early eighties 'supply side economics' was all the rage. Restrictive monetary policy pushed interest rates up sky high, and they slowly descended over the next decade. Official unemployment was in double digits as the Reagan tax cuts kicked in. The supply-side reasoning behind the cuts is something like follows: Tax cuts for workers give them an incentive to work, work harder and work more hours. Tax cuts for businesses means firms will invest and produce more. After-tax income is important to workers. But it is only one—a very important one, but nevertheless only one—part of total job satisfaction. Job security, work environment, many other factors are also important, as numerous studies have shown. What is happening to the job security index when unemployment shoots up to double digits in the Reagan recession? What is happening to the work environment index when Reagan deregulation kicks in? Moreover, to enjoy the incentive of take home pay, you have to have some pay to take home, and so these incentives mean nothing for the unemployed. As far as businesses, again we go back to Keynes's emphasis on expected profitability. It doesn't matter if taxes are smaller, if expectations are dimmed because of a recession and unemployment, firms aren't going to be increasing productive capacity. They aren't able to sell all they can produce now. A capital gains tax cut does nothing to guarantee investment. An investment tax credit may help a little more, at least then there is some incentive to invest. What fueled the so-called Reagan recovery were the huge deficits that appeared. So Supply-side Reagan becomes the last great Keynesian. But then here comes the move that we are still living with, like a ball and chain: the Democrats take a political strategy of trying to call the

Republicans fiscally irresponsible. The Democrats were very upset about Heilbroner and Bernstein's *The Deficit and the Debt: False Alarms, Real Possibilities* (1989), based largely on Eisner's work. They didn't want to hear that deficits weren't a problem and maybe they were even good sometimes and we shouldn't fret over the debt. So that by the end of the eighties, the two parties are both claiming to be the 'really' fiscally responsible one, against those terrible deficits and the national debt, and any common sense that had been represented in the mainstream policy debate vanishes into thin air. A key part of "It's the Economy Stupid!" Economics is budget balancing, deficit reduction. The deficit did fall; the budget even moved into surplus. But that was not the cause of the Clinton expansion, it was the result of rising incomes and the automatic stabilizers. By the turn of the century we have Al Gore running on paying down the debt, surplus *uber alles*, and putting money in a lock-box. The private sector is racked with debt, and the U.S. looks more and more like Japan a decade ago, where interest rates at zero for years have done nothing to stimulate the economy.

The neoclassical synthesis was not the only response to *The General Theory* of course, nor was *The General Theory* the only non-neoclassical attempt to come to grips with unemployment in capitalist economies. Some who were sympathetic to Keynes, nevertheless were unsatisfied with many aspects of the work. For example, Keynes did not address issues related to income distribution or technological change. Members of the Kiel School, led by Adolph Lowe, had revived Marx's schemes of reproduction, participated in the first work on input-output models (Alfred Kahler and Leontief were members), and looked at the relation of income distribution, technological change, and employment in a sectoral framework that owed more to Classical Political Economy (including Marx) than the monetary theories of the cycle of either the Austrians or the Cantabridgians. If endogenous capital- and/or labor-

displacing technical advance caused a shift in income distribution away from wages and toward profits, differing marginal propensities to consume could result in an effective demand crisis. Neisser's article on "Permanent Technological Unemployment" (1942) revived the question Ricardo had posed over a century earlier, whether compensation would naturally wipe out the employment effects of displacement. Others became concerned not only with labor-saving improvements, but capital-saving improvements that can have labor-saving effects. Product innovation and extinction, process innovation and extinction, maturation, saturation, creative destruction, these examinations constituted a return to structural analysis. Structural analysis and effective demand analysis are by no means mutually exclusive; for some, Kalecki's work offered an alternative route to the principle of effective demand that was more conducive to examining distributional issues, in line with the Classics and Marx.

While structural analysis and effective demand analysis may be complementary, the former raises issues that may alter the conclusions one obtains when the latter is considered alone, and with policy implications. In Keynes, while unemployment is a normal feature of capitalist economies, it appears as an irrational by-product of the system. Since it is due to effective demand deficiency, government policies stimulating demand can eliminate unemployment without creating any other problems, assuming demand is not over-stimulated. But in much of the structural analysis what becomes clear is the *functionality* of unemployment in capitalist economies. Unemployment is not an irrational by-product; it serves a purpose in the system. Unemployment holds down wages by decreasing the bargaining power of labor, it disciplines workers, it provides a pool of unemployed who stand ready to work when the demand for labor rises in response to expansion. If this is the case, then this has implications for policy. Things may no longer be so simple as increasing aggregate demand.

There are other problems as well. Even if we could overcome the political obstacles to the common sense use of deficits to stimulate demand, structural analysis shows that a full employment system is extremely difficult to maintain, once it is attained. Excess capacity and a pool of unemployed give the system flexibility. Intersectoral shifts and changes in output can occur without production bottlenecks and other rigidities that can be inflationary. A private sector brought to full employment and full capacity cannot adjust easily to structural and technological change. Lowe (1976) and Pasinetti (1981; 1993) both employ what Lowe called the "instrumental" method to examine the structure and dynamics of full employment systems, both concluding that it is highly unlikely if not impossible for capitalist economies to *maintain* full employment in the face of ongoing structural and technological change, even if it could be *attained*. While Lowe did not pay close attention to issues related to effective demand, Pasinetti has examined the relationship of the effective demand problem and the structural change problem. By examining both the rate of growth of demand and changing technical coefficients *sector by sector* in historical time, issues of the employment effects of displacement and compensation can be clearly elucidated. The instrumental method must be distinguished from assuming full employment or assuming a tendency to full employment. The method simply examines the nature of full employment systems, as a theoretical and policy tool. The issues that arise in the Lowe-Pasinetti systems leave a doubt concerning the efficacy of aggregate demand stimulus, assuming full employment is a goal.

Many of these issues nagged some of the earlier writers in the Keynesian tradition. For example, from the late 1950s to the end of his life Abba Lerner worked on market anti-inflation plans

(MAPS), due to problems he saw in industrial economies and theoretical problems with his earlier functional finance approach based solely on aggregate demand stimulation. Pushing the private sector to full employment just will not work. Effective demand analysis without structural analysis doesn't show these problems, doesn't understand the functionality of unemployment in capitalist economies. Lowe (1988) believed that the only way to full employment in a capitalist economy was with substantial public sector employment, he called it "planned domestic colonization"—that should go over well on the Sunday morning talk shows! He didn't consider the need for increased public employment a bad thing, because we are in a perpetual condition of shortage when it comes to community services, public goods, infrastructure revitalization, and the like. From the perspective of structural analysis, a substantial public service sector that creates what Minsky (1986) called an infinitely-elastic demand curve for labor leaves enough flex in the private sector to avoid the bottlenecks and rigidities. Minsky, like Lerner, came at it from the Keynesian angle, but Keynes and Minsky were concerned about technological unemployment, though their remarks on these issues are less well-known. From the structural analysis perspective, the real key to understanding the benefits of public sector activity is, as economists from Schumacher to Sen have noted, that government does not have to base its decisions on private cost-minimizing efficiency criteria, but on broader social and macroeconomic goals. So government can choose to use a more labor-intensive method of production, where a private firm could not due to competitive pressures. Government can choose not to use capital equipment or natural resources that are in short supply, government can choose not to use methods of production that pollute. So making up the difference between the private sector level of activity and full employment with public service activity leaves the system some breathing room—which is what the functionality of unemployment in capitalist economies is all about. Other fiscal and monetary policies can still be used to "fine-tune" the

ratio of private to public sector employment. One of the interesting things about the Public Service solution is that it almost doesn't matter what the cause of unemployment is—it will abolish unemployment in any case. Of course, other issues need to be dealt with—making sure it is dignified work and so on, but we should be making sure all private sector work is dignified, too!

The other interesting thing about the public service employment approach is that it is perfectly compatible with the functional finance approach to budgetary policy. In fact, functional finance comes into its own with the public service approach, as deficits are automatically permitted to rise to pay the public service sector wage bill. Functional finance manages aggregate reserves to target benchmark interest rates. In Pasinetti's terminology, the effective demand condition is satisfied simultaneously with the structural change condition, where the matrix is expanded to include the public service activities, whose technical coefficients are variable based on social criteria.

Now there is a huge assumption here: unemployment is bad, so full employment is good. True, if unemployment is bad because of the poverty it creates, then it might be argued that instead of putting everyone to work we should be guaranteeing minimum incomes, for example. Guaranteed income and the guaranteed job are not necessarily mutually exclusive, they can easily be complementary. Public Service Employment, with people able to pursue crafts and art and music and education and community gardens and working together in positive social activity, need not be perceived as "make-work." People want to be doing good works, and Public Service Employment may be used to redefine what constitutes meaningful productive activity. The Public Service job, by the way, can be used as a vehicle for progressive social policies. Put the basic public service wage above the minimum wage and it

becomes the effective minimum wage. Make sure the basic public service wage-benefits package includes healthcare and childcare, and firms in the private sector will have to match it or compensate in some other way. The Public Service job can serve as a benchmark for the rest of the economy.

The tremendous social and economic costs of unemployment and the arguments for full employment have been we'll-documented. There is no alternative to either supporting a guaranteed job or a guaranteed income, it has to be one or the other, if we are talking capitalism. One or the other has—or one and the other have—to provide a solid ground for society. The only alternative to guaranteed jobs and/or guaranteed income is the transformation from capitalism to socialism or some other economic system. Again, these aren't mutually exclusive—a guaranteed public service job may be the short run policy and the transformation to full economic democracy the long run solution.

The history of economic thought reflects the historical development of capitalism, and capitalism is first and foremost a system that does not provide employment for every person willing and able to work. Mining the history of economic thought for insights concerning unemployment—and full employment—is not an exercise in admiring antiquated ideas. It is a task that is inseparable from practical considerations of public policy.

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