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ABSTRACT

The initial discussion focuses on the dilemma posed by the fact that inflation and unemployment cannot simultaneously be eliminated with the macro-economic policies alone. To opt for controlling inflation means a delay in dealing with an already serious poverty problem. Suggestions for dealing with the inflation-unemployment dilemma are classified into 2 groups: (1) those which seek to remove the causes; and (2) those which focus on the symptoms. This paper specifically addresses itself to the question of whether, in dealing with the symptoms via public employment programs, the dilemma is worsened. A simple derivation of the inflation-unemployment trade-off (known as the Phillips Curve) is presented. It is then used to analyze the potential effects of public employment on the trade-off. It is concluded that income guarantees do have inflationary costs; however, the authors do feel that, whenever possible, job vacancies should be filled via public employment programs. (TL)

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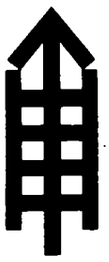

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The Inflation-Unemployment Tradeoff and Public Employment

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THE INFLATION-UNEMPLOYMENT TRADEOFF AND PUBLIC EMPLOYMENT

by

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I. Introduction

For many years now economists and laymen alike have recognized that the United States faces a "cruel dilemma" in choosing between inflation and unemployment. We can follow macro-economic strategies which bring about little inflation at the cost of much unemployment, or little unemployment at the cost of much inflation, but we cannot simultaneously eliminate both evils with macro-economic policies alone. Furthermore, since unemployment bears especially heavily on the poor, the cruel dilemma can at one remove be thought of as a dilemma in choosing between inflation and delays in dealing with our already serious poverty problem. Many of our most promising efforts to alleviate poverty are based on the assumption that labor markets are at least reasonably tight, which assumption unfortunately implies that at the same time there will be some inflation and, what is worse, an increasing probability of continuously accelerating inflation. Given the serious costs of this inflation, macro-economic policy-makers are understandably reluctant to let labor markets become this tight, thus unintentionally but effectively blocking the creation of an environment favorable to antipoverty efforts.

Suggestions for dealing with the inflation-unemployment dilemma can be classified into two groups--those which try

to remove the causes of the unfavorable tradeoff and those which deal with the symptoms of the tradeoff. The most prominent of the former group of suggestions features the creation of some sort of an incomes policy which makes the Federal Government a party to the wage bargain between employers and wage earners. Less prominent but still potentially important suggestions feature attacks on monopoly or monopsony power, strategic use of government tariff or stockpiling policies to remove bottlenecks, and so forth. The logic of the cruel dilemma suggest that each of these policies, no matter how remote it may seem from the problems of the poor, will assist in alleviating poverty and should be pursued if at all possible.

The other group of suggestions, possibly more pessimistic about dealing with the causes of the unfavorable tradeoff, has stressed dealing with the symptoms of the dilemma. One important example of these suggestions has been public employment targeted at those who remain unemployed and poor as a result of attempts to curb inflation. But to the extent that public employment programs in and of themselves increase the wage bargaining power of a large group of workers who no longer must fear unemployment, we may question whether in dealing with the symptoms of the dilemma, public employment is not simultaneously making the dilemma worse. In this paper we try to answer this question. We first

present a simple derivation of the inflation-unemployment tradeoff, or Phillips Curve as it is widely known,[1/] in order to see how bargaining power and labor market structure combine to position the curve. We then use this derivation to analyze the potential affects of public employment on the inflation-unemployment tradeoff. Section II deals with the analytics of the Phillips Curve, Section III with public employment, and Section IV presents a summary and conclusions.

1/ A. W. Phillips, "The Relation Between Unemployment and the Rate of Change of Money Wage Rates in the United Kingdom, 1861-1957," Economica, New Series, November, 1958.

II. A Model of the Inflation-Unemployment Tradeoff[2/]

We begin our analysis of the inflation-unemployment tradeoff by comparing two variables: the ratio of vacant jobs to the labor force (V/L), and the ratio of unemployed workers to the labor force (U/L). These variables can coexist because at any point in time the abilities or the regional location of unemployed workers may not correspond to the pattern of demands to fill job vacancies.

But although vacancies and unemployment coexist, empirical examination shows that for any given institutional setting there will be a stable inverse relationship between the two.[3/] When unemployment rates are high, vacancy rates are low, and vice versa. This relationship is plotted in Figure I.

The logic of the inverse relationship is as follows. If unemployments rates are relatively high, say at $(U/L)_1$, workers will be lothe to quit their jobs, and quick to accept vacant jobs, for fear of not being able to obtain other jobs. Thus the vacancy rate will tend to be low, as at $(V/L)_1$.

2/ This analysis follows that of Charles Holt, et.al., The Unemployment-Inflation Dilemma: A Manpower Solution, The Urban Institute, 1971.

3/ See C. Boschan, "Fluctuations in Job Vacancies - An Analysis of Available Measures," unpublished, National Bureau of Economic Research, New York, 1969; J. C. R. Dow and L. A. Dicks-Mueaux, "The Excess Demand for Labor: A Study of Conditions in Great Britain, 1946-56," Oxford Economic Papers, February, 1968; J. G. Myers, Job Vacancies in the Firm and the Labor Market, New York, 1969.

We arrive at the same conclusions if we take the employers' point of view. High unemployment rates suggest the existence of a ready pool of available labor which can and **will** be used to fill existing vacancies. If, on the other hand, unemployment rates are low, there is relative scarcity of workers and a relatively high vacancy rate, as at $(U/L)_3$ and $(V/L)_3$. The V-U function is the locus of combinations of the two variables for any institutional labor market setting. This locus is shifted by forces which alter the basic institutional setting.

Each vacancy-unemployment combination is accompanied by a rate of money wage increase which satisfies both employers and wage earners. Should unemployment be high and vacancies low, workers will find their bargaining position threatened by both the plethora of unemployed workers and the absence of job vacancies--hence they will settle for modest money wage increases. By the same token, firms will find their bargaining power enhanced by the large amount of unemployment and by the fact that they do not have many vacancies to fill--hence they will agree to only modest wage increases. In Figure I we represent this situation by the line G_1 which passes through $(U/L)_1$ and $(V/L)_1$.

As we move along the V-U function in a leftward direction, labor markets become tighter, vacancies rise, and unemployment falls. The increased tightness of labor markets tends to

favor workers against firms and leads to higher rates of money wage increase. Workers have less competition from the unemployed and hence fewer inhibitions about raising wages, while firms have greater need to raise wages to fill existing vacancies. Hence G_2 which passes through $(U/L)_2$, $(V/L)_2$ is greater than G_1, and similarly G_3 is greater than G_2. 4/

A potentially important determinant of the money wage growth corresponding to each vacancy-unemployment pair is what we may term the "unemployment frustration factor." Assume that unemployed workers have certain wage aspiration levels which determine the wage they will accept to leave the ranks of the unemployed. Though aspiration levels differ between workers because of demographic and economic variables, we can be reasonably certain that the aspiration for each worker searching for a job will decline as his own

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4/ In Figure I we have drawn the wage increase lines as rays from the origin, as if the ratio of vacancies to unemployment were the determinant of overall rates of money wage increase. Although this is a defensible proposition, we do not need to assume either that the wage increase lines pass through the origin or that they have a constant slope. The only necessary assumption is that at any unemployment rate, successive wage increase lines, corresponding to increasing numbers of vacancies, will represent progressively more wage inflation.

period of unemployment lengthens.[5/] The rate at which wage aspirations decline, or the unemployment frustration factor, will be quite significant in determining the pattern of wage acceptances and ultimately G. Anticipating the analysis to follow, we note that any sort of income guarantee will tend to reduce the economic frustrations of unemployment and thus raise G for a given V-U combination.

Another important determinant of the value of G is the extent to which workers expect wages and prices to rise. If workers do expect wages and prices to rise, they will attempt to maintain both their real purchasing power and their relative standing in the income distribution by demanding higher wages. Thus the same vacancy-unemployment structure will be consistent with a higher rate of money wage growth than was previously the case.

We can now graphically derive the Phillips Curve, or unemployment-inflation tradeoff, from the V-U function and the G lines. Figure II plots G against (U/L). Note that the horizontal axes of Figure I and II are identically calibrated and labeled. It is seen that, given the V-U function as drawn, money wage growth as given by line G_1

5/ A possible exception to this hypothesis may exist in what has been termed the "secondary labor market" where extra-market activity may compete for the services of unemployed or underemployed persons. See Peter Doeringer and Michael Piore, Internal Labor Markets and Manpower Analysis, 1971, Chapter 8.

is consistent with an unemployment rate of $(U/L)_1$. Thus we have one point in Figure II. By obtaining many similar (G, (U/L)) combinations and connecting the points, we obtain a negatively sloped Phillips Curve relation between the rate of money wage increase and the unemployment rate. The negative slope results from the fact that as unemployment falls, the implicit level of vacancies, and the rate of wage increases employers must pay to fill these vacancies, increases. The relationship thus shows that the more a nation tries to avoid money wage inflation, the more it will have unemployment, and vice versa. Since the curve is convex to the origin, it says that inflation is especially sensitive to low rates of unemployment.

We note first the role of macro-economic policies such as government spending, tax changes, and monetary policy in this analysis. If these policies have no expectations effects (we will consider changes in expectations separately below), they will move the economy along the V-U function to a new wage increase line and hence to a new point on the Phillips Curve. Thus simple macro-economic policies with no expectations effects shift neither the V-U function nor the relative bargaining power of labor and employers and do not shift the Phillips Curve. They only represent a movement along this curve.

We can classify those forces which do shift the Phillips Curve into two groups: (a) those which shift the Phillips Curve by altering the structure of labor markets (V-U function); and (b) those which alter the relative bargaining power of wage earners and firms (the wage increase lines).

The former group of influences includes any policies which attempt to train unemployed workers to fill existing job vacancies, thus simultaneously reducing both vacancies and unemployment. These policies shift down the V-U function and hence the entire Phillips Curve because they make a given rate of money wage increase consistent with a lower unemployment rate. By way of illustration, inward movements of the V-U function along ray G_1 in Figure I will be translated into inward horizontal movements at money wage growth rate G_1 in Figure II (the unemployment rate will be reduced while the rate of money wage inflation remains the same). The converse of this argument is that technological change which creates vacancies for highly skilled employees while reducing the demand for low-skilled employees will shift up both the V-U function and the Phillips Curve. The same statement would also be true of high minimum wages which price certain labor out of employment and thus shift out the V-U function and the Phillips Curve.

The second group of influences which shift the Phillips Curve are those working through the relative bargaining positions of wage earners and firms. We have already noted some of these influences. As one example, if there is greater union strength in an industry, the union may be able to force a higher rate of wage increase for any unemployment-vacancy position. This would, say, rotate the G_1 line to G_2 and imply that at $(U/L)_1$ we must now move our Phillips Curve vertically upward to G_2. Other examples of influences which shift the Phillips Curve outward are expectations of inflation, which force labor to bargain for and firms to concede higher money wage increases for every unemployment-vacancy point; expectations of a minimum wage increase; and a decline in the unemployment frustration factor brought about by income guarantees or unemployment compensation.

It is immediately apparent that many of the influences which shift the Phillips Curve outward are income redistribution measures that would otherwise be favored on humanitarian grounds. The reason that attempts to redistribute income do shift the Phillips Curve is that in a market economy we cannot expect the nonbeneficiary groups to sit idly by and do nothing while the beneficiaries of a change in union structure or government policy succeed in increasing

their share of total income. Thus if workers can push through a higher rate of money wage increase, firms will react to these higher wage increases with higher price increases so as to cause price inflation. Since this process has been very regular in the United States from the nineteenth century onward, we are accustomed to thinking of money wage inflation and price inflation synomously.6/ By the same token, if the government tries to shore up the incomes of low wage workers by a more rapid rate of increase of minimum wages, higher wage workers will react to this policy by pushing for higher wages for themselves also, and then firms will pass on all of these wage increases in the form of faster price increases. The end result is an upward shift in the Phillips Curve.

6/ Income shares remain constant if the rate of wage inflation less the secular rate of labor productivity advance equals the rate of price inflation. Since the rate of productivity advance is relatively constant, the constancy of income shares implies that increases or decreases in the rate of wage inflation are met, usually after some delay, by equal percentage point increases or decreases in the rate of price inflation. The same is true in reverse: that is, initial increases or decreases in the rate of price inflation are met after some delay by equal percentage point increases or decreases in the rate of wage inflation. Even if there were structural changes which allowed labor to gain or lose at the expense of capital, we would only observe short and medium run divergences in the rate of money wage and price inflation. After the economy arrived at the new equilibrium income shares, the previous equal percentage point relationship between the rate of wage and price inflation would be restored.

A further consideration increasingly discussed by economists relates to the short run and long run nature of the inflation-unemployment tradeoff. Virtually all economists would agree that in the short run lower unemployment rates can be bought at the price of some inflation. But there is great disagreement over whether this inflation can be controlled by policy-makers or whether it will inevitably progress to uncontrolled hyperinflation. Those who support the latter view believe that unemployment cannot permanently remain below the "natural rate" of unemployment, determined for a given structure of technology and tastes. This view implies that there is no permanent tradeoff between inflation and unemployment, or that the Phillips Curve is a vertical line.7/

Fortunately this debate, while of great substantive importance for macro-economic policy, can remain unresolved without rendering our analysis fruitless. This is because any policy measures which shift the negatively sloped short

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7/ Those who make this argument maintain that whenever there is even limited unanticipated inflation, the short run Phillips Curve shifts upwards, which causes even more unanticipated inflation and even greater upward shifts in the short run curve. The long run Phillips Curve described by these shifting short run curves will thus tend to rotate towards a vertical postion, indicating that in the long run it is not possible for the economy to remain below the natural rate of unemployment. The long run in this sense could be a very long time, possibly a matter of decades. See Milton Friedman, "The Role of Monetary Policy," American Economic Review, March, 1968.

run Phillips Curve inward would simultaneously lower the long run natural level of unemployment. We are in fact analyzing the impact of public employment on the same underlying labor market structure which determines the natural rate of unemployment.

III. Public Employment and the Phillips Curve

In this Section we examine how two types of prototype public employment programs particularly targeted at the disadvantaged influence the forces which have been shown to shift the Phillips Curve.

Consider first a guaranteed public employment (GPE) program of the "employer of last resort" variety.[8/] GPE would literally guarantee a job to all applicants at some wage rate, presumably at least the statutory minimum wage. GPE jobs could range from capital intensive public works to highly labor-intensive "make-work" projects, depending upon the size and costlines of the program and the skills of the participants.

The program would have three important effects. In the first place, it would reduce unemployment and shift the V-U function inwards. Secondly, there is a possibility that some private sector workers will quit their jobs to join the GPE program, thus creating vacancies and shifting out the V-U function and Phillips Curve. Thirdly, GPE would effectively eliminate the fear of unemployment for low income groups and increase wage aspirations, particularly for low wage workers.

8/ Such a program has been recommended many times, most notably in Howard H. Bowen and Garth Mangum, Automation and Technological Progress, 1967.

We cannot say what would be the net effect of all of these forces, but we would expect that the Phillips Curve would tend to be shifted out more the higher the public employment wage rate and the more permanent the employment guarantee.

It has been suggested that a mandatory termination provision be built into the GPE program. According to this provision, while the public employment program itself would be permanent, it would not be permanent for any individual worker. He would have a job guarantee for a certain period of time during which he could search for another job. This feature would then restore the worker's ultimate fear of unemployment and temper his wage aspirations. To the extent that even the unemployment in low skilled labor markets is of fairly short duration, such that all public employment personnel would have a reasonable chance of finding another job, the termination provision might be a feasible way of reducing the inflationary effects of GPE. But there is a clear problem with the termination provision if the disadvantaged wage earners involved have been priced out of the market by government enforced minimum wages or if there is a general insufficiency of jobs for low productivity labor. The latter condition was of course the initial rationale for the GPE program.

Consider now a public service employment (PSE) program, by which we mean a program attempting to fill existing public sector job vacancies with disadvantaged workers.[9] PSE workers would be supplying needed public services in the areas of protection, health, sanitation, day care, and so forth. The demand for such workers would be derived from the demand for certain generally publicly supplied services. This is in contrast to the GPE prototype where the primary purpose is to supply jobs, not goods or services.

This crucial distinction between PSE and GPE can be interpreted in terms of the V-U function discussed above. PSE reduces unemployment by filling public sector vacancies. GPE seeks to reduce unemployment without necessarily filling existing vacancies. Therefore, the effect on the V-U function is much more favorable in the PSE case, and hence the Phillips Curve would be much more likely to shift inwards. But the relative advantage of PSE in this respect is at the same time a problem, for the scale of a PSE program will always be limited by the number of existing job vacancies.

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[9] Two examples are the National Civil Service League-Office of Economic Opportunity "Project Pace Maker" and the National Civil Service League-Department of Housing and Urban Development "Model Cities Neighborhood Program."

In addition we may note that PSE as often thought of may not provide a job guarantee, but simply an employment opportunity. As such, it comes very close simply to having disadvantaged workers obtain jobs in the public sector. One remaining difference is that a PSE program may be a catalyst for removing artifical barriers, whether due to unrealistic job requirements or racial discrimination, which had previously worked against disadvantaged workers.

We have noted that the vacancy-filling effect of PSE will tend to shift down the Phillips Curve. By directing PSE in strategic ways, we might get two shifts for the price of one. One current example concerns the provision of medical services. To the extent that PSE can fill vacancies for para-medical personnel and increase the efficiency of delivery of medical care, certain people not in the labor force for health reasons could be enabled to fill job vacancies at the same time that the rate of price inflation in the health area would be lowered directly. Another example of the double-edged potential of PSE programs would be in supplying day care services. These services would allow women currently not participating in the labor force to supply services to fill existing job vacancies, thus again reducing the upward wage pressure from both these vacancies and the day care vacancies.

It is important to note that PSE and GPE could easily be combined so as to gain the advantages of both. In such a combination, some of the participants could be slotted to PSE type tasks which would give them an opportunity to begin a long run career in public service. The others, who may not be suited for public service employment, or who may want to continue searching for a job in the private sector, or for whom there may not be a PSE job available, would be slotted to GPE type tasks.

Finally, we note that either PSE or GPE may have a natural link to another proposed effort to aid the poor--the Nixon Administration's proposed Family Assistance Plan. The present version of FAP mandates that potential recipients (unless the mother of children under six years) must accept suitable work or training if it is available. PSE or even GPE type tasks would seem a natural place for "workfare" to occur, for it would serve the public at large who demand public services, while making more feasible the fulfillment of the FAP work test. Thus desirable reforms in both the welfare and manpower areas could be made to complement one another.

IV. Summary and Conclusions

Having reviewed the important variants of public employment and their expected effect on the inflation-unemployment tradeoff, we are now in a position to summarize. Rather than make specific policy proposals, we will merely highlight the two important themes which should be kept in mind in evaluating public employment programs and comparing them with other alternatives.

One major theme is that it is desirable to fill existing job vacancies via public employment programs whenever possible. Job vacancies exert an upward pressure on money wage and price inflation, as employers try to fill vacancies by bidding up wages. To the extent that the government can fill these vacancies with disadvantaged workers without wages being bid up, it deals with the causes of the Phillips Curve dilemma while dealing with its symptoms.

A second theme is that income or employment guarantees will have harmful effects on the inflation-unemployment dilemma. We have made no attempt to estimate how serious this problem could be--to be frank we must admit that it could conceivably be very serious--and even if the problem is serious we are not necessarily opposed to providing these guarantees. But we must recognize that income guarantees do have inflationary costs and whenever possible we must

seek out ways of providing guarantees which cause the smallest outward shifts in the Phillips Curve.

As a concluding remark, we might make the philosophical disclaimer that we do not necessarily think the poor should do all of the inward shifting of the Phillips Curve. Throughout the paper we have seen that there is often a conflict between Phillips Curve objectives and other objectives such as humanity and equity, which conflict sets up difficult problems of policy choice. We have also mentioned that there are many other ways of shifting the Phillips Curve which, if pursued, might allow more scope for humanity and equity in public employment and the poverty program generally. Although our analysis has concentrated on public employment, we would certainly favor using these other policies as extensively as possible.

Figure I

Vacancy-Unemployment Relation and Rates of Money Wage Increase

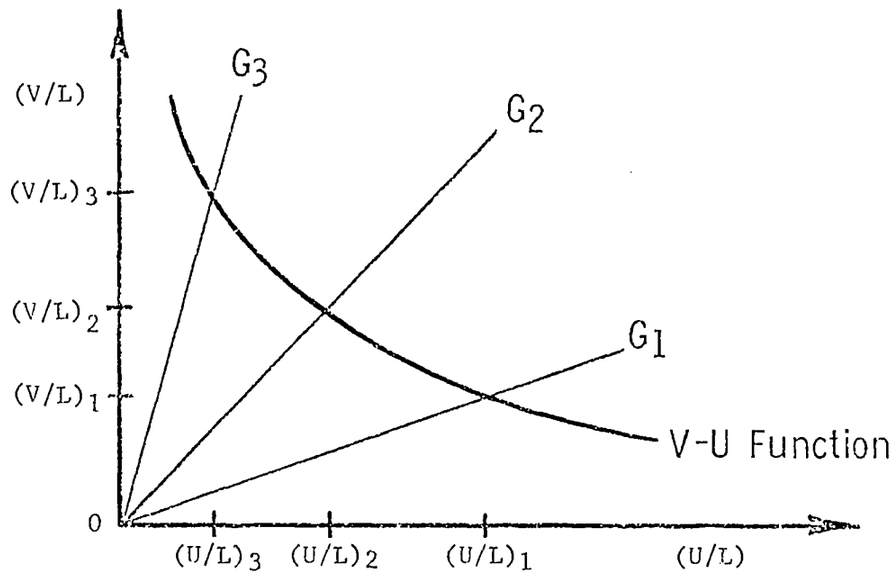
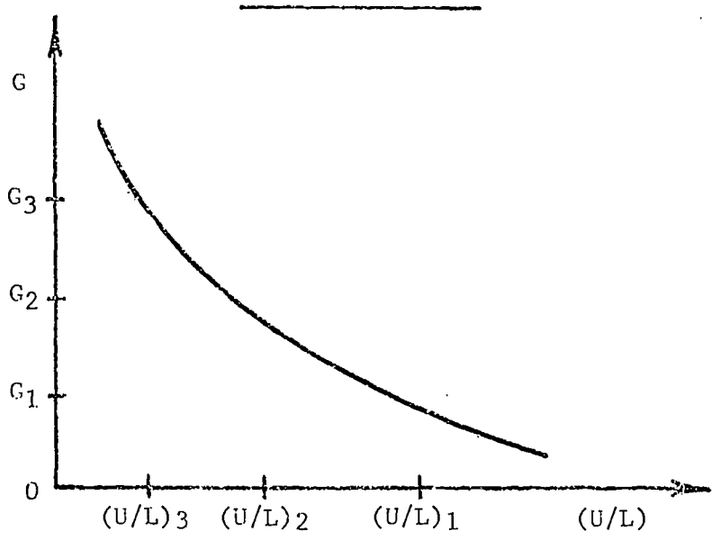


Figure II

Phillips Curve



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