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SELECTIVE EMPLOYMENT SUBSIDIES: CAN OKUN'S LAW BE REPEALED?

John Bishop
Robert Haveman

UNIVERSITY OF WISCONSIN-MADISON

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ABSTRACT

Selective employment subsidy policies (SESPs) are increasingly used both to combat general unemployment and to offset perceived structural rigidities in labor markets. A variety of design options for SESPs have been implemented in a number of industrialized western economies. Economic analysis suggests that SESPs will stimulate labor demand, weaken inflationary pressure, reduce the GNP gap, and shift the composition of employment toward disadvantaged workers. Because of these effects, SESPs will alter macroeconomic relationships; in particular, because of impacts of productivity, hours worked, and capital utilization, the 3.2 multiplier implicit in Okun's law will tend to be reduced. These effects will not occur, however, unless firms change their behavior in response to the subsidy. To estimate this response, a time-series analysis of the U.S. New Jobs Tax Credit is undertaken. It suggests total employment in construction increased by 150,000-670,000 jobs from mid-1977 to mid-1978 because of the subsidy. This was about 25 percent of the observed employment increase in these industries. Similar analysis indicates that the program also led to a reduction in upward price pressure in these industries, reducing consumer costs by $1.9-3.6 billion.

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Concern that structural factors impede efficient labor market performance is evident in both statistical analyses of economic potential and policy proposals for selective employment subsidies. Both official and unofficial estimates of the level and expected growth of potential GNP have recently been revised downward; the primary bases of the revision have been an increase in the definition of the full employment unemployment rate and a reduction in the growth of labor productivity (U.S. Council of Economic Advisors, 1977, pp. 52-56; Perry, 1977). The 3.2 percent change in GNP per percentage point change in the unemployment rate implicit in Okun's Law has been revised downward to the 2.1-3.1 range (Clark, 1977; Perry, 1977). These indications of structural changes in labor markets reinforce statistics on excessively high unemployment rates for youths and blacks and labor force participation rates that are increasing for women and decreasing for men. Policymakers apparently perceive the problem similarly. In both the U.S. and Western Europe, extensive selective employment subsidy policies (SESPs) have been enacted to combat the recent unemployment problem, and to offset increased structural labor market rigidities caused in part by government policies such as the minimum wage (Haveman, 1977).

SESP and changes in potential GNP and Okun's Law are not unrelated phenomena. This paper explores that relationship. In Part 1 we present a brief taxonomy of the primary SESPs which have recently been enacted in western industrialized countries, and which are currently under consideration intthe U.S. In Part 2, the economic rational underlying these measures is discussed. Part 3 explores the relationship of SESP

to the prospective growth of aggregate output, in the context of Okun's Law. If these measures are successful in achieving their objective, the repeal of Okun's Law is implied. However, the success of these measures requires that changes in employment decisions be made in response to SESP. Evidence on the existence and magnitude of these changes in the case of the New Jobs Tax Credit is presented in Part 4.

1. A TAXONOMY OF SELECTIVE EMPLOYMENT SUBSIDY PROGRAMS

The confrontation of a high rate of inflation with high average measured unemployment, driven in part by changes in labor force composition favoring groups with relatively unfavorable unemployment experience and an increased variance in sectoral unemployment rates (Perry, 1970), has brought forth numerous policy measures designed to target employment demands on those sectors with substantial excess supply. Wage (or employment) subsidies and direct public service employment (PSE) are the primary measures undertaken, and these have appeared in various guises. A SESP can be a function of (1) recruitment (additional hires), (2) the existing employment stock, or (3) changes in the employment stock. Each of these subsidies can be targeted on a particular type (types) of labor (say, by age, sex, region, unemployment duration, or education), or they can be general in nature. Moreover, the subsidy can be a flat amount, or it can vary with the level of earnings, the wage rate, or the duration of coverage. It can be paid to the employer or to the worker, either directly or via a tax credit. Similarly, direct PSE (which is, in effect, a 100 percent wage subsidy) can vary by the degree of selectivity, the level of government, and the output produced.

Examples of several of these variants have been recently implemented (Haveman and Christáinsen, forthcoming). The U.S. New Jobs Tax Credit, for example, is a constrained marginal stock subsidy with no targeting. In calendar years 1977 and 1978 firms expanding employment above 102 percent of the previous year's employment level receive a tax credit equal to 50 percent of the first $4,200 of wages paid to each additional employee up to a maximum of 47 employees or $100,000 credit. On the other hand, the 1975 British Temporary Employment Subsidy is a reverse recruitment rather than a stock subsidy, and like the New Jobs Tax Credit it is temporary and nontargeted. This program subsidizes about 30 percent of the wage costs for up to one year of workers who would otherwise be laid off. In 1974, the West German government introduced a temporary targeted recruitment subsidy with a marginal stock constraint. For six months, a wage subsidy of 60 percent was paid to firms in specified regions for employing registered unemployed workers, if firm employment increased from that of a stipulated date prior to passage of the act.

The Netherlands, France, and Sweden have also recently adopted targeted employment subsidies. In the Netherlands, for example, subsidization of 30 percent of the wage costs of long-term unemployed workers hired is provided for six months, with the duration extended to one year if the worker is over 45 years old. The French program is similar except that the target group also includes youths and first-time job seekers. The Swedish program subsidizes about 50 percent of the wage costs of workers threatened with unemployment for six months, provided the firm retains them and places them in some form of training program. For those countries discussed here, the percentage of the labor force on which SESP-type subsidies are paid varies from about .3 percent of the labor force (West Germany) to 3-4 percent in

Sweden. In 1978, the New Jobs Tax Credit (NJTC) will be paid on the employment of nearly 1 percent of the U.S. labor force at a total budget cost of at least $2 billion.

While few reliable evaluations have been made of these SESPs, the numerous extensions of what were to be temporary programs suggest that they have not been viewed as failures in achieving the primary objective--employment increases--set for them. Indeed, in the U.S. the imminent lapse of the NJTC has prompted a number of alternative proposals. The Carter Administration has proposed replacing the New Jobs program with a Targeted Employment Tax Credit that would subsidize firms for 33 percent of the first $6,000 of wages paid to all low-income workers who are 18-24 years old or handicapped for the first year of employment, and for 25 percent for the second $6,000. The Ways and Means Committee revision of that proposal, already passed by the House, would limit the subsidy to newly hired target group members, extend the group to include various categories of welfare recipients, and increase the subsidy rate for the first year of employment and reduce it for the second.

2. THE ECONOMIC RATIONAL FOR SESP

The economic rationale for SESP is straightforward: By reducing the price of labor at the margin, employment can be encouraged and unemployment reduced. SESP lowers the marginal cost function for incremental output, and in competitive markets could be expected to weaken pressures for price increases. Because recruitment or marginal stock subsidies tend to benefit new more than existing enterprises, entry would be encouraged, further weakening upward price pressure. For both of these reasons, SESP will tend to be expansionary. Further, for firms engaged in external trade, SESP

operates as an export subsidy (Layard and Nickell, 1977). Indeed, for a number of Western European nations, this characteristic is viewed as a primary rationale for SESP. A temporary SESP encourages firms to incur labor costs earlier than otherwise. As a result, inventory accumulation or accelerated maintenance and investment spending will tend to increase. Finally, SESP (particularly nontemporary programs) will tend to induce the substitution of targeted labor for nontargeted labor and capital. For example, it may induce adding a second shift rather than increasing overtime work (Bishop and Lerman, 1977; Kesselman, Williamson, and Berndt, 1977).

Given the primacy of the employment creation objective for SESP, it must be evaluated in terms of its net job creation impact, defined as the employment level in the economy with the policy less than without it. Because (1) the output produced by the workers subsidized competes with alternative outputs, (2) financing of the program entails opportunity costs which represent displaced outputs, and (3) many of the subsidized workers would have been working even in the absence of the subsidy, the net job creation impact will clearly be smaller than the gross number of workers subsidized. The ratio of net to gross job creation is an indicator of these displacement effects and can only be estimated in the context of a fully specified general equilibrium model. At a minimum such a model must be able to estimate the degree to which SESP results in both a reduction in the gap between actual and potential GNP and an increase in the latter, and the effect of SESP on the distribution of wages and employment opportunities. We shall deal with each of these.

If SESP is targeted on a resource in excess supply or with a positive and nontrivial supply elasticity, potential GNP--defined as the level of GNP when NAIRU (the unemployment rate at which inflation will not accelerate) is attained--will rise. The proposed SESP targeted on handicapped workers,

transfer program recipients, and low-income youth would seem to meet this test, as large numbers of these workers are not employed because of labor market rigidities (e.g., legal and conventional minimum wages). Hence, substantial employment increases could occur without upward wage pressure and both actual and potential GNP will increase. Econometric work suggests that the labor supply of these target groups is more responsive to changes in the demand for labor than that of other groups (Masters and Garfinkel, 1978). This implies that, even if the labor markets for these workers were free from distortions associated with minimum wages and tax and transfer programs, a wage subsidy on their employment paid for by a tax on other workers would raise **potential** GNP (Bishop, 1977). In any case, with an excess supply of the target group labor and a positive and nontrivial supply elasticity of their services, the GNP gap will be narrowed and potential GNP will be increased. SESP can also increase potential GNP even if the labor force participation rate of each demographic group is fixed. This can be accomplished through the effect of SESP in reducing a wage-weighted NAIRU by concentrating employment increases on sectors with elastic sectoral Phillips curves (Baily and Tobin, 1977).

The benefits of expanding potential GNP in this manner are increased by the fact that the labor supply decisions of targeted groups are distorted by high backward-shifted employer- and employee-paid taxes and even higher marginal transfer benefit reduction rates. Because these distortions imply that the value of the leisure sacrificed by such employment increases is very low, any resulting increase in actual and potential GNP is positively correlated with the change in economic welfare. Moreover, pecuniary externalities for taxpayers are created by the increase in tax revenues and decrease in transfer costs associated with SESP, both of which reduce

the net budgetary cost of the program (Schmid, forthcoming). Non-pecuniary externalities may result as well, as people earn their way off welfare.

A subsidy of one of the major costs of doing business will exercise downward pressure on prices during the transition to a new price level. If expectations about inflation are formed by a rational process that takes account of the fact that the lower inflation rates are temporary, there will be no feedback into wage inflation. Many workers, unions, and firms are not likely to be aware that the slowdown in price inflation is temporary, in which case the once and for all reduction in prices may have a long term impact on wage inflation. On the other hand, because SESP shifts the demand for labor, unions maximizing some combination of wages and employment will face an improved tradeoff and may press for larger wage demands (Burton, 1977). Moreover, to the extent that the expected inflation term in the wage equation involves wage rather than price feedbacks, the impact of SESP on inflation will be less favorable. In this case, the policy will result in some upward wage pressure in industries that employ large numbers of targeted workers, which may cause similar pressure in other firms which attempt to reestablish historic differentials (Baily and Tobin, 1977).

In addition to its effects on actual and potential GNP and prices, SESP will tend to shift the composition of employment and earnings toward low-skill, target group workers. If less inequality in the distribution of the adverse effects of poor economic performance is desired, this is a major benefit of SESP. One consequence of this redistribution is that, even with a constant GNP, the number of employed persons will increase as low-productivity workers are substituted for those with higher skills.

3. THE RELATIONSHIP BETWEEN SESP, GNP, AND UNEMPLOYMENT

Because of these effects of an employment stimulus--employment redistribution policy such as SESP, the macroeconomic relationships between changes in GNP, the GNP gap, and the unemployment rate will be altered. In standard treatments, policy-induced increases in aggregate demand are viewed as closing the gap by increasing actual GNP toward some exogenously determined potential GNP. However, as indicated above, the effect of SESP is to increase simultaneously both actual and potential GNP. The shift in true potential induced by SESP will not be captured in measured potential, however, so as a result a SESP-induced increase in GNP will reduce the measured GNP gap by more than it reduces the true gap.

Similarly, SESP will also alter the relationship between the measured GNP gap and the unemployment rate. A SESP-induced increase in GNP will be associated with a larger increase (decrease) in employment (unemployment) than is typically associated with general aggregate demand-induced changes in GNP. As a result, the rate of productivity increase, as conventionally measured, will fall.

Consider the following accounting relationship, in which GNP, productivity (A), employed capital (K), hours worked per week (H), and labor force participation rate (L), are all measured as percentage rates of change:

$$dGNP = dA + (1 - \kappa_L)\, dK + \kappa_L\, (dH + S_n dL - S_n dU) \qquad (1)$$

where $U = -100 \cdot \log(\text{employment/labor force}) \approx$ the unemployment rate, κ_L is the share of labor, and S_n is the ratio of the skill level of newly employed workers to the economy-wide average. Okun's law, which is a reduced form of (1), states that a 1 percentage point cyclical change in U is associated with a 3.2 percent change in GNP. While a percentage

decrease in U is directly associated in (1) with an increase in GNP equal to $\kappa_L S_n$ (approximately .7 of a percentage point), a change in U is also associated with cyclical changes in other determinants of GNP--namely, L, H, K, and A. The partial derivative of each of these variables with respect to U is negative. It is the sum of these effects that makes up the difference between .7 and 3.2.

Because of the characteristics of SESP, there are at least three reasons why a 1 percentage point change in U induced by, for example, a targeted marginal stock employment subsidy is not likely to increase GNP by 3.2 percentage points. First, SESP-induced reduction in U will shift the composition of employment toward low-skill workers (i.e., those with $S_n < 1$). Indeed, the very purpose of a SESP is to encourage firms to employ and train workers they would otherwise not find it profitable to hire. The inevitable result of such substitution is to reduce measured productivity, at least in the short run. And while the training and work experience received by the employed workers will be manifested in future increases in productivity, S_n and $|dA/dU|$ will fall as these costs are recorded in firm accounts.

Second, SESP measures encourage the hiring of part-time workers (especially if the subsidy is paid on the first $N of earnings, as has been the case in the U.S.) or the substitution of additional workers for increased overtime of existing workers. As a result, the response of H to changes in U will be smaller than otherwise--$|dH/dU|$ will fall.

Third, to the extent that the unskilled labor likely to be employed by SESP measures is not complementary with capital services, as is probable, the utilization of capital will not increase as much as in the case of an equivalent general demand stimulus--$|dK/dU|$ will fall.

Finally, because of the limited knowledge on behavioral responses, the effect of SESP on $|dL/dU|$ is unknown. On the one hand, SESP is designed to open employment opportunities for low-skilled workers, who currently constitute a high proportion of the discouraged worker, non-labor force participant category. On the other hand, in the face of substantial measured unemployment of unskilled labor, a SESP may not generate as large an increase in labor force participation as an equivalent reduction in U stimulated by a general expansion in demand.

Thus, at least during the period of adjustment following the initiation of a well-designed, nontrivial SESP, Okun's Law is likely to be repealed. This repeal is a direct consequence of the fact that the primary objectives of SESP are (1) to increase employment and potential GNP and (2) to distribute more fairly the costs of high unemployment, from whatever source--and not to decrease the gap between actual and potential GNP. The reduction in the Okun multiplier associated with SESP is evidence that the policy is producing the desired effects.

However, these effects do not come at zero cost. SESP is not easy to administer--surely more costly to administer than a general expansion of aggregate demand. SESP of a marginal stock variety tends to give new and fast growing firms and regions an advantage over those with static or contracting employment. In general, SESP will encourage firms to absorb production which had been contracted out, with an adverse effect on suppliers, many of whom may be small enterprises. However, if small suppliers are more aware of the subsidy or possess the flexibility to use it, increased contracting may result. Another concern is that SESP may increase labor turnover, especially if it is temporary or of the recruitment variety. Finally, SESP with narrowly defined target groups (e.g., low-income youth or welfare

recipients) may result in the displacement of equally disadvantaged workers who may have more central positions in family units. The subsidized employment of a disadvantaged youth may have the paradoxical result of disemploying his father.

4. IMPACT OF THE NEW JOBS TAX CREDIT

The economic impacts of SESP which we have described will not materialize if firms fail to change their behavior in response to the subsidy. In some past programs, that response has not been substantial. Most employers who hired workers eligible for the WIN and JOBS programs, for example, failed to apply for the subsidy to which they were entitled (Hammermesh, 1978). The administrative costs required to secure the subsidy apparently weakened the employment incentive for which they were designed. Further, because the subsidy adheres to specific individuals, it may be viewed as a signal that the job applicant is likely to be a low-productivity worker, and result in a reduced probability of employment for target group workers.

The New Jobs Tax Credit has now been in operation for more than a year. While a definitive assessment of its effect on employment and prices is not yet possible, a preliminary evaluation can be made to guide current decisions.

In theory, the NJTC should provide a major stimulus to employment, as firms which typically hire part-time or part-year workers will find that the labor costs of an expansion are cut nearly in half. However, the $100,000 limit on the subsidy available to a single firm suggests that firms with more than 2,000 employees will not receive an employment incentive from NJTC. Hence, the NJTC is likely to have the greatest impact on industries where medium sized firms predominate and part-time, part-year employment is common.

The construction, retailing, and wholesaling industries studied here fit this description.

Non-seasonally-adjusted monthly data on employment and manhours in these industries were regressed on seasonal dummies, trends on the dummies, and three-year distributed lags of input prices and retail sales (or construction put in place). The input prices are the gross employment (wage) costs borne by employers (W); for construction the wholesale price of construction materials (M) and for retailing the wholesale price of consumer finished goods (P); a price index of materials, business services and energy consumed by the distribution sector (Q); a price index of gasoline and electricity prices (G); and a service price of capital which takes into account changes in excise tax, investment tax credits, and depreciation rules (R). With few exceptions, the lag structures were freely estimated with each input price or price ratio being represented by its contemporaneous value, and that of each of the previous four quarters and four half-years.

A strong case can be made (especially in construction) that wages and manhours are simultaneously determined. Exogeneity tests were performed by entering future values of the wage rate into the equation (Sims, 1972). The hypothesis that the coefficients on this variable were zero was rejected strongly in construction and weakly in retailing. Consequently, all models were estimated using two-stage least squares.

The NJTC variable is an average over the past six months of the proportion of firms (weighted by employees) that knew about the credit. It had a value of .057 in June 1977 and rose at an average rate of .0424 per month, reaching .343 in January 1978 and .572 in June 1978.

Table 1 presents our results. All of the NJTC coefficients are positive and significant in Models I and II, where input prices enter as ratios. When input prices enter nominally (Models III and IV), the coefficients are smaller

and insignificant. Across all of the regressions the average NJTC employment stimulus over the 12-month period from mid-1977 to mid-1978 (obtained by multiplying the average value of the NJTC variable over the year by the coefficient) ranges from 150,000 - 670,000. For these industries, total employment growth over the period was 1.3 million. The Model III and IV estimates attribute at least 20-30 percent of the observed employment increase in these industries to NJTC. These results are consistent with the observation that between 1977:II and 1978:II rates of employment growth in both construction and retailing have substantially exceeded the rates of output growth. For example, while the growth rate of real construction output was 4.5 percent over this period, the growth rate of construction employment was 8.2-9.9 percent and that of manhours was 10.4 percent. Even in retailing, where cyclical increases in sales are typically handled without hiring extra workers, employment growth--3.4 percent in household data and 4.0 percent in establishment data--outpaced the 3.0 percent growth of deflated retail sales.

The contrast between construction manhours and employment regressions suggests that the NJTC has, as predicted, caused a reduction in average hours per week. This result is consistent with the hours regressions run for the retail subsectors reported in an earlier paper (Bishop, 1978).

In competitive industries like those studied, reduced marginal costs imply reduced prices. To test this relationship, the monthly rate of change of the retail price was regressed on current and lagged changes in a number of industry cost variables--wage rates, wholesale price of the product, the price of materials, services and energy consumed by the distribution sector, the rental price of capital, and excise taxes--the unemployment rate, seasonal dummies, and trends on the seasonal dummies. Table 2 presents the coefficients on the

first difference of the NJTC variables described above. For nonfood commodities and restaurant meals, the retail trade margin is negatively and significantly related to the timing of NJTC knowledge. Between May 1977 and June 1978 nonfood commodity retail prices rose 4.73 percent while wholesale prices of nonfood, consumer finished goods were rising 6.56 percent. This discrepancy of 1.83 percentage points is quite close to the NJTC effect of 2.2 percent (.038 · .572 · 100) estimated by the preferred model (column 1). The observed decline in the margin is particularly surprising given recent increases in the relative price of imported consumer goods. (Imported products, it should be noted, are included in retail but not wholesale price indexes.)

Among the subsectors, the pattern of coefficients is consistent with a priori expectations. For example, the large negative NJTC coefficients in the restaurant industry equation suggest that in this low-skill intensive sector the 8-12 percent policy-induced reduction in marginal costs resulted in a 1.1 percent decline in output price during the 12-month period. Estimates for moderately wage-intensive retail industries (apparel, furniture) indicate that the 5-7 percent reduction in marginal costs induced here is associated with a smaller .5 percent reduction in prices over the period. On the other hand, the small margin, non-wage-intensive retail food industry has a nonsignificant positive coefficient, reflecting the fact that incremental employment in this sector tends to contribute more to the quality than to the volume of output.

The final rows of the table indicate the reduction of consumer costs due to NJTC-induced compression of the distribution margin implied by the equations. The cost savings of $1.9 - $3.6 billion can be compared with the expected 1977 credit claim of $1.5 - $2.0 billion and the expected 1978 claim of $2.0 - $3.5 billion.

These estimates, it should be noted, measure the impact of NJTC on that sector of the economy in which the largest response is expected. While it is possible that across-industry displacements might result in NJTC's reducing employment and raising prices in industries not studied, this result would be surprising. Further, while limited awareness of the existence of NJTC may have reduced its measured effectiveness, a permanent credit may not have as large an effect as a temporary program. A permanent credit would not induce firms to build up inventories, as NJTC may be doing. If in a permanent marginal NJTC the threshold of eligibility were revised periodically to reflect more recent employment experience, raising current employment would reduce the future expected subsidy, thus inducing a smaller response.

No set of estimates based on the first 12 months of experience with a program can be conclusive. Perhaps the NJTC variable is capturing other exogenous forces, inducing contemporaneous employment increases and price decreases in the sectors studied. And, if that is the case, perhaps improved specifications would reduce the impacts attributed here to NJTC. Longer or shorter lags, adding the price of energy or a once and for all shift in the relationship during 1974, do not, however, cause major reductions in the NJTC coefficients. There may be other factors at work, however. Hence, the conclusion that the NJTC is having major effects on employment and prices must remain tentative until better data on more periods of observation become available. However, it should be emphasized that these estimates are based on a procedure that is more robust with respect to assumptions on the impact of taxation changes than those used to estimate the response of investment spending to taxation changes. The procedure in most investment studies is to imbed a multiplicity of tax provisions in a single rental cost of capital variable; the tests of impact are then based on the magnitude and significance of this variable. Such

analyses are joint tests of the effect of current and expected capital goods prices, financial market conditions, tax provisions, and the validity of the formula, and not of the policy change alone.

In sum, then, the case for SESP is a strong one. Not only the level but also the composition of employment is likely to be improved more by SESP than by an equivalent increase in aggregate demand induced by a general stimulus. Furthermore, the associated price increase is likely to be lower as NAIRU is shifted. If, as is likely, the Okun multiplier will be depressed by SESP, at least temporarily, this is evidence that the policy is inducing the behavior for which it is designed. Using the NJTC as an example, such employer hiring and price responses appear to be in evidence. However, these responses are for a nontargeted program; extrapolation of magnitudes of effect estimated here to a targeted SESP would be inconsistent with the results of prior targeted programs.

Table 1

Impact of the NJTC on Employment in Construction and Distribution

Sample	I		II		III		IV
1952-1978:06	OLS	2SLS	OLS	2SLS	OLS	2SLS	2SLS
Employment							
Wholesale & Retail	.077*	.076*	.099**	.101**	.076	.064	.061
Household Data	(.048)	(.048)	.049	.050	.057	.059	.044
	(.0121)	(.0121)	(.0117)	(.0119)	(.0119)	(.0121)	(.0122)
Retail	.043**	.045**	.044**	.047**	.035*	.030	.031
Establishment Data	.019	.019	.020	.020	.021	.023	.020
	(.0043)	(.0044)	(.0043)	(.0045)	(.0041)	(.0044)	(.0050)
Construction	.168**	.196**			.115	.166	.052
Household Data	.017	.079			.095	.108	.102
	(.0316)	(.0336)			(.0271)	(.0297)	(.0353)
Construction	.187**	.180**			.044	.020	.052
Establishment Data	.050	.053			.068	.108	.102
	(.0169)	(.0175)			(.0153)	(.0155)	(.0173)
Manhours							
Construction	.102	.110			.014	.025	.007
Establishment Data	.071	.078			.100	.108	.091
	(.0323)	(.0340)			(.0291)	(.0302)	(.032)
Average NJTC-Induced Employment Δ in 12-month period preceding 6/78 (in thousands)							
Household Data	641	669		575		565	410
Establishment Data	412	412		203		154	255

The standard error of the coefficient and of the estimate are located beneath the coefficient.

Model I: $\underline{E} = \beta_0 \cdot NJTC \quad \beta_1\underline{X} + \beta_2(\underline{W/P} + \beta_3(\underline{R/P}) + \beta_4(\underline{Q/P})$ for retailing and

$\underline{E} = \beta_0 \cdot NJTC + \beta_1\underline{X} + \beta_2(\underline{W/M}) + \beta_3(\underline{R/M})$ for construction, where

X is the vector of output lags, seasonal dummies and trends.

Model II: $\underline{E} = \beta_0 \cdot NJTC + \beta_1\underline{X} + \beta_2(\underline{W/P}) + \beta_3(\underline{R/P}) + \beta_4(\underline{Q/P}) + \beta_5(\underline{G/P})$.

Model III: $\underline{E} = \beta_0 \cdot NJTC + \beta_1\underline{X} + \beta_2\underline{W} + \beta_3\underline{R} + \beta_4\underline{Q} + \beta_5\underline{P}$ for retailing

and $\underline{E} = \beta_0 \cdot NJTC + \beta_1\underline{X} + \beta_2\underline{W} + \beta_3\underline{R} + \beta_4\underline{M}$ for construction.

Model IV: Same as III except that distributed lags are limited to 1.5 rather than 3 years.

TABLE 2

Impact of the NJTC on the Margin
Between Retail and Wholesale Prices

CPI Component	Coefficient on NJTC Under Alternative Specifications*				
	One-Year Distributed Lag			6-Month Lag	One-Year Lag
	Trends on Seasonals		No Trends	Trends	Trends
	with Q	w/o Q	With Q	With Q	With Q
Food Away From Home	-.036**	-.037**	-.032**	-.033**	-.051**
	.013	.012	.013	.013	.018
	(.0017)	(.0017)	(.0017)	(.0018)	(.0017)
Nonfood Commodities	-.038**	-.038**	-.031*	-.038**	-.049**
	.015	.015	.016	.015	.020
	(.0020)	(.0021)	(.0022)	(.0020)	(.0020)
Food at Home	.051	.041	.051	.051	.011
	.039	.038	.040	.038	.059
	(.0053)	(.0053)	(.0052)	(.0052)	(.0053)
All Commodities	-.018	-.019	-.013	-.018	-.036
	.016	.016	.017	.016	.022
	(.0022)	(.0022)	(.0023)	(.0022)	(.0022)
Reduction in Consumer Costs between 6/77 and 6/78 (in billions)					
All-Commodity Regression	3.4	3.6	2.4	3.4	2.5
Disaggregated Regression	2.8	3.3	1.9	2.8	2.3

*The standard error of the coefficient and the regression are located beneath the coefficient. The models shown in columns 1-4 estimated on monthly data 1953:03 to 1978:06. For the model displayed in column 5, sample period ends 1978:01. Weights for Q are based on the 1967 input-output table. It includes gasoline, electricity, telephones, containers, cellophane packaging, supplies, insurance, auto repair, and legal fees.

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