Chapter 78

QUASI-EXPERIMENTAL EVALUATION OF REGIONAL EMPLOYMENT SUBSIDIES

PETER BOHM
Stockholm University

Although certain government policies might be tested in controlled experiments during a pilot phase, such tests are rarely undertaken. Ideally, a policy could be tried, when feasible and meaningful, on a random subset of areas, firms or consumers exposed to the policy and be compared with the remaining subset over a significant period of time. The results reported here are from a test where the Swedish government introduced a regional employment policy in a limited part of a fairly homogeneous area with high chronic unemployment, hence creating a non-random division into an experiment region and a control region. Once the decision was made to introduce the policy, a quasi-experimental evaluation of the policy was proposed to the government; and, as a result, the government agreed to leave the two regions intact for a period of three years to allow this evaluation to take place and cover a non-trivial period of time – a quite unusual, perhaps unprecedented, step for a government to take.

The policy involved a significant reduction in payroll taxes from January 1984 – lowering labor costs by seven percent – for manufacturing firms in the county of Norrbotten, the northernmost part of a set of similarly depressed areas in Northern Sweden. Hence, a non-random control region was created, consisting of certain municipalities, some of which were adjacent to the experiment region. One implication of this division was that, if employment became significantly higher in the experiment region than in the control region, part of the difference could be attributed to business activity and hence employment having moved a short distance into the experiment region, reducing employment in the control region as much as it increased employment in the experiment region. If so, this would tend to exaggerate the policy effect. Fortunately, from the point of view of policy evaluation, but unfortunately from the point of view of the policy advocates, it turned out that employment in the experiment region did not improve relative to that of the control region, an unexpected result given the significant budgetary costs of this subsidy program.

1. Experimental Design

Careful checks were made to safeguard that the two regions were indeed similar, especially with respect to other, pre-existing forms of policy support. However, since the industrial structure was not identical in the two regions, the development of their unemployment rates might differ over the business cycle. Hence, when the policy evaluation

Handbook of Experimental Economics Results, Volume 1

DOI: 10.1016/S1574-0722(07)00078-9

was designed in early 1984, i.e., prior to access to any post-treatment results, it was deemed important that employment in the two regions should be compared with their relative development in the relevant phase of the most recent business cycle. Thus, it was documented in an evaluation plan, published in mid-1984, that the three-year test period should be compared with that of three pre-specified historical three-year periods of a downturn, an upturn or a stable period in Swedish GNP, which *ex post* (1987) would best fit GNP development over the test period 1984–1986. (The relevant period turned out to be 1979–1981.)

The evaluation design was prespecified in other respects as well, to avoid any unwarranted influence from access to test data. Should a change in the evaluation approach be called for later on, an explicit reason for doing so would be required (but no such change was called for in this particular case). Furthermore, the fact that the study was carried out concurrently with the study period allowed an important continuous check of incoming data errors. Thus, the policy evaluation approach differed in several respects from the traditional approach of determining evaluation design *ex post* concurrently with data evaluation which, if nothing else, typically makes it easier for those policy advocates who prefer not to take the evaluation results seriously.

Employment in the two regions was compared for manufacturing as a whole as well as for areas disaggregated with respect to the degree of unemployment and for major sub-sectors of the manufacturing industry. In addition, given that not even these sub-sectors were truly homogeneous, a 'twin study' was conducted for 44 pairs of similar firms in the two regions. The selection of these firms, made in 1985 when data for 1983 were available, was based on size, age, type of ownership and line of production. The question in this – the most ambitious – attempt to attain homogeneity between the objects of comparison was whether or not the firms in the experiment region would undergo a systematically more favorable development in employment than their twins in the control region.

2. Results

The results summarized in the table below indicate that it was difficult to see any positive effect of the significant support given to the experiment region. Growth in employment in manufacturing from the pre-policy year 1983 to the end-year 1986 was almost the same. When corrected for the historical (1978–1981) asymmetric development in the two regions, the change in employment was actually worse in the experiment region. This pattern essentially remained when data were disaggregated with respect to areas of different degrees of chronic unemployment and with respect to different sub-sectors of the manufacturing industry. The twin study showed similar results in that, for a majority of the pairs of firms, the control region performed better than the experiment region. These results were checked for the influence of chance events, indicating as the major finding of the study that it was highly unlikely that such events could have hidden any significant employment effect of the labor subsidies.

It should be noted that, if subsidy effects on employment appeared only after the 3½ years covered by this study, this lag would have meant that the subsidy cost per unit of new employment had been very high, given the high subsidy costs during the years when no significant effects occurred.

Seven percent employment subsidies introduced in 1984 in an area with chronic unemployment in Northern Sweden revealed no significant employment effects during an observation period of three years.

Employment changes in percent for experiment vs control region 1983–1986, corrected for systematic differences between the regions as revealed by the preceding similar business cycle phase (1978–1981)

	1978–1981	1983–1986
E(xperiment) region, change in employment	0	5.6
C(ontrol) region, change in employment	−2.6	5.3
Difference E − C region, change in employment	2.6	0.3
'Subsidy effects,' difference 83–86 *minus* difference 78–81		−2.3
'Subsidy effects' wrt different degrees of unemployment		
Areas with severe unemployment (1)		0.4
Areas with less severe unemployment (2)		−4.5
'Subsidy effects' in different manufacturing subsectors ranging from/to		
Wood in area 1		−0.4
Paper in area 2		−30.8
'Subsidy effects' on 44 pairs of 'twin firms' where		
E firm had a positive change relative to C firm		18 pairs
" " " " negative " " " " "		26 pairs

Note. Possible explanation of missing effects:

1. Incidence: subsidies spill over to wages? (observed only to a minor extent).
2. Response exhaustion: subsidies introduced on top of a series of pre-existing employment stimuli.

Further reading

Bohm, P., Lind, H. (1993). "Policy evaluation quality: A quasi-experimental study of regional employment subsidies in Sweden". Regional Science and Urban Economics 23, 51–65.