ECONOMIC EFFECTS OF RESIDENCY LAWS ON MUNICIPAL POLICE

Werner Z. Hirsch
University of California, Los Angeles

Anthony M. Rufolo
Portland State University

Discussion paper # 279

January, 1983

Preliminary not to be cited.

ECONOMIC EFFECTS OF RESIDENCY LAWS ON MUNICIPAL POLICE

by

Werner Z. Hirsch and Anthony M. Rufolo*

In many cities the police budget is the single largest expenditure item, one which has been growing rapidly in recent years. Therefore, there is great interest in better understanding the environment within which police and city government negotiate about such issues as wages, fringe benefits, size of the police force, and working conditions. This concern has become even more serious in the revenue (and expenditure) limitation era which began in the mid 1970's.

Many observers argue that compensation and employment of municipal police is strongly affected by the presence of municipal labor laws, particularly prevailing wage laws and residency requirement laws. In an earlier paper, we examined the wage effects of municipal prevailing wage laws [2]. This paper will focus on the effects of residency requirement laws on municipal police departments. First, the current legal status of municipal residency laws will be reviewed. This will be followed by a discussion of various arguments which have been advanced for and against residency laws. These arguments will next be modelled within a demand and supply framework. Since some of the effects identified in this discussion will tend to counteract one another, an empirical analysis of some major effects of residency laws will be undertaken. Finally, some policy implications will be explored.

Legal Aspects of Residency Requirement Laws

Residency requirement laws require that municipal employees reside in the city or county as a condition of employment. Thus, in order to qualify for employment, an individual must reside within the jurisdiction, and if he fails to continue to do so, he may be terminated.[1] Residence is most often defined in terms of domicile. A 1968 Detroit, Michigan ordinance provides an illustration: "Residence shall be construed to be the actual domicile of the individual where he normally eats and sleeps and maintains his normal personal and household effects."[2]

Such residency restrictions are widespread throughout the nation. Only twenty-one of the 50 largest American cities had no residency requirements in 1976.[3] Such restrictions are most commonly imposed by municipal charter, as for example in Cincinnati, Ohio and Newark, New Jersey;[4] by ordinance, as in Detroit, Michigan, Los Angeles and San Jose, California,[5] or by administrative regulation, as in Nashville, Tennessee and Phoenix, Arizona.[6] In a few cases, residency requirements are imposed by state statute, as in Indiana and Massachusetts.[7]

Public employees have long challenged residency laws, beginning with Johnson v. State in 1901.[8] Since that time, the strongest arguments against these laws have centered on the Fourteenth Amendment's Equal Protection Clause, Due Process Clause, and the related right to travel.[9] The proponents of these rights urged that the Court should adopt a "strict scrutiny" standard toward these regulations and require a "compelling state interest" in order to justify the employment restrictions.[10]

However, in McCarthy v. Philadelphia Civil Service Comm.,[11] the Supreme Court rejected these arguments for non-durational[12] residency requirements. The Court initially relied on Detroit Police Officers Association v. City of

Detroit,[13] a case that they had dismissed for want of a substantial federal question, to implicitly hold that the ordinance is not "irrational" within the meaning of the Due Process or Equal Protection clauses.[14] The court thus rejected the use of the "strict scrutiny" standard in viewing the constitutionality of residency requirements. Moreover, the Supreme Court specifically addressed the question as to the fundamental right to travel which could also induce this strict scrutiny standard:

> We have not, however, specifically addressed the contention made by appellant in this case that his constitutionally recognized right to travel interstate as defined in Shapiro v. Thompson, 394 U.S. 618, 89 S.Ct. 1322, 22 L.Ed.2d 600; Dunn v. Blumstein, 405 U.S. 330, 92 S.Ct. 995, 31 L.Ed.2d 274, and Memorial Hospital v. Maricopa County, 415 U.S. 250, 94 S.Ct. 1076, 39 L.Ed.2d 306, is impaired. Each of those cases involved a statutory requirement of residence in the State for at least one year before becoming eligible either to vote, as in Shapiro, or to receive welfare benefits, as in Dunn and Memorial Hospital. Neither in those cases, nor in any others, have we questioned the validity of a condition placed upon municipal employment that a person be a resident at the time of his application. In this case appellant claims a constitutional right to be employed by the city of Philadelphia while he is living elsewhere. There is no support in our cases for such claim.[15]

Thus, today, the Federal constitutionality of residency requirements has been decided in favor of the governmental units which seek to utilize the restrictions. The only question that could remain is whether a state's highest court could hold contrary to the McCarthy rationale in interpreting the state's own constitution. Theoretically, since a state's constitution independently carries many of the same types of individual protection as the Federal Constitution, a state court could possibly interpret its own constitution as requiring greater protection than the Federal Constitution. However, no state has so far done so.

Arguments for and Against Residency Laws

In debates about residency requirements, the following issues are often raised. The first is that such requirements ensure that manpower will be abailable in case of emergencies. This argument may have particular validity for policemen (and firemen), though it is less convincing when applied to other types of municipal employees. An argument closely related to this is that requiring an employee, particularly a policeman, to reside within a city promotes a better "feel" for problems within the community; also he will take more interest in the results of his work. As an illustration, the Philadelphia Inquirer [3] argued that the quality of education would suffer as well as the city's tax base if teachers were released from that city's residency requirement. While a teacher working in the inner city but living in the suburbs may be less effective than if he lived in the city, it must be recognized that middle-income municipal employees are not likely to live in the inner city, nor are they likely to spend their off-duty hours there.

Another reason also often advanced is the "public coffer" rationale. Here it is argued that the municipal workers who live within city boundaries will enhance city revenues both through the taxes they pay and their participation in the local economy. In other words, they add to the city's tax base. However, it is quite possible that many city dwellers do much of their business in the suburbs, while many suburbanites may perform most of their transactions in the city. The two economies do not exist in isolation from each other. It should also be noted that nonresidents pay taxes to city governments in the form of sales and commuter taxes. Further, even if there are tax benefits, there may be an efficiency loss due to passing up better qualified nonresidents in favor of local workers. The "public coffer" rationale does not just encompass funds flowing into a city but also funds

flowing out due to services provided to the unemployed. Thus, part of the "public coffer" rationale concerns the provision of jobs for low-skilled city residents. A frequently cited reason why central cities should give preference to their residents is the relatively high rate of unemployment among such residents as compared to suburbanites. Most cities provide municipal jobs based on competitive examinations. Thus, the workers getting municipal jobs are likely to be those who have the best alternative job possibilities. If a residency requirement reduced the competition for jobs among city residents, then some of the jobs will go to city residents who had few alternative job possibilities and were likely to have been unemployed. Where cities are responsible for social services, thus, this step reduces the drain on the city's funds. And in all cases consumer spending is increased.

It is, of course, obvious that the less competitive job seeker is also likely to be less skilled and to have other shortcomings which restrict his job possibilities. This could work to the detriment of a city hiring such workers, depending on whether the requirement's quality or skill characteristics are really productive for the job in question. If the higher skill levels were merely used as a screening device, the lower skilled workers may be able to perform quite adequately; and municipal governments are more likely than private firms to be paying above market wages which lead to an excessively large number of job applicants. However, the possibility that output will be lowered should not be ignored.

Another possible argument against residency laws is that they restrict the liberty of the municipal workers. This restriction will lead potential workers to quit the municipal labor pool and look elsewhere for jobs. To attract the earlier quality and quantity of workers, the city will have to pay more. The higher wages would be necessary either in order to compensate

workers for overcoming their disinclination to abide by the residency restriction, which may be a burden even for workers currently living in the municipality who want to maintain the option to move, or in order to attract a larger percentage of the resident labor pool.

Another argument would favor a residency requirement from the viewpoint of a city government, but would not favor a residency requirement from the viewpoint of a municipal union. This is that a residency requirement affects the relative bargaining power of the two parties. Bargaining power reduction results from the reluctance of municipal workers to strike against their own city, since it would adversely affect their families, neighbors, and friends. Clearly, if all workers' families were affected by a strike or slowdown, e.g., blue flue, they are less likely to engage in such practices than if only a few of the families would suffer. Further, if the city does hire relatively less qualified workers, they are also likely to be less adept at bargaining and to have lower wage expectations than better qualified applicants. However, this tendency is mitigated by the fact that when all city employees live inside the jurisdiction, their political clout can increase. This offsetting argument would lead to higher wage settlements. However, it is unclear whether the political power of a police union is tied to the residency of its members.

Modeling the Arguments

We will incorporate the preceding arguments into a standard supply-demand model for labor. The dependent variables will be total compensation (wages plus fringes) paid per worker in the supply function and the number of municipal police in the demand function. The demand for municipal workers is a derived demand, dependent upon the demand for municipal services and the

production function for producing the output. We expect the demand for output to be fairly inelastic and the ability to alter the input mix to be limited in providing police services.

The arguments presented in the preceding section lead to conflicting effects on both the demand and supply for municipal police. First, there could be an increase in worker productivity. Both the arguments concerning manpower availability during emergencies and the "feel" for a city's problems fall into the category. An increase in worker productivity raises output per worker and lowers the cost per unit of output. If the quantity of output demanded were to increase sufficiently because of this lower cost, or if labor is highly substitutable for other inputs, then the demand for labor might increase. However, neither of these is likely, given the inelastic demand and relatively fixed input mix characteristic of public services. Hence, if productivity dominates, there should be a decrease in the demand for labor. Alternatively, demand might also be affected by the substitution of low-skill city residents for other workers. In this case, there are really two benefits from hiring workers: the additional direct output, plus the reduced demand on other city services. Thus, the demand for workers is expected to increase.

There is an obvious restrictive effect of a residency requirement on labor supply. In practice, it eliminates a large part of the potential labor pool because they do not reside in the municipality and would not choose to relocate for a given wage. Further, it eliminates many residents who prefer to maintain the option of moving. Hence, it should cause a leftward (upward) shift of the supply curve. However, the arguments concerning bargaining power imply a rightward (downward) shift in the supply curve. A decline in bargaining power means a reduced wage, and this, in the relevant range, is equivalent to an increase in the supply of workers.

For simplicity we shall refer to the above effects as the productivity and substitution effects on the demand curve and the restriction and bargaining effects on the supply curve. If the productivity effect dominates the substitution effect, we expect to see a reduction in demand, and vice versa if the substitution effect dominates. Similarly, if the restriction effect dominates the bargaining effect, we expect a reduction in supply due to a residency requirement while supply should increase if the bargaining effect dominates.

Determinants of a Residency Requirement

Previous research suggests that the existence of municipal labor laws can at least in part be explained by economic factors (for example, see Hirsch and Rufolo [2]). If the left-hand variables do affect the existence of a residency law, then the estimated effects of a residency law will be biased and the significance tests will be unreliable.

To generate a model of the determinants of a residency requirement it is necessary to consider the factors which favor the passage of such a law and those which work against it. The city administration usually favors the law with workers providing the opposition.

It is hypothesized that workers' opposition to residency laws will be greater in more densely populated areas where there are a variety of places to live. This can be proxied in a number of ways, but we chose the county population as conceptually the best available measure. City population is not appropriate since a number of small cities are located in large SMSA's. However, SMSA population was also not useable since many of the cities are not parts of an SMSA. Hence, we model the workers efforts against passage of a residency requirement as a function of county population.

The administration's desire for a residency requirement can be affected by a variety of forces. The most important ones appear to be financing and the level of compensation paid. A city with high compensation is less likely to have difficulty filling positions and retaining a work force if such a law is passed; hence, an administrator facing such a situation is more likely to push for such a law. A city which raises most of its own revenue is likely to be more sensitive to the impact of such a law. If it is perceived to lower wages and provide jobs for unemployed residents, a higher percentage of locally raised revenue would increase the probability that a residency requirement would be passed. Alternatively, if it is perceived as being an inefficient restriction which will lead to higher wages, it will reduce the probability. Hence, we cannot predict its sign in advance. Also, it is expected that in an area where many people are looking for jobs they would place a lot of pressure on administrators to maintain a residency requirement. This factor should be measured ideally through some form of local unemployment rate; but such data were not generally available. Instead, we argue that a large percentage of city residents below the poverty line would increase the incentive for a residency requirement and that higher median education implies a more mobile population with lower overall unemployment which would reduce the incentive for such a law. Hence, the efforts by administrators will be a function of total compensation, percentage of revenue raised locally, the percentage of residents below the poverty line, and the median education.

Thus, the effort by workers is E_W(CNTYPOP) and the effort of administrators is E_A(LGTCOMP,PEROWREV,PERPOVTY,MEDEDUC). The residency requirement is passed if $E_A > E_W$ and not passed if $E_A < E_W$. The binary LOGIT model for such a formulation is

$$\text{LOG}[\frac{P}{1-P}] = \beta_o + \beta_1 \text{LGTCOMP} + \beta_2 \text{PEROWREV} + \beta_3 \text{PERPOVTY} + \beta_4 \text{MEDEDUC} + \beta_5 \text{CNTYPOP}^{16}$$

with β_1 and β_3 expected to be positive, β_4 and β_5 expected to be negative, and β_o and β_2 indeterminate.

The results of the regression are reported in Table 1. 77.9% of the predicted values are correct. The signs are as expected. The empirical estimates indicate that the percentage of revenue raised locally lowers the probability of having a residency law, thus indicating that efficiency concerns may be quite important.

The coefficient of LGTCOMP positive and significant at the 15% level using a Chi-Square test. While the significance level is fairly low, we hold that it is high enough to support the suspicion that the level of compensation affects the probability of the existence of a residency law, thus preventing us from treating the existence or non-existence of such a law as exogenous in estimating its effect on compensation.

Empirical Results

The number of cities used in the analysis was circumscribed by a lack of data about policy compensation and policy residency requirements. Information on police compensation was obtained from the "1976-77 Survey of U.S. Municipal Employee Benefits" [5], sponsored by the International City Management Association. From this source the variable for policy compensation was formed by summing the annual municipal costs for gross payroll, pension and retirement programs, death benefit coverage, medical coverage, unemployment compensation, and social security for the police department, and dividing by the total number of sworn police personnel. Because many cities did not complete the fringe benefit section of the survey, we could only form police

compensation data for about 300 cities.

Information on police residency laws was obtained from the "Survey of Salaries and Working Conditions of the Police Departments in the United States" [4] published by the Fraternal Order of Police. This survey did not have coverage on all U.S. cities, and many of those cities covered did not supply information concerning the presence or absence of a residency requirement. After matching the cities for which we had information on police compensation with those cities for which we had residency requirement data, our data base was reduced to about eighty cities. The data for our other variables cam mostly from various printed sources (see Table 5). Incomplete data from these sources accounted for our dropping cities from our data base, leaving us with 71 cities, all of relatively small or medium size.

The model will be estimated by setting up a set of simultaneous equations which include a right-hand dummy variable for the existence of a residency requirement. This allows us to separate the effect of a residency requirement upon the demand function from the effect upon the supply function.

The results of a supply-demand simultaneous equation regression are shown in Table 2. The residency requirement law was treated as an exogenous variable (RESREQP). In the supply function, the coefficient relating the log of compensation to the residency requirement was negative; but the coefficient was not significant at the 10% level using the standard two-tailed test. Thus, the test of which effect dominates was inconclusive, but it suggested that the bargaining effect dominated. In the demand function the coefficient of RESREQP was positive, suggesting that the substitution effect dominated, but again the coefficient was not statistically significant.

Since the LOGIT estimate of the factors likely to influence the existence of residency requirement laws found that higher total compensation

would raise the probability, then the coefficient on the dummy variable in the supply equation is biased upward. This simultaneity problem will be addressed using an instrumental estimate for the probability of having a residency requirement.[17] Such an estimate of the probability will be formed using a logit regression. (The estimate of the probability from this regression is referred to as _P_.)

The supply-demand simultaneous equation regression was run again with the variable _P_ used in place of the variable RESREQP. The results are shown in Table 3. The coefficient of _P_ in the supply function, relating the log of compensation to the probability of the residency requirement is negative, and meets the 1% significance level test (Two-tailed Test). This statistical result clearly favors acceptance of the hypothesis that in the supply function the bargaining effect dominates over the restriction effect. The coefficient of _P_ in the demand function is positive and significant at the 6% level (two-tailed test), which indicates that the substitution effect dominates over the productivity effect. Additional information that supports the belief that a simultaneity problem exists in our earlier regression is evidenced by a comparison of the coefficient of RESREQP and _P_. It was expected that a simultaneity problem would have biased the coefficients for RESREQP upwards in the supply equation and downwards in the demand equation. When _P_ is used the coefficient of the residency requirement has a lower value in the supply equation and a higher value in the demand equation, which should have resulted if RESREQP were biased and _P_ were not.

Information on the strength of the overall supply effect can be gained by examining the size of the coefficient. It indicates that a residency requirement is expected to lead to about a 16% reduction in compensation of municipal police if the demand remained fixed. The coefficient in the demand

equation indicates that the demand should not remain fixed, but should increase by about 18%.

Finally, we estimated reduced form equations using the dummy variable and the estimated probability, respectively, as independent variables. The results are presented in Tables 4 and 5 and are highly consistent with the structural model. In particular, the net effect on employment is a little larger and the effect on wages is about the same as in the structural equations. The wage decrease is offset somewhat by the demand increase and the employment increase is augmented by the supply increase. Further, the results are not significant when the dummy variable is used but are significant when the estimated probability is used in the regressions.

Conclusions

Both our results and previous studies that have looked at the impact of municipal laws on wages and employment have concluded that such laws can have a large impact on wages paid and our study indicates there is also a large impact on employment. Nevertheless, these impacts cannot be viewed in isolation, for the existence of the laws has proven to be sensitive to economic factors. This interrelationship may be a more important finding than the specific parameters estimated regarding the effects of various laws. Economists have long worried about simultaneity in estimating economic variables. While this has bedeviled us in studying the urban economy, we are now finding that the situation is even more complex. Even the institutional constrains which were always treated as exogenous appear to be affected by the economic environment.

Further, these results provide additional evidence that municipal police departments cannot be treated as competitive firms in looking at the wage

setting process. While competitive forces clearly impact on the participants, non-market factors are also very important. Moreover, these competitive forces are likely to influence the institutional environment, further distorting relationships which we can observe. In particular, the legal environment can have a very large impact on wages, but this impact may not show up in statistical analysis because the economic environment also has an impact on which laws exist in a given municipality.

Our econometric analysis suggests that in the presence of a residency law, municipal police demand functions in medium sized American communities in the late 1970's shifted to the right. Also municipal police supply functions shifted to the right, which suggests that the bargaining effect dominated the restriction effect. When combining the demand and supply effect, there appears to be, associated with residency laws, an increase in the employment of municipal police hand in hand with a decrease in total wages.

Given these results and those from earlier work, there is a plausible pattern emerging regarding the wage setting procedure in municipal labor markets. The specific wage contract appears to be influenced strongly by the bargaining factors relevant to employer-employee negotiations. This may be much more relevant for this market than for most others because of the relative insulation of the local government from profit considerations. Yet the market is not totally insultated from competitive forces. In particular, relatively high or low wages affect the type and number of applicants for a government job. High wages allow the government to be very selective about hiring, while low wages offer the government little choice. Selective hiring may raise productivity (though this is not necessarily the case), but the increased productivity may not be worth the higher wage. The upgrading of worker quality also brings additional presures on wages in negotiating

sessions. One response to these pressures is a change in the legal environment which then alters the bargaining situation.

Much additional research will be required to complete the picture and confirm or reject these conjectures. In the meantime we can say that residency requirements do appear to have an important impact on municipal police employment and wages. The best empirical estimate indicate that such a law can lead to a reduction in compensation of around 15 percent with a comparable percentage increase in employment. The next step would be to determine the impact of these changes on police output; but until that is done, it seems fairly clear why workers oppose residency requirements and cities prefer them. On the surface at least, the city gets a twenty percent increase in employment with no increase in expenditures.

TABLE 1

Logit Analysis of Factors Affecting the Existence of a Residency Law

LOGIT Regression

Dependent Variable = RESREQP

Independent Variables	BETA	CHI-SQUARE
Constant	-4.67	.09
PERPOVTY	0.047	1.16
PEROWREV	-10.21	12.58
CNTYPOP	-.00039	5.14
MEDEDUC	-0.95	2.38
LGTCOMP	2.37	2.34

Classification Table

		Predicted		
		Negative	Positive	Total
True	Negative	38	7	45
	Positive	12	29	41
	Total	50	36	86

Sensitivity: 70.7% Specificity: 84.4% Correct: 77.9% False Positive Rate: 19.4% False Negative Rate: 24.0% Predictive Accuracy Coefficient: 0.315

*Significant at 1% level, Chi-Square test
**Significant at 5% level, Chi-Square test
#Significant at 15% level, Chi-Square test

TABLE 2

Residency Requirement Effects on Wages and Employment

Residency Requirement as Dummy Variable

Independent Variables	Beta	T-ratio
	Supply (Dependent Variable is LGTCOMP)	
CONSTANT	9.375	70.50
LGNPAY	0.049	1.79
GOVFORM	-0.163	-3.39
DUESRGT	0.062	2.01
PERPOVTY	-0.016	-5.14
TPOLITAX	0.048	2.43
STPERPOL	0.0054	5.37
RESREQP	-0.059	-1.40
	Demand (Dependent Variable is LGNPAY)	
CONSTANT	5.22	3.36
LGTCOMP	-0.457	-2.77
OWNHOME	-0.0084	-2.90
LGPOP	1.044	24.66
CITYNW	0.0052	1.58
NONISOL	0.128	1.85
RESREQP	0.074	1.41

TABLE 3

Residency Requirement Effects on Wages and Employment

Residency Requirement as Estimated Probability

Independent Variables	Beta	T-ratio
	Supply (Dependent Variable is LGTCOMP)	
CONSTANT	9.388	72.41
LGNPAY	0.054	2.02
GOVFORM	-0.166	-3.53
DUESRGT	0.065	2.15
PERPOVTY	-0.014	-4.59
TPOLITAX	0.048	2.57
STPERPOL	0.0055	5.68
_P_	-0.155	-2.24
	Demand (Dependent Variable is LGNPAY)	
CONSTANT	4.975	3.21
LGTCOMP	-0.430	-2.60
OWNHOME	-0.0088	-3.05
LGPOP	1.029	23.60
CITYNW	0.0057	1.74
NONISOL	0.138	2.05
_P_	0.176	1.91

TABLE 4

Reduced Form Regressions Using RESREQP as the Residency Law Variable

Dependent Variable -- LGTCOMP

Independent Variables	Beta	T-ratio
CONSTANT	9.278	46.21
LGPOP	0.064	2.18
GOVFORM	-0.152	-3.45
OWNHOME	0.001	0.57
DUESRGT	0.067	2.33
CITYNW	-0.004	-1.59
PERPOVTY	-0.011	-3.68
IPOLITAX	0.048	2.62
STPERPOL	0.004	3.19
NONISOL	0.119	2.75
RESREQP	-0.054	-1.36

Dependent Variable -- LGNPAY

Independent Variables	Beta	T-ratio
CONSTANT	0.747	2.70
LGPOP	1.025	24.68
GOVFORM	0.068	1.04
OWNHOME	-0.006	-2.14
DUESRGT	0.010	0.24
CITYNW	0.007	2.53
PERPOVTY	0.007	1.53
TPOLITAX	-0.025	-1.32
STPERPOL	-0.002	-1.36
NONISOL	0.079	1.30
RESREQP	0.078	1.44

TABLE 5

Reduced Form Regressions Using P as the Residency Law Variable

Independent Variables	Dependent Variable — LGTCOMP Beta	T-ratio
CONSTANT	9.234	46.86
LGPOP	0.076	2.62
GOVFORM	-0.153	-3.57
OWNSHOME	0.002	0.83
DUESRGT	0.070	2.50
CITYNW	-0.004	-1.76
PERPOVTY	-0.010	-3.13
TPOLITAX	0.049	2.82
STPERPOL	0.004	3.40
NONISOL	.104	2.45
P	-0.152	-2.28

Independent Variables	Dependent Variable — LGNPAY BETA	T-ratio
CONSTANT	0.848	3.05
LGPOP	1.010	23.92
GOVFORM	0.063	0.98
OWNHOME	-0.007	-2.55
DUESRGT	0.002	0.05
CITYNW	0.008	2.63
PERPOVTY	0.005	1.02
TPOLITAX	-0.029	-1.57
STPERPOL	-0.002	-1.45
NONISOL	0.102	1.67
P	0.220	2.25

TABLE 6

Variables

1. CITYNW — The percentage of a city's population whose race is non-white.

Source; Table 16
"Summary of General Characteristics"
1970 Census of Population
Vol. 1. Characteristics of the Population
U.S. Bureau of the Census
(Washington, D.C.: U.S. Government Printing Office, 1973)

2. CNTYPOP — The population of the county in which the municipality is located.

Source; Table 9
"Population and Land Areas of Counties"
1970 Census of Population
Vol. 1. Characteristics of the Population
U.S. Bureau of the Census
(Washington, D.C.: U.S. Government Printing Office, 1973)

3. DUESRGT — A dummy variable used to indicate Union security in a state. The data are per state and assume the following values:

2 if dues deductions are manditory,
1 if dues deductions are permitted,
0 if the state has no statutory law on dues deduction rights.

Source; Summary of Public Sector Labor Relations Policies.
U.S. Department of Labor,
Labor - Management Services Administration,
Washington, D.C., 1979

4. GOVFORM — A dummy variable used to indicate the strength of a city's government. The data are per city and assume the following values:

1 if the city has a mayor form of government,
0 if the city has any other form of government.

Source; 1976-1977 Survey of U.S. Municipality Employee Benefits
Labor Management Relations Service,
Washington, D.C. (Data Tape)

5. LGNPAY — The log of the number of permanent, full-time, paid, sworn police personnel hired by the city.

Source; 1976-1977 Survey of U.S. Employee Benefits
Labor-Management Relations Service & International City Management Association
Washington, D.C.
(Data Tape)

6. LGPOP — The log of the city's population (in thousands) as of 1975.

Source; "Municipal Profiles: Profiles of Individual Cities"
The Municipal Year Book, 1980
International City Management Association
Washington, D.C., 1980

7. LGTCOMP — The log of TSCOMP.

8. MEDEDUC — Median school years completed, measured in years.

Source; Table 83
"Educational Characteristics for Areas and Places"
Table 103
"Educational and Family Characteristics for Places of 10,000 to 50,000"
1970 Census of Population
Vol. 1. Characteristics of the Population
U.S. Bureau of the Census
(Washington, D.C.: U.S. Government Printing Office, 1973)

9. NONISOL — A dummy variable used to indicate that city is fairly isolated from surrounding urban areas. The data are per city and assume the following values:

1 if the city is within twenty five miles of a city whose population is over 5,000.
0 if the city is beyond twenty five miles from any city whose population is over 5,000.

Source; The National Atlus of the U.S.

10. OWNHOME

The percentage of a city's population that owned their own home in 1976.

Source; "Municipal Profiles: Profiles of Individual Cities," The Municipal Year Book, 1977 International City Management Association, Washington, D.C., 1977 PP, 7-42.

11. PEROWREV

The percentage of the municipality's total general revenue that comes from local sources.

Source; Table 22
"Finances of Individual Municipal and Township Governments"
Vol. 4, 1977 Census of Governments
(Washington, D.C.: U.S. Government Printing Office, 1977)

12. PERPOVTY

The percentage of families in a city whose income was below the poverty level for the year 1976.

Source; "Municipal Profiles: Profiles of Individual Cities," The Municipal Year Book, 1977
International City Management Association, Washington, .C., 1977, pp. 7-42

13. RESREQP

A 0-1 variable. The value is one if a city reports a residency requirement law for its police force. The value is zero if a city reports it does not have a residency requirement law for its police force. Data was used from the 1981 survey if the city did not respond in the 1979 survey but did respond in the 1981 survey.

Source; A Survey of 1979 Salaries and Working Conditions of the Police Departments in the United States & A Survey of 1981 Salaries and Working Conditions of the Police Departments in the United States
Fraternal Order of Police
Baltimore, MD.

14. STPERPOL

The percentage of full-time police protection employees who belong to an employee organization.

Source; Table 3
Labor-Management Relations in State and Local Governments, 1978
U.S. Department of Commerce
Bureau of the Census
Washington, D.C., 1978

15. TPOLITAX — The 1977 effective rate of state personal income tax for a married couple with two dependents earning TSCOMP.

Source; Table 50
Significant Features of Fiscal Federalism
Advisory Commission on Intergovernmental Relations
Washington, D.C., 1979

16. TSCOMP — The summation of the annual municipal costs for gross payroll, pension and retirement program, death benefit coverage, medical coverage, unemployment compensation and social security of the police department, divided by the total number of sworn police personnel.

Source; 1976-1977 Survey of U.S. Employee Benefits
Labor-Management Relations Service & International City Management Association
Washington, D.C.
(Data Tape)

NOTES

*The authors would like to thank Glen Elder who served as research assistant and the Institute of Industrial Relations at University of California, Los Angeles for financial support.

[1]See generally, Note, Municipal Employee Residency Requirements and Equal Protection, 84 Yale Law Journal, 1684.

[2]Detroit, Michigan Ordinances No. 327-G, Section 2-1-1-2 (June 6, 1968).

[3]Municipal Employee Residency Requirements and Equal Protection, supra note 1 at 1686.

[4]Cincinnati, Ohio, Code art. XVII, 1 (1967) and Newark, N.J. Code 2.14.1 (1959).

[5]Detroit, Michigan Ordinance No. 327-G, June 6, 1968; Los Angeles, California Ordinance No. 143,025, January 20, 1972; and San Jose California Ordinance No. 16043, January 17, 1972.

[6]Nashville, Tennessee, Civ. Serv. Comm. Rules, Ch. 5, 1, July 1, 1972; and Phoenix, Arizona, Admin. Reg. 281, 1-4, Spetember 28, 1972.

[7]Ind. Code 19-2-1 (1971) and Mass. Gen. Laws Ann., ch. 48, 58(E) (1972).

[8]132 Ala. 43 (1901).

[9]See generally, Municipal Employee Residency Requirements and Equal Protection, supra note 1.

[10]For a fuller explanation of these concepts, see Note, Durational Residence Requirements for Public Employment. 67 Cal. Law Rev. 386, 390-1.

[11]96 S.C. 1154 (1976).

[12]Non-durational residency requirements are those that require domicile at a particular time; i.e., at the time of employment. Durational residency

requirements require domicile for a particular period before one can become eligible for employment.

[13]405 U.S. 950 (1972).

[14]96 S.C. 1154, 1154 (1976).

[15]Id. at 1155.

[16]Note that PEROWREV is used in the logit but not the regression analysis. This procedure is followed since the logit analysis requires a variable that is not included in the demand or supply functions with the condition that this variable has little, if any effect on either total compensation or employment. We tested for this condition by running both the regressions in Table 2 without RESREQP but with PEROWREV as dependent variables and without either REGREQP or PEROWREV. Virtually identical results were obtained whether PEROWREV was included or excluded.

[17]Heckman [1] sets out the conditions. Although he does not treat the use of the instrument in a set of simultaneous equations, there do not appear to be any reasons why it cannot be so used. Further, the reduced form estimates follow Heckman.

REFERENCES

[1] J. L. Heckman, "Dummy Endogenous Variables in a Simultaneous Equation System," Econometrica 46, 913-959 (1978).

[2] W. Z. Hirsch and A. M. Rufolo, "Effects of Prevailing Wage Laws on Municipal Government Wages," Journal of Urban Economics (forthcoming).

[3] Philadelphia Inquirer.

[4] "Survey of Salaries and Working Conditions of the Police Departments in the United States," Fraternal Order of Police.

[5] "Survey of U.S. Municipal Employee Benefits," ICMA.