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ABSTRACT

This paper extends research by Richard Murnane by analyzing the effects of specific teacher contract provisions on New York teacher turnover from 1972-76 and in the process assesses the validity of two theories explaining teacher mobility. The combination of the theory of human capital with the theory of internal labor markets analyzes teacher mobility in terms of the voluntary movements characteristic of the teacher shortage of the 1960's; however, a theory of institutional work rules is espoused as more useful in explaining teacher behavior during the teacher surplus of the 1970's, when job mobility tended to be involuntary. Data from a sample of 19,000 teachers from State Department of Education personnel files are subjected to logit analysis to estimate the effect of selected variables on the probability of teacher transfers and quits. Variables include a contract provision limiting class size and a provision requiring that seniority be followed in staff reductions, as well as teachers' experience levels, racial composition of teachers and of students, district enrollments, and teachers' sex. Generally, class size provisions are found to increase the probability of transfers and reduce the probability of quits, but the seniority provision affects quit rates only in districts with rapidly declining enrollment. Results are concluded to uphold the explanatory power of both theories considered. (MJL)

Determinants of Teacher Turnover during the 1970s: The Case of New York State Public School Teachers

FINAL REPORT - Paper III

by

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Determinants of Teacher Turnover During the 1970s:

The Case of New York State Public School Teachers

I. Introduction

The teaching profession has witnessed a dramatic change during the last two decades from an acute shortage of teachers in the 60s to a large surplus in the 70s. Accompanying the transition in the educational labor market has been a change in the internal dynamics of the educational personnel system. During the 60s, teaching positions were expanding rapidly, offering many opportunities to move within a district. Teachers could improve their job position by moving to schools or districts which better matched their preferences. As openings for positions dwindled, however, teacher mobility became characterized more by involuntary than voluntary movements. Administrators, faced with declining enrollments and budget reductions, were forced to layoff teachers which caused a reshuffling of the teaching staff within districts.

As teacher mobility switches from a voluntary to an involuntary decision, the theory established to explain teacher turnover must also change. When teacher mobility was characterized by voluntary movements, turnover patterns were analyzed primarily within a framework created by merging the theory of human capital with the theory of internal labor markets. According to the synthesis, individuals possess certain knowledge and skills that are more germane to one occupation than another. This specific knowledge constrains teachers from being equally qualified for all jobs, and consequently partitions the educational labor market into relatively autonomous submarkets--or internal labor markets. This theory, however, implicitly assumes that mobility decisions are voluntary and are carried out to better the position of the individual teacher. It becomes

apparent that the human capital theory, so popular in explaining turnover in the 60s, may not hold for the 70s. Thus, the theory of internal labor markets must be augmented by a theory of the effect of administrative rules on teacher mobility.

In virtually all districts in which involuntary transfers and layoffs of existing staff take place, decisions concerning which teachers will be transferred or laid off are heavily influenced by a set of rules. Rules are established either by state laws or through locally negotiated contracts. In New York State, for example, almost all public school districts are covered by collective bargaining agreements. Some of these agreements include provisions which directly effect personnel decisions. Roughly 17 percent of the teachers in the state, excluding teachers employed in New York City, are covered by a provision which requires reduction in force to be determined by seniority. Furthermore, many contracts (62 percent in 1972) contain provisions which limit class size. Both of these provisions, under certain enrollment and budget conditions, may affect employment decisions of school districts.

The need to take into account institutional rules when explaining teacher mobility has not gone unnoticed. Murnane (1981) implicitly considered the effect of institutional rules on teacher mobility by observing a single school district over a period of time in which enrollments went from increasing to decreasing. By watching the behavior of teacher mobility throughout this transition period, Murnane was able to discern a distinct change in the determinants of transfers and terminations. He concludes that "no longer do the patterns of mobility reflect primarily teacher preferences. Increasingly, they reflect the pattern of declining enrollments and the operation of rules that govern the disposition of surplus teachers" (Murnane 1981, p. 4). He uses results across enrollment trends to support the

hypothesis that institutional rules are important determinants of teacher mobility.

By examining only one district, however, Murnane was not able to determine the effect of the structure of the set of rules on teacher mobility. He inferred from enrollment trends and observed teacher behavior that certain rules, such as reduction in force by seniority, were probably followed, but he did not specify the rules explicitly. This paper, therefore, can be viewed as an extension of the Murnane paper by explicitly including contract provisions in the teacher turnover equations. To look at this issue, teacher contracts in New York public schools are analyzed and the presence of provisions related to teacher turnover are recorded. These variables are then used to explain the odds that individual teachers will transfer schools within a district or leave a district.

II. Human Capital and Internal Labor Markets [1]

Teacher mobility patterns have been analyzed primarily within a framework created by melding the theory of human capital and the theory of internal labor markets. The explanation of teacher mobility among schools within a district, among districts, and between a school district and the rest of the economy are enhanced by human capital considerations. According to the theory (See Becker 1964) each individual has embodied within him (or her) a valuable economic resource, called "human capital" that yields returns over his (or her) lifetime. Human capital can be partitioned into general and specific components. General human capital encompasses all those investments that bring the same return in all occupations. Specific human capital displays different returns in different occupations since the acquired knowledge is more germane to one occupation than another.

The notion of specific human capital is pertinent in explaining

teacher turnover by structuring the labor market for teachers according to certain barriers imposed by the acquisition of specific human capital. The concept of specific human capital is relative. Knowledge of the idiosyncracies of certain school principal, for example, is a form of human capital specific to a school. A teacher with this knowledge will accrue a greater return from this investment by being associated with the school headed by the principal of mention than some other school in the district. This knowledge creates barriers to the mobility of teachers between schools. On the other hand, specific knowledge about a school principal creates no barriers to mobility between assignments within the same school. Another example of the relative nature of barriers created by specific human capital can be constructed around a master's degree. In education, a master's degree is specific human capital relative to the education sector. However, it is not specific human capital when two jobs within the education sector are being evaluated.

The barriers to mobility created by the acquisition of specific human capital partition the educational labor market into relatively autonomous submarkets--or internal labor markets (see Kerr 1954). Within the educational sector, four internal labor markets are discernible. The first internal labor market encompasses the primary and secondary teaching sector and is separate from all other occupations, including college-level teaching. The second level is the teacher labor markets delineated by the different certification requirements of various states. Thus, a state such as New York is an internal labor market and all other states are external to it. The third tier is comprised of individual school districts. Specific knowledge acquired by a teacher of district policies and procedures as well as the vesting provisions of many district retirement systems impede movement across districts. The fourth level of internal labor markets is at the school

level. As illustrated in an earlier example, specific knowledge of building administrators and familiarity with students, parents, and other teachers create barriers of mobility between schools.

Barriers between certain subsections of the educational sector created by specific human capital vary in the degree with which they impede mobility. The intensity of the barriers depends in part on the relative magnitude of the human capital. An experienced teacher with graduate degrees in education is less likely to leave the education sector for a job elsewhere than a teacher with a smaller investment in teaching. Along the same lines, a teacher recently hired by a district will have fewer ties to a specific school than a teacher who has considerable seniority in a specific school.

This paper is concerned with the internal labor market associated with a state. Two major subsections are important in explaining the mobility of teachers within a state. The first is among districts and the second is among schools within a district. Mobility among districts will be referred to as quits, and mobility of the second kind will be referred to as transfers. Mobility of these types have been considered elsewhere. Baugh and Stone (1982), for example, suggest that quits are motivated by wage differentials between districts and the non-educational sectors. They find support for this hypothesis using data from Oregon school districts.

Transfers within a district, however, are not associated with salary differentials. Salaries within school districts are based on education and experience levels and assignments at different schools but with the same input requirements are considered identical and command the same salaries. However, nonpecuniary differences among assignments make some assignments relatively more attractive to teachers than others. Moreover, teachers possess different characteristics apart from education and experience, and principals undoubtedly prefer some teachers over others. Some of the

measurable nonpecuniary considerations that distinguish schools include student achievement and socioeconomic status of students. Thus, since these nonpecuniary benefits are school or even class-specific, these nonpecuniary differences should account for much of the voluntary teacher mobility within a school district.

III. Institutional Work Rules and Teacher Mobility

Implicit in the human capital and internal labor market model is the assumption that the mobility of teachers reflects the voluntary decisions of teachers who are attempting to improve the quality of their jobs (Murnane 1981, p. 4). The ability of teachers to move voluntarily is enhanced when teachers are in short supply. At that time, more positions exist than teachers and more opportunities exist for teachers to find an assignment which matches their preferences. When a shortage is replaced by a surplus of teachers, fewer opportunities exist for teachers to move to more desirable assignments and in some cases teachers are transferred involuntarily and even laid off by the district. Districts which are forced to lay off teachers or transfer them involuntarily have instituted rules and procedures to perform these functions. In most states, these rules reflect a combination of state labor law and collective bargaining agreements.

Teacher mobility patterns will be influenced in different ways depending upon whether decisions to move are made voluntarily or involuntarily. For example, under conditions of increasing enrollment in which adequate alternative assignments exist for teachers to move into, one would expect greater mobility of teachers for all levels of experience. Under declining enrollments, the reduction in the number of alternative positions reduces the probability that teachers can find an assignment that increases their utility. The human capital model predicts that teachers with

low seniority would have a low transfer rate. The institutional rules model predicts that teachers with low seniority would have a high transfer rate. The latter follows from the bumping process that results from a reduction in teaching positions. Since most locally negotiated reduction-in-force procedures call for staff layoffs inversely related to seniority, teachers with the lowest seniority will be dismissed first followed by teachers with slightly more seniority. This procedure is also followed for granting assignments to teachers. Teachers with greater seniority are given the first opportunity of refusal whenever a position is vacated. In the case of declining enrollments and low natural attrition rate of teachers, it is more likely that less desirable positions will be vacated before the more preferred assignments become available since much of the turnover comes from the least senior teacher.

IV. Description of the Data

This study uses the New York State Department of Education's personnel files of elementary and secondary public schools teachers to trace the whereabouts of regular classroom teachers between 1972 and 1976. The Department of Education maintains personnel records of all classroom teachers in public schools in the state of New York. Each year, the files are updated to include the information relevant for that year. Included in the files are information about the teacher's age, sex, total teaching experience, experience within the district, assignment, salary, and percentage of the time employed. In addition, each teacher is identified with a specific school and district. The school and district are coded in such a way that one can match the file of an individual teacher over consecutive years in order to determine whether or not each teacher has changed schools within a district or changed districts. By having information on the school and/or

district of origin and destination, it is possible to explore factors which may be attributable to teacher turnover.[2]

Almost every public school district in the state of New York is represented by a recognized collective bargaining unit. Therefore, only teachers covered by a locally negotiated contract are included in the sample. As discussed in the companion paper (see Eberts 1982b), the quit and transfer rates found for teachers in New York state are well within the range of rates found in other studies. Between 1972 and 1976 the annual quit rates for the sample of roughly 19,000 teachers averages 9 percent and the annual transfer rate averages 4 percent.

VI. Analysis of Teacher Turnover in New York State School Districts

A. Description of Variables[3]

The two theories of teacher turnover can be differentiated by including variables which capture the institutional dimensions of district personnel decisions. Since collective bargaining has been a major force in shaping district policy, particularly related to personnel decisions, it is appropriate to include variables which record the presence of certain contract provisions. Two provisions are included. The first records the presence of a provision which addresses the issue of class size. The second provision relates to reduction-in-force procedures; specifically, it records whether or not the district follows seniority in determining staff reduction.

Class Size Provisions. The effect of a class size provision in a district contract depends upon the enrollment trends within the district. For districts experiencing increasing enrollments, a class size provision (if interpreted as placing a ceiling on the number of students in a class) will call for additional teachers to be hired in order to stay below the

prescribed level. In many cases these provisions do not pertain to each class but call for an average class size to be maintained at the school level or district level. In addition, a class size measure is sometimes used by district administrators as a visible means of allocating teacher FTE to various schools as well as dictating the number of teachers hired by the district.

For teachers in districts facing declining enrollments, a class size provision has a different effect. Administrators, in many cases, interpret the prescribed class size not only as a ceiling but also as a floor on class size. Thus, the class size provision becomes a justification for reducing the teaching staff when enrollments decline.

With respect to teacher transfers between schools, a class size provision would be expected to increase the number of transfers within the district under either the increasing or decreasing enrollment scenario. In both cases, a change in enrollment forces the administration to move teachers between schools in order to maintain the specified student/teacher ratio.

With respect to quits, teachers covered by a class size provision in increasing enrollment districts would be less likely to quit than teachers not covered. On the other hand, teachers covered by a class size provision in declining enrollment districts would be more likely to leave the district than teachers not covered.

Reduction-in-force Provisions. When enrollment declines are severe enough to warrant the dismissal of teachers, the decision must be made as to which teachers will be laid off first. Districts which have negotiated a reduction-in-force provision will, in many cases, have a preplanned procedure for determining the sequence of layoffs. Most negotiated provisions follow a procedure based upon the seniority of the teacher. With such a provision, one would expect the least senior teachers to be released first followed by

the release of teachers with slightly more seniority when the need for additional dismissals arises. Thus, by interacting a reduction-in-force provision with a variable measuring the experience of a teacher within a district, one should find the coefficient on the interaction term with the least seniority to have the largest magnitude. Successively smaller magnitudes would be expected on interaction terms associated with greater seniority. Reduction-in-force provisions may also affect the transfer of teachers through a bumping process initiated by terminations.

Teachers in increasing enrollment districts who are covered by a seniority clause should be unaffected by the provision since there is no reason to implement the procedure if layoffs are unnecessary.

It is also interesting to note the relationship between the class size provision and the reduction-in-force provision. If the presence of a class size provision promotes the dismissal of teachers in districts with declining enrollments, then the reduction-in-force provision will be invoked more often with the class size provision than without it.

Other Determinants of Teacher Turnover. In addition to contract provisions, factors related to personal preferences and district conditions are expected to influence teacher mobility. Teachers' experience within the district, as mentioned earlier, is included to reflect seniority. Experience is divided into three categories for transfers (1 year, EXP1; 2-3 years, EXP23; 4-5 years, EXP45; with greater than six years included in the intercept). The racial composition of the district (percentage of black teachers MINT72) and percentage of black students (MINS72 in the district) is included to reflect the mobility which results from teachers seeking assignments which best suit their preferences. More heterogeneous schools will have a greater assortment of assignments with different racial characteristics. District enrollment (SIZE) determines the number of

intradistrict job opportunities, and one would expect this to be positively related to transfers and negatively related to quits. The latter relationship follows if teachers view the ability to change position as an improvement in utility and thus when able to do so will be less inclined to leave the district. MALE is included to account for differencess in personnel policies based on sex or sex-related personal preferences towards teacher mobility.

B. Empirical Results

Logit analysis is employed to estimate the effect of contract provisions (and other variables) on the probability than an individual teacher will transfer or quit. The probability that a teacher transfers (or quits) takes the implicit form:

(1) P(transfer) = f(contract provisions, X)

where P(transfer) is the probability of intradistrict mobility and X represents a vector of personal, job-related, and district characteristics. The change in enrollment is omitted from the equation since the sample is divided into three subgroups according to the district enrollment trends.

Ordinary least squares (OLS) estimates of equation (1) are not efficient when the dependent variable takes on qualitative values (e.g. 0-1 values for TRANSFER and QUIT). In addition, OLS estimates of standard errors of the coefficients are not consistent. Thus, a maximum-likelihood logit technique is used to account for the qualitative nature of TRANSFER (QUIT). The probability that teacher j transfers (quits) is assumed to be expressed by

(2) $Pj(TRANSFER) = \exp(b'Xj)/(1+\exp(b'Xj)$

where b'(X) is a vector of coefficients (explanatory variables). The same expression is used to describe quits but with different coefficients.

Maximum-likelihood estimates of the logistic specification of the determinants of transfers and quits are presented in Table 1. Since the dependent variable is the logarithm of the odds that a particular choice will be made, the estimated coefficients can be interpreted as the effect of the respective variables on odds of transferring (or quitting).

Transfers. By comparing the estimated coefficients across the different enrollment trends, a number of interesting patterns emerge. One of the most striking results is the regularity with which transfers follow the hierarchy of seniority. In all three subsamples, the odds that a teachers with one year of experience within the district will transfer is greater than the odds that a teacher with 2 to 3 years experience and so forth will transfer. The predicted transfer rates for teachers with different levels of seniority, presented in Table 2, conform with the notion that the probability that a teacher will transfer is inversely related to the teacher's seniority. This supports the human capital theory that teachers with greater investment in specific capital will be less likely to transfer. Comparison of results across samples, provides support for the institutional rules theory. The magnitudes of the coefficients associated with one year and 2 or 3 years of experience increase for teachers in districts facing larger enrollment declines.[4] These results reveal that teachers in the first two experience categories (usually untenured) are more likely to transfer the larger the enrollment declines. The predicted rates in Table 2 also support the institutional rules theory as evidenced by the inverse relationship between enrollment trends and predicted transfer rates. This behavior is due presumably to the bumping process initiated by terminations. Furthermore, with opportunities to move to more preferred positions drastically reduced by declining enrollments, more senior teachers are less likely to move voluntarily.

Table 1: Estimates of the Odds of Transferring

Variable	Definition	Mean			Coefficient		
		Increasing	Slightly Declining	Rapidly Declining	Increasing	Slightly Declining	Rapidly Declining
Constant					-2.33	-3.07	-2.61
					(13.9)	(18.6)	(22.8)
EXP1	value=1 if one year experience	.085	.068	.048	.52	.82	.93
					(2.39)	(4.17)	(5.10)
EXP23	value=1 if two or three years experience	.237	.192	.159	.38	.48	.55
					(2.48)	(3.34)	(4.36)
EXP45	value=1 if four or five years experience	.196	.162	.165	.31	.22	.37
					(1.88)	(1.38)	(2.88)
MALE	value=1 if male teacher	.450	.450	.460	.10	-.14	-.31
					(.85)	(-1.31)	(-3.32)
SIZE	district enrollment per 1000	7.400	7.636	13.344	-.006	.024	.010
					(-.56)	(4.96)	(3.52)
CLASSIZE	value=1 if class size provision in contract	.768	.796	.732	.31	.31	.34
					(2.13)	(1.96)	(2.89)
BLINT72	percentage Black teachers in district	.007	.023	.025	-10.3	1.60	.60
					(-2.12)	(1.31)	(.60)
BLINS72	percentage Black students in district	.019	.070	.077	-1.47	.59	.91
					(-.76)	(1.18)	(2.60)
SENIORITY	value=1 if seniority provision in contract	.184	.154	.142	-.12	-.025	-.04
					(-.48)	(-.12)	(-.19)
*EXP1	SENIORITY x EXP1	.020	.010	.006	-.86	-.12	.24
					(-1.46)	(-.23)	(.46)
*EXP23	SENIORITY x EXP23	.049	.028	.019	.16	.09	.17
					(.44)	(.24)	(.47)
*EXP45	SENIORITY x EXP45	.034	.024	.022	-.35	-.04	.61
					(-.78)	(-.09)	(1.86)
F-statistic					2.15	11.4	14.6

Table 2: Predicted Transfer Rates for Teachers with Different Levels of Seniority

Years of Experience within District in 1972	Enrollment Trends		
	Increasing	Slightly Declining	Rapidly Declining
1	12.3%	16.9%	18.6%
2-3	12.1	13.2	13.5
4-5	10.7	10.6	12.3
6 or greater	8.4	8.8	8.2

Note: the percentages indicate predicted transfer rates in the three subsamples, holding all variables constant (except seniority) at their average values for the rapidly declining enrollment districts.

Districts are classified according to the following enrollment trends: (1) increasing: if greater than 0; (2) slightly declining: if less than 8 percent decline between 1972 and 1976; (3) rapidly declining: if greater than 8 percent decline between 1972 and 1976.

To explore further the effects of institutional rules on transfers, class size and RIF provisions were entered into the transfer equation. The contract provisions are entered both independently and interactively with the experience measures. When entered independently, the coefficient on class size is statistically significant, but the RIF provision is not. The presence of a class size provision increases the odds that a teacher will transfer. This result is consistent across all types of enrollment trends with roughly the same magnitude found in each group.

Since one would expect the presence of a reduction-in-force provision based on seniority to accentuate the effect of seniority on the odds of transferring, the RIF provision was interacted with the experience variables. It appears, however, that reduction-in-force provisions have no effect on the odds that a teacher within a given experience category will transfer.

Other variables were entered into the logit analysis to reflect personal characteristics of teachers and district conditions. Sex made little difference in explaining transfers except for teachers in districts with rapidly declining enrollments. In this situation, males were less likely than females to transfer. One would also expect that the size of the district would affect the number of opportunities to transfer, and thus the odds of transferring. This was true only for districts experiencing some degree of decline in enrollments. The ethnic composition of the district may also affect transfers since due to the heterogeneity teachers may seek to teach in schools with a certain ethnic mix of students and/or teachers. The results for these variables are inconsistent across subsamples.

Quits. Variables similar to those used to explain transfers were used to determine the odds that a teacher will leave a district.[5] The results of the logit analysis are shown in Table 3. The experience levels of teachers were entered to explain the order of priority given to layoffs.

Table 3: Estimates of the Odds of Quitting

Variable	Definition	Mean			Coefficient		
		Increasing	Slightly Declining	Rapidly Declining	Increasing	Slightly Declining	Rapidly Declining
stant					-.82	-1.44	-1.66
					(7.73)	(16.21)	(21.4)
13	value=1 if one to three years experience	.33	.31	.25	.94	1.35	1.59
					(9.78)	(16.88)	(21.16)
45	value=1 if four or five years experience	.18	.15	.16	.30	.60	.88
					(2.36)	(5.78)	(9.78)
55	value=1 if over age 55	.08	.09	.09	2.96	2.39	2.28
					(8.36)	(21.4)	(22.95)
E	value=1 if male teacher	.38	.40	.41	-.88	-.71	-.69
					(10.16)	(10.34)	(11.03)
E	district enrollment (/ 1000)	7.149	7.289	12.875	-.04	.007	-.002
					(4.56)	(1.88)	(.89)
SSIZE	value=1 if class size	.76	.78	.72	-.019	-.14	.022
					(.20)	(1.80)	(.32)
T72	percentage of black teachers in district	.007	.02	.03	1.07	-2.46	-.01
					(.38)	(2.39)	(.01)
S72	percentage of black students in district	.02	.07	.08	-3.51	.91	.90
					(2.72)	(2.49)	(3.23)
IORITY	value=1 if seniority provision in contract	.18	.16	.14	-.12	-.25	.29
					(.67)	(1.77)	(2.49)
P13	SENIORITY x EXP13	.08	.05	.03	.025	.44	-.21
					(.11)	(2.24)	(1.13)
P45	SENIORITY x EXP45	.03	.03	.02	.004	.50	-.26
					(.01)	(2.02)	(1.12)
entage quits		.28	.29	.28			
atistic					27.32	48.46	65.48

: t-statistics in parentheses

Since some teachers may leave for personal reasons, the possibility that a teacher may retire was taken into account by including a dummy variable to denote teachers who were at retirement age in 1972.

The results related to the effect of seniority on quits follow the same pattern as found for transfers. Teachers with one to three years of experience in 1972 are more likely to leave a district than teachers with 6 or more years. Furthermore, the probability that a teacher with one to three years experience will quit is substantially higher than the probability that a teacher with four to five years experience will quit. The magnitudes of the coefficients of the experience variables are larger for teachers in districts which face declining enrollments than for teachers in increasing enrollment districts. This inverse relationship of quits to enrollments is as expected since the greater enrollment declines would force a greater number of layoffs. According to the magnitudes of the coefficients, this enrollment-induced reduction in force falls more heavily on the first through third year teachers than even on the fourth and fifth year teachers, as evidenced by the large difference in the magnitude of the coefficients for the first group compared with the second. The predicted quit rates, shown in Table 4, correspond with the magnitudes of the coefficients. For each subsample, the probability that a teacher will quit is inversely related to seniority.

The contract provisions appear to affect quits in districts characterized by declining enrollments. For teachers in slightly declining enrollment districts, for example, the presence of a reduction-in-force provision based on seniority reduces the likelihood of quits for teachers as a group. The seniority provision, on the other hand, increases the odds that a teacher with less than 6 years experience will quit (with respect to teachers with more than 6 years experience). These results are consistent

Table 4: Predicted Quit Rates for Teachers with Different Levels of Seniority

Years of Experience within District in 1972	Enrollment Trends		
	Increasing	Slightly Declining	Rapidly Declining
1-3	35%	40%	47%
4-5	24	28	32
6 or greater	20	22	18

Note: The percentages indicate predicted quit rates from 1972 to 1976 in the three subsamples, holding all variables constant (except seniority) at their average values for the rapidly declining enrollment districts. To get annual rates, divide by 3.

See note in Table 3 for explanation of enrollment trends.

with the intent of such a provision to protect the jobs of the most senior teachers, even at the expense of junior teachers. For teachers facing more severe enrollment declines, the seniority provision increases quit rates. The seniority provision, in this case, may serve as a signal of actual layoffs or conditions which cause teachers to search actively elsewhere for better job prospects. Thus, the provision distinguishes those districts which are the worst off.

One explanation of these counterintuitive results may be found in the percentage of teachers within each enrollment category covered by seniority provisions. The means in Table 3 show that the percentage of teachers covered falls as enrollment declines. Thus, it may be the case that administrators, who feel that layoffs are imminent, try to avoid the restrictions of a seniority provision by keeping it out of the contract. Evidence of such behavior is found in Eberts (1982a).

Class size limitation provisions also significantly reduce quits in slightly declining enrollment districts. If these provisions place a floor (as well as a ceiling) on class size, then one would expect declines in enrollment to cause more teachers to be laid off as the district seeks to maintain a specified student/teacher ratio. Our findings, however, show the opposite to take place. Since enrollment declines are not severe in the slightly-declining-enrollment category, there may be sufficient slack in the class size restrictions to allow more teachers to stay with the district than otherwise would be the case.

VI. Conclusion

With declining enrollments and budgetary setbacks, the dynamics of the internal labor market for teachers have changed over the past two decades. When teachers were in short supply in the 60s, numerous

opportunities existed for intradistrict transfers and teachers were able to move according to their own preferences. In the 70s, the situation completely turned around. Teachers were forced to transfer between schools and in some cases to leave the district. The procedure by which teachers are transferred or terminated is governed by institutional rules which are established in part through collective bargaining negotiations. The basic issue addressed in this paper is the effect of certain collective bargaining provisions on teacher turnover.

Results of a logit analysis of teachers in New York State during the 1970s show that class size provisions and reduction-in-force provisions based on seniority significantly affect teacher quits and transfers. Class size provisions increase the probability of transfers and reduce the probability of quits. The seniority provision only affects the quit rates of teachers in rapidly declining enrollment districts.

This paper makes two contributions to our understanding of the determinants of teacher quits. First, this study replicates to a large extent the findings of Murnane (1981) and Greenberg and McCall (1973). The comparability of our findings, based on over 19,000 teachers in 500 districts, with the results of the previous studies, based on individual school districts, reinforces the importance of human capital and institutional rules in explaining teacher mobility. Second, this study for the first time considers the effect of specific contract provisions on teacher turnover. Murnane found that institutional rules are important determinants of teacher mobility. Our results agree with his conclusion but go one step further to show the effect of individual rules on personnel decisions in school districts. The finding that class size and seniority provisions affect teacher turnover in different ways illustrates the importance of considering individual rules within the entire institutional structure of decision-making in school districts.

Footnotes

[1]Greenberg and McCall (1973) contain an excellent review of human capital theory and internal labor markets and some parts of this section borrow from their description.

[2]See Eberts (1982b) for details about the construction of the data set.

[3]All level variables are measured in 1972.

[4]Districts are classified according to the following enrollment trends: (1) increasing: if enrollment between 1972 and 1976 increased; (2) slightly declining: if less than an 8 percent decline between 1972 and 1976; (3) rapidly declining: if greater than an 8 percent decline between 1972 and 1976.

[5]Wage differentials between districts were omitted. Although Baugh and Stone (1981) find wage differentials to be significant determinants of teacher quits, we follow Murnane's formulation which uses the same basic equations for both quits and transfers. This formulation can be viewed as a reduced form specification of the Baugh and Stone specification.

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