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SPECIFIC TRAINING, UNIONS, AND THE RELATIONSHIP BETWEEN EMPLOYER SIZE AND WAGES

by

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ABSTRACT

In this paper I demonstrate that the explanatory power of employer size variables in nonunion wage regressions is diminished by allowing the coefficient of tenure (years on current job) to vary with employer size. Among nonunion workers, average tenure and the coefficient of tenure increase with both firm size and plant size. This pattern is consistent with the hypothesis that investment in specific human capital accounts for much of the previously unexplained relationship between employer size and nonunion wages. The relationships between compensation, tenure, and employer size are different for union workers. Employer size is less important generally, and the importance of plant size is especially low. Also, the data are more consistent with the specific human capital model when union compensation is measured by annual income rather than the hourly wage.

SPECIFIC TRAINING, UNIONS, AND THE RELATIONSHIP BETWEEN EMPLOYER SIZE AND WAGES

Twenty-five percent of U.S. wage and salary workers are employed in firms of fewer than 25 employees, while at least 34 percent work in firms of 1000 employees or more.[1] On average, employees of the largest firms receive wages that are 12 percent higher than employees of the smallest firms, even after adjustment for differences in education, tenure, and union membership (Mellow (1983), Table 2). This result is supported by other studies, which have consistently found that wages increase with employer size (Freeman and Medoff (1981), Lester (1967), and Masters (1969)). Mellow's estimate is an average of dissimilar relationships among union and nonunion workers. Recent studies show that union wages vary much less with employer size than do nonunion wages.

In this paper I demonstrate that the explanatory power of employer size variables in nonunion wage regressions is diminished by allowing the coefficient of tenure (years on current job) to vary with employer size. Among nonunion workers, average tenure and the coefficient of tenure increase with both firm size and plant size. This pattern is consistent with the hypothesis that investment in specific human capital accounts for much of the previously unexplained relationship between employer size and nonunion wages.

The relationships between compensation, tenure, and employer size are different for union workers. Employer size is less important generally, and the importance of plant size is especially low. Also, the data are more consistent with the specific human capital model when union compensation is measured by annual income rather than the hourly wage. Union wages and average tenure increase modestly with firm size, but the contribution of tenure to hourly wage rates does not consistently increase with either firm or plant size. On the other hand, tenure's contribution to the annual incomes of union workers does increase modestly with firm size. This suggests that among union members, specific training has its principal effects on dimensions of compensation other than wage rates.

I. Background

A. Theory

Among the explanations for the positive association between employer size and wages is the hypothesis that the quality of the average worker increases with employer size.[2] This proposition is supported by data from the May 1979 Current Population Survey,[3] which contain information on both employer size and the standard complement of human capital variables. Nevertheless, a significant, positive relationship between size and wages remains after standardizing for differences in age, schooling, and both experience and tenure.

A dimension of labor quality that may not have been captured successfully by the standard specification of the wage equation is firm-specific human capital. Such capital consists of skill or knowledge that is valuable in the worker's current job but would be much less so if the worker began working for another employer (Becker (1975), Oi (1961)). In addition to explicit training, the concept includes activities that improve the quality of the match between employer and employees, such as recruiting and screening (Jovanovich (1979)).

Oi (1983) argues that specific capital increases with employer size.[4] His conclusion follows from his assumption that large firms are the product of the superior entrepreneurial skills of exceptional managers. These individuals do not have superior supervisory skills, however. Consequently, with their comparative disadvantage at supervision, managers of large organizations have a stronger incentive to limit the amount of time they spend monitoring subordinates. Reliable workers are productive with less monitoring, and screening and training contribute to reliability. Adopting standardized procedures that are unique to the organization also holds down monitoring costs. All these increase the amount of firm specific investment in each worker.

If specific human capital does rise with employer size, and if the standard wage equations do not capture the return to this capital properly, then some of the remaining relationship between employer size and wages can be explained by improving this aspect of the specification. Stocks of specific capital are not observable, so differences in such capital must be inferred indirectly. The most common approach is to use information on tenure, age, and education. Investments in specific capital produce incentives for both employer and employee to make their association a durable one. Much theoretical work has addressed the ways these incentives affect this aspect of the behavior of labor market participants. (Parsons (1972), Jovanovich (1979), Carmichael (1983), and Coyte (1984)) The general conclusion is that specific capital will make wages an increasing function of years of service with the current employer, as well as years of other labor market experience and schooling.

An extension of this reasoning leads to the hypothesis that tenure's contribution to wage rates should increase with the amount of specific capital. From there it is a short step to predicting that the contribution of tenure to wages will increase with employer size. Furthermore, a specification that allows the coefficient of tenure to vary with employer size will allocate less explanatory power to variables measuring employer size than will a specification constraining the coefficient of tenure to be equal for workers in all employer size classes.

Some suggestive evidence along this line is reported in Mellow (1983). Using the May 1979 CPS, he found that average tenure and the coefficient of tenure in nonunion wage equations both increase with firm size. This result was obtained from separate regressions over three firm size classes, so variables capturing an independent effect of firm size were not included. In the next section I use the same data and further explore the interrelationship between employer size, tenure, and wages. A series of regressions reveals the extent to which the explanatory power of employer size variables is diminished by allowing the coefficient of tenure to vary with employer size. A brief description of the data and regression specifications precedes the regression results.

B. The data and specification

The 1979 May CPS provides information on personal characteristics, union status, hourly wage, and employer size for a random sample of individuals in the labor force. The data place workers in one of five categories for both plant/office and firm/agency size. (The latter differs from the former for employees of multi-establishment enterprises.) The smallest category is 1-24 employees, and the largest is 1000 employees or more.

The CPS file includes information on size of firm and size of plant. Although incorporating both dimensions into the equation is desirable, estimating separate effects for plant size and firm size is made difficult by the relatively small amount of independent variation between the two. Sixty percent of the sample report that their plant and firm are in the same size class. This dependence is not coincidental. Employees of firms in the smallest size class must also work in plants of the smallest size class. Employees of firms in the next size class must work in establishments of that size class or the one smaller class, and so on.

This interdependence can be incorporated by including a separate dummy variable for each feasible combination of firm size and plant size. Because such a model produces an unwieldy set of results, the specification that I adopt combines the first four size classes into two. The resulting size classes are 1-99 workers, 100-999, and 1,000 workers or more. Combining groups this way reduces the number of employer size parameters from 14 to 5 without seriously disturbing their general pattern.[5] Estimates not reported show that none of the qualitative properties that will receive attention are different in the complete model from the results reported below.

The equation estimated has the form

(1) $$w = c + \sum_{i=2}^{3} \sum_{j=1}^{i} \alpha_{ij} D(S_{ij}) + \beta\, TEN + \gamma X + \varepsilon .$$

w is the log of the individual's hourly wage, $D(S_{ij})$ is a binary variable equal to 1 when the individual's employer is in firm size class i and plant size class j, TEN is the log of years on current job, and X is a vector of control variables. Of the parameters to be estimated, c is the constant term and α, β, and γ are coefficients. The summation over i begins with i=2 because the smallest firm/plant size class (i=j=1) is used as the base group. The α_{ij} represent differences between the intercept of the wage function for this smallest size class and the intercepts for each of the larger size classes. Included in the controls are other experience and its square, years of schooling and its square, the percentage of the workers in the individual's industry who are union members, and sets of binary variables for race, sex, industry, occupation, and region. Separate equations are estimated for union and nonunion wages.

If wages increase monotonically with employer size in both dimensions, then the following conditions will hold:

Condition (a): $\alpha_{ij} > 0$ for all i,j;

Condition (b): $\alpha_{i'j} > \alpha_{i',j-1}$ for all j such that $1 < j \leq i'$;

Condition (c): $\alpha_{21} > 0$ and $\alpha_{ij'} > \alpha_{i-1,j'}$ for all i such that $1 < i \leq j'$.

Condition (a) asserts that wages will be lower for workers in the smallest size class than for workers in all other employer size classes. This is a very weak test of the importance of employer size. Condition (b) says that for each firm size class i', wages will increase with plant size. Condition (c) claims that for each plant size class j', wages will increase with firm size.

Although one could evaluate test statistics for each of the pair-wise relationships implied in conditions (a), (b), and (c), reported results will be confined to F statistics corresponding to the following joint null hypotheses:

Hypothesis (a): $\alpha_{ij}=0$ for all i,j;

Hypothesis (b): $\alpha_{i'j}=a_{i',j-1}$ for all j such that $1 < j \leq i'$;

Hypothesis (c): $\alpha_{21}=0$ and $\alpha_{ij'}=a_{i-1,j'}$ for all i such that $1 < i \leq j'$.

These F ratios provide handy summary statistics for assessing the significance of the relationships among the coefficients. If the coefficients of equation (1) have the relationships specified in Conditions (a) through (c), and if Hypotheses (a) through (c) are rejected, then wages can clearly be regarded as increasing in both dimensions of employer size. In most cases, however, the conditions specified will be met for some combinations of parameters but not for others. In these circumstances, some judgement will be required.

The specification in equation (1) constrains the return to tenure (β) to be equal across employer size classes. Relaxing this constraint leads to equation (2):

$$(2) \qquad w = c + \sum_{i=2}^{3} \sum_{j=1}^{i} \alpha_{ij} D(S_{ij}) + \beta_0 TEN + \sum_{i=2}^{3} \sum_{j=1}^{i} \beta_{ij} TEN \times D(S_{ij}) + \gamma X + \varepsilon.$$

The β_{ij} in this equation measure the differences between the coefficient of tenure for workers in the smallest employer size class (β_0) and the coefficient of tenure for workers in size class ij.

The results reported for equation (2) will include F statistics corresponding to Hypotheses (a)-(c). The hypothesized relationship between specific human capital and employer size will produce estimates of β_{ij} that are positive and are increasing functions of both firm and plant size. Thus, identical conditions and hypotheses to (a)-(c) can be constructed for the β_{ij}. The corresponding F statistics will be reported with the coefficients of the size-tenure interactions.

II. Results

Table 1 displays data showing the behavior of average tenure and the distribution of workers across employer size classes. Nonunion workers are heavily concentrated in small employers (45 percent are in firms of fewer than 100 workers), they have low average tenure, and their average tenure rises consistently with both firm size and plant size. Union workers are heavily concentrated in large firms (nearly 60 percent are in firms of 1,000+ workers), they have high average tenure, and their average tenure rises more strongly with firm size than plant size.

The results of estimating equations 1 and 2 are displayed in the next two tables. Results from the sample of nonunion workers are shown in Table 2, while estimates from the sample of union workers are provided in Table 3. The coefficients are presented in matrix form to facilitate comparison along one dimension of employer size while holding the value of the other dimension constant. In the column to the right of the coefficients are the F statistics corresponding to the null hypotheses that the coefficients within each row are equal. Below each set of coefficients are F statistics corresponding to the null hypotheses that intercept and slope coefficients are equal down the columns. (In the first column, the null hypothesis is that the coefficients will all be 0. This follows from Condition C.)

A. Nonunion Wage Rates

The estimates in the top section of Table 2 indicate that nonunion wages increase consistently with both firm size and plant size. The F statistics indicate that the hypothesis of equality of intercepts along the various rows and columns can be rejected at the 1-percent level in three cases and the 10-percent level in the remaining case. The null hypothesis that the intercepts are all equal is overwhelmingly rejected.

An assessment of the importance of firm size versus plant size reveals a mixed picture. If attention is confined to plants employing fewer than 1,000 workers, wages appear to increase more strongly with firm size. To see this, note that wages increase from 4 to 5½ percent with each step increase in firm size.[6] This can be compared with increases of about 2½ percent as plant size rises from the smallest to the intermediate class. But in the largest firms, wages are over 10 percent higher in plants of 1,000+ workers than in plants employing 100 to 999 workers. Thus, plant size has uneven effects on wages, and this unevenness makes relative importance of firm versus plant size vary across the range of the plant size variable.

Allowing the coefficient of tenure to vary with employer size has a dramatic effect on the estimates of the α_{ij}. As shown in the middle section of Table 2, these coefficients are 25 to 60 percent lower when the interactions are included. Hypotheses (b) and (c) are rejected in only two of the four cases. In one case (the bottom row), a decline in the intercept as plant size increases from the smallest size class to the intermediate one contributes to the rejection. The null hypothesis that the intercepts are all equal is still strongly rejected, but the F statistic is less than 1/4 its value when equation (1) is used. In comparison with the pattern in the top section, the tendency for the intercepts to increase with plant size is weaker.

In the bottom section of the table, the coefficients of the size-tenure interaction variables increase consistently with employer size. The coefficients within the various rows and columns are significantly different from one another in three of the four cases. The pattern implies that the tenure effect rises with both firm and plant size, but the jump in the effect as size increases to the intermediate plants in the largest firms is particularly large. Overall, the estimates in Table 2 and the top of Table 1 are consistent with the hypothesis that specific human capital accounts for some of the positive association between employer size and nonunion wage rates.

B. Union wage rates

Results for union members are shown in Table 3. Using equation (1), the intercepts of the wage equations increase consistently with both firm size and plant size. Most of the variation in the intercepts arises from the distinctively higher wages in the largest firms. The estimates in the first row are small, and plant size differences are modest among workers in firms of 1,000+ workers.[7]

The middle section of Table 3 indicates that adding size-tenure interactions has a mixed effect on the intercepts. The F statistic for Hypothesis (a) falls to two-thirds of its former value, but several coefficients rise. The coefficients that increase are on the diagonal. The corner coefficient, corresponding to largest firm/smallest plant, declines. Consequently, the tendency for the intercepts to rise with plant size becomes more pronounced, but firm size differences become smaller across the small and intermediate plants.

Patterns in the coefficients of the size-tenure interactions, shown in the bottom section, are very different from those for nonunion workers. The only consistent trait is that the coefficients tend to decline with plant size. The effect of firm size is mixed. The coefficients decline as one moves from the smallest firms to the intermediate firms, but then they rise again as one moves down the columns to the largest firms. Nevertheless, tenure's smallest contribution to union wages occurs in the largest employer size class.

C. Union annual incomes

The irregularity of the relationship between tenure's contribution and employer size in the union wage function may be misleading. Nonwage compensation is more important under collective bargaining,[8] and seniority is widely believed to have more value in union establishments than in nonunion ones. In particular, seniority probably carries more weight in determining layoffs, rehires, and overtime under collective bargaining.[9] Evidence in Pearce (1983) indicates that large establishments in manufacturing use layoffs and rehires more liberally than small ones. In combination these considerations imply that analysis of a broader measure of compensation is worth undertaking.

Some progress in this direction can be made by replacing the dependent variable in equations (1) and (2) with the log of annual wage and salary income. Table 4 displays the results for union workers.[10] They provide more support for the specific human capital model than Table 3 does, but some inconsistencies between the estimates and the model's predictions remain.

In the top section of Table 4, the intercepts of the income functions increase consistently with employer size. When the interactions of tenure and the employer size dummies are added, the estimates of α_{ij} become smaller and insignificant in all cases but one. In that one case, however, the estimate is larger than its counterpart in the top section. In the bottom section, the contribution of tenure to income increases steadily with firm size, but the relationship between the interaction coefficients and plant size remains negative, as it was in the wage equation.

The tendency for tenure's contribution to increase with firm size but not with plant size matches the behavior of mean tenure among union workers. Recall from Table 1 that mean tenure of union workers rises much more strongly with firm size than with plant size. Thus, the data are consistent with the proposition that the incentive to remain with an employer increases with firm size and that union workers respond to this incentive.

Nevertheless, the support for the proposition with respect to employer size over all is weak in spots. The F statistics in the bottom section of the table are on the low side, and the regression coefficients have a couple of points of inconsistency with the theory. The principal inconsistency is the very small contribution of tenure to incomes of workers in the largest employers. This suggests that the incentive to keep jobs in the largest plants is relatively low. One would therefore predict that average tenure among union members working for these employers will be less than tenure among union members working in smaller plants. The bottom section of Table 1 reveals that it is not.

Conclusions

The evidence presented in this paper suggests that among nonunion employers, large ones emphasize retention more than smaller ones. The theory of specific human capital provides an explanation for why they would choose to do this. The ability of the employer-size/seniority interactions to reduce the differences in wages across employer size classes strengthens the argument that specific training lies at the heart of the relationship between employer size and nonunion wages. This is an important discovery, because the relationship is strongest for nonunion workers. The absence of information on training, tasks, and skills precludes a more direct test of the model, so the possibility that another theory provides a better explanation of these relationships can not be ruled out. But the human capital model must be regarded as the leading candidate.

The relationships between wages, seniority, and employer size among union workers do not lend themselves to interpretation as straightforwardly. If the patterns in mean seniority reflect the generosity of compensation, then firm size is a more important determinant of total compensation than plant size. The wage regressions do not indicate that specific training contributes to this relationship, but the annual income regressions do.

The reduced-form estimates discussed above raise as many questions as they answer. Perhaps the most useful information they contain is that the patterns suggest that structural estimation would prove rewarding. The potential simultaneities between wage profiles, specific training, union membership, and turnover have long been recognized (Parsons (1977)). Success in estimation of models simultaneously determining even two of these variables remains elusive, however.[11] The evidence presented in this paper indicates that employer size may provide information useful in identifying structural models attempting to incorporate these simultaneities.

FOOTNOTES

1. The figures are from the May 1979 Current Population Survey. One can not be more confident about the percentage of people working in firms of 1,000 workers or more because 11 percent of the respondents replied that they did not know the size of their employer. Some of these probably worked in the largest firm size class, but I suspect few of them worked in the smallest size class. Because I believe a person would know how many co-workers he had if he were employed in an organization employing fewer than 25 people, the first assertion is unqualified.
2. Mellow (1983) and Brown and Medoff (1985) review the other explanations, which include working conditions, union avoidance, and product market power.
3. This particular CPS file includes some responses from the March and June surveys. See Mellow for more details.
4. Actually, Oi contends that specifically-trained workers will be concentrated primarily in the largest firms. I do not express the hypothesis so restrictively. In a more recent article, Garen (1985) advances and tests a similar hypothesis.
5. Reporting the results would be further simplified by constructing two continuous variables from the midpoints of the intervals and using them in the regressions. The disadvantages of that strategy are that it imposes assumptions about the distributions of the size variables within the intervals and it assumes that relationship between employer

size and wages is linear. The first assumption cannot be verified, and the results show the second to be false.

6. The coefficients (multiplied by 100) can be interpreted as approximate percentages. Such an approximation is a slight underestimate, and the bias increases with the coefficient. The true percentage change (P) is given by $P=1-\exp(\alpha)$.

7. Tables 2 and 3 do not fully capture the differences between the union and nonunion equations. When workers are divided into five classes for both firm and plant size, the differences between union wages in the largest firms and union wages in all other firms is particularly pronounced. Few coefficients are significant except those corresponding to the firms of 1000+ workers. In the nonunion equations, nearly all coefficients are significant, and wages increase consistently with employer size. Mellow reports comparable results in Table 3.

8. Chapter 4 of Freeman and Medoff (1984) presents discussion, evidence, and references to other research.

9. See Chapter 8 of Freeman and Medoff (1984).

10. The results for nonunion workers have properties very similar to those of Table 2. The principal difference is that the estimates of β_{ij} for the largest firms ($i=3$) show less of a tendency to increase with plant size.

11. The most common example of simultaneous estimation uses wage rates and union membership as jointly determined variables. Although such models are common, some remain skeptical about their value. See Mitchell (1980, Page 104) and Freeman and Medoff (1981b).

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Table 1

Means of Logged Tenure, by Employer Size Class
(Cell Size in Parentheses)

A. Nonunion Workers

Firm Size Class	Plant Size Class 1-99	100-999	1000+
1-99	2.0 (6849)		
100-999	2.6 (1072)	3.1 (1580)	
1000+	3.1 (1549)	3.7 (1606)	4.7 (1551)

B. Union Workers

Firm Size Class	Plant Size Class 1-99	100-999	1000+
1-99	4.0 (743)		
100-999	5.2 (400)	5.5 (558)	
1000+	6.3 (708)	6.9 (917)	6.9 (881)

Table 2

Regression Results: Wages of Nonunion Workers[a]

A. Estimates of α_{ij} from Equation (1)

Firm Size Class	Plant Size Class 1-99	100-999	1000+	F Statistics[b] [Hypothesis (b)]
100-999	.054 (4.5)	.078 (7.1)		2.6 [.10]
1,000+	.090 (8.5)	.117 (10.9)	.198 (17.1)	34.7 [*]
F Statistics[b] [Hypothesis (c)]	40.5 [*]	8.9 [.003]	-	

F [Hypothesis (a)]: 67.3 [*][b].

B. Estimates of α_{ij} from Equation (2)

Firm Size Class	Plant Size Class 1-99	100-999	1000+	F Statistics[b] [Hypothesis (b)]
100-999	.042 (2.9)	.055 (4.1)		.5 [.5]
1,000+	.076 (5.9)	.056 (4.0)	.118 (7.4)	5.4 [.004]
F Statistics[b] [Hypothesis (c)]	19.3 [*]	.001 [.9]	-	

F [Hypothesis (a)]: 17.2 [*].

C. Estimates of β_{ij} from Equation (2)

Firm Size Class	Plant Size Class 1-99	100-999	1000+	F Statistics[b] [Hypothesis (b)]
100-999	.018 (2.0)	.027 (3.6)		.7 [.4]
1,000+	.021 (2.8)	.058 (7.6)	.064 (8.2)	11.6 [*]
F Statistics[b] [Hypothesis (c)]	5.0 [.006]	10.0 [.001]	-	

F [Hypothesis (a)]: 21.1 [*][b].

Notes: a. Absolute t-ratios in parenthesis.
b. Marginal significance levels in brackets; [*] indicates a significance level of .0001 or less.

Table 3

Regression Results: Wages of Union Workers[a]

A. Estimates of α_{ij} from Equation (1)

Firm Size Class	Plant Size Class 1-99	100-999	1000+	F Statistics[b] [Hypothesis (b)]
100-999	.011	.044		2.4
	(0.6)	(2.4)		[.1]
1,000+	.075	.100	.120	3.3
	(4.3)	(5.9)	(6.7)	[.04]
F Statistics[b]	10.1	10.3	-	
[Hypothesis (c)]	[*]	[*]		

F [Hypothesis (a)]: 12.3 [*][b].

B. Estimates of α_{ij} from Equation (2)

Firm Size Class	Plant Size Class 1-99	100-999	1000+	F Statistics[b] [Hypothesis (b)]
100-999	.038	.084		1.7
	(1.2)	(2.9)		[.2]
1,000+	.049	.091	.168	7.7
	(1.7)	(3.4)	(6.1)	[*]
F Statistics[b]	1.7	.04	-	
[Hypothesis (c)]	[.2]	[.8]		

F [Hypothesis (a)]: 7.9 [*].

C. Estimates of β_{ij} from Equation (2)

Firm Size Class	Plant Size Class 1-99	100-999	1000+	F Statistics[b] [Hypothesis (b)]
100-999	-.017	-.024		.2
	(1.1)	(1.8)		[.7]
1,000+	.012	.002	-.027	4.8
	(0.9)	(0.2)	(2.1)	[.009]
F Statistics[b]	1.5	3.7	-	
[Hypothesis (c)]	[.23]	[.05]		

F [Hypothesis (a)]: 2.6 [.02].

Notes: a. Absolute t-ratios in parentheses.
b. Marginal significance levels in brackets; [*] indicates a significance level of .0001 or less.

Table 4

Regression Results: Incomes of Union Workers[a]

A. Estimates of α_{ij} from Equation (1)

Firm Size Class	Plant Size Class 1-99	100-999	1000+	F Statistics[b] [Hypothesis (b)]
100-999	-.021 (0.7)	.037 (1.4)		2.6 [.1]
1,000+	.072 (2.8)	.068 (3.0)	.136 (5.5)	3.9 [.02]
F Statistics[b] [Hypothesis (c)]	5.3 [.005]	1.1 [0.3]	-	

F [Hypothesis (a)]: 7.9 [*].

B. Estimates of α_{ij} from Equation (2)

Firm Size Class	Plant Size Class 1-99	100-999	1000+	F Statistics[b] [Hypothesis (b)]
100-999	-.050 (1.0)	.019 (0.4)		1.2 [.3]
1,000+	-.010 (0.2)	.012 (0.3)	.172 (4.0)	7.3 [.0007]
F Statistics[b] [Hypothesis (c)]	0.5 [.6]	.02 [.9]	-	

F [Hypothesis (a)]: 7.9 [*].

C. Estimates of β_{ij} from Equation (2)

Firm Size Class	Plant Size Class 1-99	100-999	1000+	F Statistics[b] [Hypothesis (b)]
100-999	.019 (0.7)	.012 (0.5)		.05 [.8]
1,000+	.046 (2.1)	.031 (1.7)	-.016 (0.9)	4.0 [.02]
F Statistics[b] [Hypothesis (c)]	2.3 [.1]	.6 [.4]		

F [Hypothesis (a)]: 1.9 [.08].

Notes: a. Absolute t-ratios in parentheses.
b. Marginal significance levels in brackets; [*] indicates a significance level of .0001 or less.