

**ONLINE APPENDIX SUPPLEMENT
to article in**

AMERICAN SOCIOLOGICAL REVIEW, 2004, VOL. 69 (JUNE:319–344)

Embeddedness and Price Formation in the Corporate Law Market

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Table 1: Summary Statistics and Correlations

	Mean	SD	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1) Firm Partner Price	258.18	49.01	—	—	—	—	—	—	—	—	—	—
(2) Firm Associate Price	136.43	26.96	.66	—	—	—	—	—	—	—	—	—
(3) Embedded Ties	.67	.34	-.02	-.04	—	—	—	—	—	—	—	—
(4) Board Members	.47	1.32	.18	.13	.05	—	—	—	—	—	—	—
(5) Relational Status	336.67	37.57	.48	.35	.09	.07	—	—	—	—	—	—
(6) Age	93.50	34.13	-.02	-.09	.14	.12	-.01	—	—	—	—	—
(7) Firm Size	111.20	52.70	.36	.12	.08	.29	.23	.12	—	—	—	—
(8) Number of Branch Offices	4.81	3.13	.20	-.04	.09	.11	.06	.14	.57	—	—	—
(9) Costs of Goods Sold	63.56	10.21	.62	.68	-.02	.04	.28	-.04	.07	-.11	—	—
(10) Best Lawyers Quality	12.31	13.94	.42	.40	.11	.32	.21	.22	.40	.29	.31	—
(11) Human Capital Quality	.32	.16	.31	.49	.07	.05	.09	.03	.14	-.04	.50	.25
(12) Number of Clients	3.77	3.49	.38	.47	.07	.28	.24	-.01	.49	.15	.36	.58
(13) Number of In-house Counsel	50.88	67.99	.10	.04	-.08	.03	.07	-.05	-.05	-.06	.11	.01
(14) Average Bank Assets	32.21	37.43	.28	.31	.03	-.08	.10	-.05	.02	.04	.30	.11
(15) Average Corporate Revenue	8.24	12.15	.09	.09	.07	.10	.09	.05	.19	.05	.11	.19
(16) Banking Law	.03	.17	.12	.10	.03	.00	.07	.07	.01	-.03	.14	.02
(17) Commodities/Securities Law	.35	.48	.09	.10	.01	.00	.06	.02	.03	.04	.13	.07
(18) Litigation	.58	.49	.09	.00	-.07	-.05	.11	-.05	.06	-.03	.02	-.03
(19) Labor Law	.03	.17	.00	.04	-.09	.00	-.03	-.01	-.06	-.08	.09	.04
(20) Tax Law	.01	.08	.07	.01	.01	.03	.05	-.04	.19	.03	.01	-.01
(21) Law Firm Demand	.03	.08	-.14	-.13	-.08	-.01	-.08	.06	.05	-.07	-.09	.03
(22) East Coast	.35	.48	.29	.32	.08	-.16	.17	.25	-.25	-.09	.34	.10
(23) Midwest	.24	.43	-.17	-.28	.11	.05	.02	.01	.30	.11	-.07	-.06
(24) West Coast	.12	.33	-.02	.09	-.09	.06	-.13	-.11	-.03	.13	-.02	-.11
(25) Major City	.50	.50	.51	.56	-.05	-.01	.21	-.20	.08	-.07	.68	.06
(26) 1990	.18	.39	-.07	-.02	.13	-.01	-.10	-.01	-.07	-.10	.03	-.07
(27) 1991	.20	.40	-.06	-.03	.23	.06	.00	-.01	-.06	-.04	-.02	-.08
(28) 1993	.12	.33	.03	.05	-.23	.05	.02	.03	.03	.07	-.05	.06
(29) 1994	.15	.36	.06	-.05	.03	-.01	.10	.06	.10	.10	-.03	-.03
(30) 1995	.14	.35	.25	.16	.02	-.05	.37	-.01	.17	.10	.04	.14

(Continued below.)

Table 1: Summary Statistics and Correlations (continued)

	Mean	SD	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
(1) Firm Partner Price	258.18	49.01	—	—	—	—	—	—	—	—	—	—
(2) Firm Associate Price	136.43	26.96	—	—	—	—	—	—	—	—	—	—
(3) Embedded Ties	.67	.34	—	—	—	—	—	—	—	—	—	—
(4) Board Members	.47	1.32	—	—	—	—	—	—	—	—	—	—
(5) Relational Status	336.67	37.57	—	—	—	—	—	—	—	—	—	—
(6) Age	93.50	34.13	—	—	—	—	—	—	—	—	—	—
(7) Firm Size	111.20	52.70	—	—	—	—	—	—	—	—	—	—
(8) Number of Branch Offices	4.81	3.13	—	—	—	—	—	—	—	—	—	—
(9) Costs of Goods Sold	63.56	10.21	—	—	—	—	—	—	—	—	—	—
(10) Best Lawyers Quality	12.31	13.94	—	—	—	—	—	—	—	—	—	—
(11) Human Capital Quality	.32	.16	—	—	—	—	—	—	—	—	—	—
(12) Number of Clients	3.77	3.49	.30	—	—	—	—	—	—	—	—	—
(13) Number of In-house Counsel	50.88	67.99	-.01	.08	—	—	—	—	—	—	—	—
(14) Average Bank Assets	32.21	37.43	.12	.15	.30	—	—	—	—	—	—	—
(15) Average Corporate Revenue	8.24	12.15	.10	.29	.22	.02	—	—	—	—	—	—
(16) Banking Law	.03	.17	.11	-.01	-.02	.11	-.02	—	—	—	—	—
(17) Commodities/Securities Law	.35	.48	.12	.05	-.08	.13	-.08	.04	—	—	—	—
(18) Litigation	.58	.49	-.02	-.02	.00	.04	.01	.05	.33	—	—	—
(19) Labor Law	.03	.17	.04	-.03	-.05	-.08	.05	-.03	.07	.09	—	—
(20) Tax Law	.01	.08	.01	.07	.00	-.04	.02	-.01	.02	.06	-.01	—
(21) Law Firm Demand	.03	.08	-.01	-.01	.08	-.09	.04	-.06	.07	.06	.01	.03
(22) East Coast	.35	.48	.09	-.03	.14	.12	-.09	.07	.09	.01	.07	-.06
(23) Midwest	.24	.43	.14	.04	-.12	-.17	.12	.01	-.03	.03	.01	.04
(24) West Coast	.12	.33	.19	-.06	.01	-.03	.02	-.07	.02	.00	-.07	-.03
(25) Major City	.50	.50	.30	.29	.18	.27	.03	.12	.06	.02	.05	.00
(26) 1990	.18	.39	.02	-.05	-.07	-.07	-.04	.25	.18	.19	.00	-.04
(27) 1991	.20	.40	-.02	-.02	.03	-.10	.02	-.09	-.37	-.59	-.09	-.04
(28) 1993	.12	.33	-.03	.04	.03	-.03	-.05	-.02	.10	.08	.08	-.03
(29) 1994	.15	.36	.00	-.04	.00	.06	.04	-.03	-.03	.16	-.03	.08
(30) 1995	.14	.35	-.01	.10	.05	.27	.07	-.03	.03	.22	-.03	.08

(Continued on next page.)

Table 1: Summary Statistics and Correlations (continued)

	Mean	SD	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)
(1) Firm Partner Price	258.18	49.01	—	—	—	—	—	—	—	—	—
(2) Firm Associate Price	136.43	26.96	—	—	—	—	—	—	—	—	—
(3) Embedded Ties	.67	.34	—	—	—	—	—	—	—	—	—
(4) Board Members	.47	1.32	—	—	—	—	—	—	—	—	—
(5) Relational Status	336.67	37.57	—	—	—	—	—	—	—	—	—
(6) Age	93.50	34.13	—	—	—	—	—	—	—	—	—
(7) Firm Size	111.20	52.70	—	—	—	—	—	—	—	—	—
(8) Number of Branch Offices	4.81	3.13	—	—	—	—	—	—	—	-.13	—
(9) Costs of Goods Sold	63.56	10.21	—	—	—	—	—	—	—	—	—
(10) Best Lawyers Quality	12.31	13.94	—	—	—	—	—	—	—	—	—
(11) Human Capital Quality	.32	.16	—	—	—	—	—	—	—	—	—
(12) Number of Clients	3.77	3.49	—	—	—	—	—	—	—	—	—
(13) Number of In-house Counsel	50.88	67.99	—	—	—	—	—	—	—	—	—
(14) Average Bank Assets	32.21	37.43	—	—	—	—	—	—	—	—	—
(15) Average Corporate Revenue	8.24	12.15	—	—	—	—	—	—	—	—	—
(16) Banking Law	.03	.17	—	—	—	—	—	—	—	—	—
(17) Commodities/Securities Law	.35	.48	—	—	—	—	—	—	—	—	—
(18) Litigation	.58	.49	—	—	—	—	—	—	—	—	—
(19) Labor Law	.03	.17	—	—	—	—	—	—	—	—	-.17
(20) Tax Law	.01	.08	—	—	—	—	—	—	—	—	—
(21) Law Firm Demand	.03	.08	—	—	—	—	—	—	—	—	—
(22) East Coast	.35	.48	-.03	—	—	—	—	—	—	—	-.08
(23) Midwest	.24	.43	.06	-.42	—	—	—	—	—	—	—
(24) West Coast	.12	.33	-.10	-.27	-.21	—	—	—	—	—	—
(25) Major City	.50	.50	-.13	.29	-.14	.14	—	—	—	—	—
(26) 1990	.18	.39	-.08	.04	-.03	.03	.01	—	—	—	—
(27) 1991	.20	.40	-.17	.02	.03	-.02	.01	-.24	—	—	—
(28) 1993	.12	.33	-.13	-.07	.01	.02	.02	-.17	-.19	—	—
(29) 1994	.15	.36	-.07	-.05	.06	-.06	-.09	-.20	-.21	-.15	—
(30) 1995	.14	.35	.14	-.03	.00	-.05	.02	-.19	-.21	-.15	-.17

Table 2. T-Tests of Mean Partner Price Differences by Practice Area Market Niche and Regional Location of Main Office

Area of Practice ^a	% of Total Practice	Mean Price	t Statistic
Banking Law	<20	257.16	2.181*
	>20	289.73	
Corporate/Securities Law	<20	255.01	1.664*
	>20	264.13	
Litigation	<20	253.20	1.600
	>20	261.68	
Labor Law	<20	258.19	.031
	>20	257.73	
Tax Law	<20	257.91	...
	>20	...	
Region ^b	Main Office Location		
South	Rest of Country	262.30	2.530*
	South	247.70	
Midwest	Rest of Country	262.94	3.240**
	Midwest	243.50	
West Coast	Rest of Country	258.50	.326
	West Coast	255.90	
East Coast	Rest of Country	247.66	5.716**
	East Coast	277.68	
Major City	Rest of Country	233.48	11.131**
	In Major City	286.59	

* $p < .05$, ** $p < .01$

^a The t-tests are one-tailed and indicate that litigation, banking law, and corporate/securities law have higher firm level prices, but there is no significant difference for firms with a substantial practice in labor law.

^b For the t-test for region, the tests are two-tailed and test if two means was different, but did not test for a specific direction.

Law firms typically price their routine and complex work at different hourly rates. However, these prices adjust to the level of supply, demand, and competition in legal specialties and regions. To control for the structure of the market facing large law firms, we included a number of market controls, including region, whether or not the firm was located in a major city, and which areas of practice the firm specializes in. We conducted a number of t-tests to determine if these factors had a significant impact on the prices charged

by law firms. The means by value of the independent variable and t-tests are shown in Appendix Table 1.

To control for the natural price variation in a market with segmented specializations, we classified firms by the percentage of legal work they do in key practice areas. The first four t-tests were calculated on firms that have a substantial practice (>20%) in an area of law; only two firms reported doing more than 20% of their business in the area of tax law so the test was omitted due to small sample size.

Table 3. Test for Sample Selection Bias: Comparison of Analytical Sample to NLJ 250

	Sample used in Study	NLJ 250 Sample
Partners (n)	111	106
Associates (n)	152	150
Region		
East Coast	35%	35%
West Coast	12%	17%
Midwest	24%	25%
South	28%	24%
Major City	50%	58%
Number of Offices	6.0	6.7
Average Starting Salary of Associates	\$63,563	\$66,812
Average Size of Client's In-house Legal Departments	51	46

In constructing our sample, we needed at least two observations on each firm to construct our time-series variables. Some firms in the NLJ data had only one observation (i.e., they were sampled once by the NLJ over our time period (1989 to 1995). To test whether the exclusion of cases in this way introduces sampling

bias, we compared our sample with the full NLJ 250 sample to determine if our sample was substantively different on these key dimensions for the same time period. Appendix Table 3 presents the mean from our sample and the full NLJ 250 sample.

Table 4. Interval Random Effects Regression on High-end and Low-end Prices

Independent Variables	Partner Price		Associate Price	
Embeddedness Measures				
Embedded ties	-13.411***	(3.771)	-8.999***	(2.026)
Board ties	4.070 ***	(.760)	5.883***	(.169)
Law firm relational status	.398 ***	(.081)	.014	(.017)
Firm Characteristics				
Human capital quality	60.706***	(10.935)	-13.364*	(6.379)
Best lawyer quality index	.550**	(.187)	.013	(.048)
Cost of goods sold	.323	(.336)	1.218***	(.085)
Size	.073	(.074)	.217***	(.018)
Number of branches	-1.416*	(.569)	-.743***	(.187)
Age	-.074	(.066)	-.059**	(.018)
Client Characteristics				
Number of in-house counsel	-.027	(.018)	.127***	(.008)
Number of Clients	3.332***	(.526)	-1.740***	(.235)
Average Bank Assets	.285***	(.045)	-.173***	(.015)
Average Corporate Revenues	-.173	(.099)	.345***	(.026)
Market Controls				
Banking Law	8.297	(5.223)	31.774***	(1.848)
Commercial/Securities Law	-2.175	(3.649)	14.347***	(1.568)
Litigation	15.585***	(4.376)	2.614***	(.877)
Labor Law	-10.998**	(3.167)	-2.398	(1.423)
Tax Law	48.851*	(19.720)	-39.627***	(4.636)
Law Firm Client Demand	-50.239**	(15.307)	.940	(6.315)
East Coast	24.479***	(6.143)	-4.439*	(1.953)
Midwest	-7.761	(5.415)	-8.686***	(1.718)
West Coast	4.051	(4.764)	7.709**	(2.234)
Major City	19.669**	(5.936)	-8.376***	(1.223)
1990	-.441	(5.076)	-2.164	(1.711)
1991	13.661*	(5.977)	.105	(2.582)
1993	-8.421	(6.454)	18.227***	(2.334)
1994	-.325	(6.110)	8.112**	(2.439)
1995	-12.800	(9.135)	12.035***	(3.103)
Constant	28.19	(24.40)	37.14***	(6.43)
N	353		353	
Wald χ^2	5552.35***		75289.91***	

* $p < .05$, ** $p < .01$, *** $p < .001$ (All hypothesis tests are one-tailed, other tests two-tailed.)

In the analyses presented in the paper, we used the mean hourly price charged by the law firm for both partners and associates. This mean value was constructed from the high and low rates charged by law firms. To validate the use of the mean value, we ran an interval regression, which assumes that the true mean value charged by the firm lies somewhere between the extreme ranges, but makes no assumption about its absolute value. These regressions are presented in Appendix Table 4. Overall, the results of this regression were consistent with the results presented in the paper. The general pattern of results mirrors that of the

regressions presented in the paper. The regressions used in the paper are preferable because their interpretation is more straightforward and it allows easier comparison across models in a seemingly unrelated regression. Furthermore, the interval regression does not make any assumptions about the distribution of the real value between the two extremes. We feel that the true value is likely closer to the center point of the high and low end price, because the rates charged by law firms is more likely to follow a normal distribution than a flat distribution, as in the interval regression.

Table 5. Multimethod Multitrait Matrix Test of Validity of Quality Measure: Comparison of Mean Best Lawyer Rating by Corporate Scorecard Measure of Experience, 1993-1995

	Top 25 Firms	Other Firms	t Statistic
1993	28.98	11.58	4.77***
1994	26.09	11.00	4.35***
1995	27.38	14.88	3.52***

*** $p < .001$

Because both of our measures of law firm quality are perceptual, we attempted to validate them with a behavioral measure of law firm quality. Our behavioral measure of law firm quality comes from the *American Lawyer Corporate Scorecard*. The *Corporate Scorecard* collects annual data on corporate law firms' deals by volume and size in the key mega firm practice areas of litigation, commercial/securities law, banking, and tax. These data are considered a behavioral measure of law firm quality because competitive market pressures and client feedback should reward high quality firms with the most deals, especially over time as law firms gain competencies in proportion to the amount of work they competitively win (Lazega 2001). The data are limited however to the top 25 law firms in each practice area in each year. Thus, although the longitudinal nature of the behavioral performance data provides many advantages for examining the agreement between our perceptual measures of quality and actual performance at multiple points in time they provide too small a sample to be used in the regressions reported in the paper.

We used Benjamin and Podolny's (1999) method to provide a confirmatory check on our quality measures. Their method establishes validation by statistically testing for agreement and disagreement among related and unrelated measures. In their study of the association of wine status and quality, they looked for agreement between a wine's appellation status score and the ratings of seven wine experts for a sub-sample of wines for one of the 16 years covered in their analysis. In this sense, their method is not meant to provide the same level of rigorous validation possible with more complete data but it does provide a useful confirmatory check when the results are consistent with other tests. We have an analogous situation in terms of available data with the added advantage of being capable of examining agreement over multiple time periods rather than just one period.

First, we tested whether the top firms of the *Scorecard* performance measure were rated among the top firms by our *Best Lawyers* quality measure. From the scorecard data, we created a binary variable set to one if a law firm was on one of the top 25 lists, zero otherwise. We then computed a mean best-lawyers quality score for the law firms in the one and zero groups. In 1993, 1994, and 1995, firms in a top 25 list had an average best-lawyers quality rating of 28.98, 26.09, and 27.38, versus quality ratings of 11.58, 11.00, and 14.88 for firms that were not on any list. The differences between all of these means were significant at $p < .001$ (see table A5). Thus, firms rated highly by our best-lawyers measure were also significantly more likely to be at the top of the scorecard lists, a finding consistent with our measure of quality being valid.

Second, we examined the Kappa interrater reliability between the best-lawyers and scorecard measures. We separated the best-lawyers quality measure at its median and split our scorecard measure it

its median. We created two separate binary variables (one if the firm was above the median and zero if the firm was below the median). Despite the small sample, the Kappa test showed that the two measures agree in 65.38% of cases, a rating of "substantial agreement" according to Kappa test statistics.

Third, we examined the best-lawyers and scorecard measures for a positive trend using a Cumulative Sum Test for a linear trend across an ordinal variable. (This test is the running sum of the proportion of ones in the sample minus the value of the indicator variable.) This test enables us to test whether the likelihood of being in the top 25 corporate scorecard lists versus out of them is positively associated with our best-lawyers quality measure. The cusum test statistic was 31.97 ($p < .0001$). Consistent with our earlier findings, this indicates that the probability that a firm is in one of the top corporate scorecard lists increases as its quality rating increases. To test the opposite relationship—that levels of quality increase as experience increases—we conducted a Wilcoxon rank-sum test for a trend across ordered categories, which yielded a significant different ($p < .0001$), adding further confirmation that our perceptual ratings of quality reflect actual behavior.

Fourth, if we are correct about the validity of our best-lawyers measure, our measure of human capital should also be associated with our best-lawyers measure and scorecard measure because these are all cognate measures. Using the same t-tests and cusum methods described above, we found that human capital was positively related with our scorecard measure ($p < .001$). Also, human capital and best-lawyers quality ratings were positively related and statistically significant. This suggests the best lawyers and human capital measures of quality are in agreement, but that they operationalize different dimensions of a multidimensional construct. Consequently, to control for both dimensions, we include best lawyers and human capital quality measures in our regressions.

Finally, if our quality measure is valid and reliable, our status measure should *not* be strongly correlated with our scorecard, best lawyers, or human capital quality measures. Using the same test criteria used above, we found a positive but non-significant relationship between our status measure of social standing and our three measures of human capital, best lawyers, and scorecard quality.

Thus we believe that the cross-sectional and longitudinal tests of agreement provide strong support for the validity of our quality measures—all tests were consistent with expectations of validation and statistically significant. Moreover, if there is some measurement error, this only makes our tests more conservative rather than less. Consequently, if our quality measures do reach significance it suggests that our measures are acceptable in operationalizing different but related dimensions of quality, and do not measure status.

Table 6. R² of Embeddedness Variables When Added First to Models

When added first to our models, our three embeddedness measures (embedded ties, board memberships, and relational status) have an R² of .2491 for the model with partner price as the dependent variable and an R² of .1789 in the model of associate price.

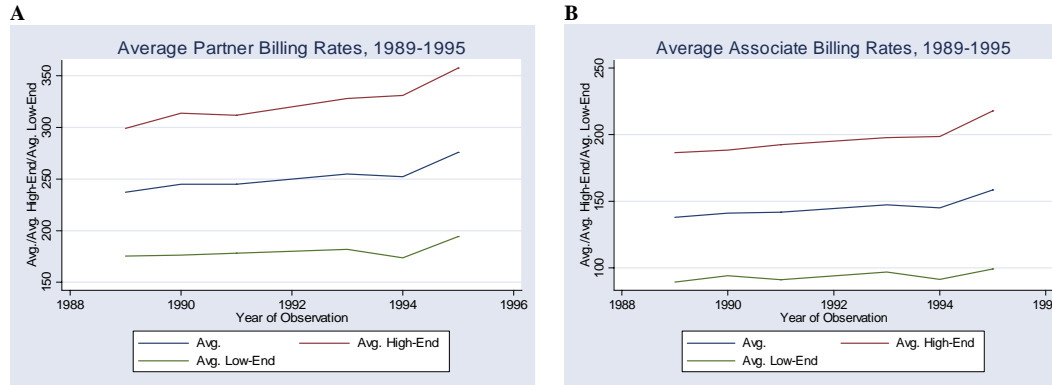


Figure 1. Is the Market Changing?

One concern is that the market for legal services is changing, with increased price competition that would decrease the effects of social structural factors. A number of factors might account for shifts in the effects presented in the paper, including increased price competition, period effects due to a changing economy, and that corporations are using more law firms which increases competition for contracts. We conducted a number of post hoc tests to determine if any of these affected our results. In our data, we find little evidence of price competition. As Figures 1A and B show, the average hourly rates charged by both partners and associates were steadily increasing over our analysis period. Price competition might have been a factor, but if it is operative, it did not stop price increases, merely slowing them. Furthermore, we find weak period effects if we split our sample in half (1989 to 1991, 1993 to 1995). For partners, there is no effect for the dummy variable which assesses period effects ($p = .214$), while for associate billing rates, it is mildly significant ($p = .025$).

The significance of period effects in the associate model, where associates were billing at a higher average rate in the later period, is most likely to do with extensions in the time-to-partner and the use of “permanent associates” (associates who have no chance of making partner, but remain in the firm) who are doing more high-end work that can be charged at higher rates. Finally, we find no effects for interacting this period effect with any of our three main independent variables (embedded ties, board memberships, and relational status), while our main effects remain significant, and in a cross-model test of the equivalence of coefficients, none of these coefficients were significantly different at $p < .05$. Furthermore, we found no evidence that corporate clients were more likely to sever relations with law firms. Instead, corporate clients are using a larger number of law firms to handle their legal work, while maintaining their core set of long-term relations with a few legal providers.