

**AJAE APPENDIX: MERGERS AND ACQUISITIONS AND PRODUCTIVITY IN
THE U.S. MEAT PRODUCTS INDUSTRIES: EVIDENCE
FROM THE MICRO DATA**

by

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Table 1: Average Initial Relative Labor Productivity (RLP82): 1982 – 92.

Type of Plants	Meat Packing		Prepared Meat Products		Poultry Slaughter and Processing	
	Number of plants	RLP82	Number of plants	RLP82	Number of plants	RLP82
Acquired plants (1982-87)	226	1.5024	353	1.1352	316	0.9539
Kept in 1992	145	1.5552	195	1.1705	191	0.9903
Sold by 1992	21	1.1329	60	1.0035	43	0.8234
Closed by 1992	60	1.5934	98	1.1456	82	0.9377
Buying firms' plants (1982)	315	1.6308	580	1.4940	560	1.1227
Kept in 1992	195	2.1961	276	1.6947	271	1.3092
Sold before 1992	33	1.6588	103	1.4896	83	0.9583
Closed by 1992	87	1.6670	202	1.2146	206	0.7786
Non-buying firm's plants (1982)	1,326	0.7646	1,155	0.7134	359	0.8518
Kept in 1992	541	0.7691	598	0.6913	180	0.8549
Sold before 1992	(D)	1.8034	(D)	1.2392	(D)	0.8668
Closed by 1992	(D)	0.7248	(D)	0.7528	(D)	0.8061
All Plants	1,867	1.0000	2,088	1.0000	1,235	1.0000

Source: These averages were calculated by the authors, using data from the Longitudinal Research Database of the U.S. Bureau of the Census.

Table 2: Probit Regressions of Acquisitions over 1977-82 and 1982-87^a

	Meat Packing		Prepared Meat Products		Poultry Slaughter & Processing	
	1977-82	1982-87	1977-82	1982-87	1977-82	1982-87
Intercept	-2.417 (116.13)	-2.293** (102.27)	-3.312** (293.67)	-2.267** (99.76)	-2.773** (137.63)	-2.486** (116.45)
Log(P)	0.568** (41.68)	0.634** (36.82)	0.288** (15.08)	0.623** (34.52)	0.788* (3.76)	0.139** (1.55)
Log(S)	0.227** (439.63)	0.235** (369.10)	0.273** (830.35)	0.231** (349.90)	0.268** (646.28)	0.254** (462.06)
Log(SR)	-0.040 (0.73)	-0.067 (2.04)	0.181** (19.46)	-0.068 (2.09)	0.110* (4.98)	0.073+ (2.34)
OM	0.845** (477.19)	0.854** (469.56)	0.521** (227.14)	0.850** (464.28)	0.689** (343.02)	0.614** (277.48)
NF	0.812 (295.86)	0.807** (281.66)	0.501** (142.85)	0.850** (279.50)	0.335** (54.16)	0.324** (49.00)
MULTI	0.331** (43.41)	0.271** (27.45)	0.209 (22.65)	0.276** (28.28)	0.001 (0.00)	-0.029 (0.33)
Log(P)•Log(S)	-0.054** (9.64)	-0.064** (9.98)	0.036* (5.14)	-0.062** (9.07)	0.041* (4.98)	0.058** (8.82)
Log(P)•OM	-0.310** (32.04)	-0.336** (35.35)	-0.392** (64.46)	0.332** (34.52)	-0.275** (18.73)	-0.269** (17.89)
Log(P)•NF	-0.173** (5.79)	-0.181** (6.15)	-0.686** (93.74)	-0.177** (5.87)	-0.909** (119.44)	-0.906** (115.59)
N	1,867	1,336	2,078	1,295	1,207	1,067

Note: +, *, ** denote “significant” at the 10, 5 and 1 percent level, respectively.

^a Truncated sample; χ^2 in parentheses.

Table A.3 The Probability of Being Acquired by Plant Size and Productivity in the Prepared Meat Products Industry.^a

Percentile and value of relative labor productivity for 1977 and 1982	-----Percentile of Plant Employment-----						Mean
	10	25	50	75	90	95	
	-----Number of Plant Employees 1977 and 1982-----						
	2	7	32	94	258	420	105
	4	12	36	114	337	561	130
	-----Probability of being acquired in percentages-----						
10 percentile							
1977: 0.413	0.35	0.87	2.29	4.21	7.04	8.85	4.47
1982: 0.352	0.89	2.12	4.57	9.17	16.01	20.17	9.87
25 percentile							
1977: 0.619	0.52	1.15	3.12	5.79	9.66	12.12	6.14
1982: 0.529	1.15	2.57	5.22	9.98	16.80	20.86	10.69
50 percentile							
1977: 0.892	0.56	1.48	4.08	7.60	12.63	15.77	8.06
1982: 0.882	1.57	3.23	6.15	11.07	17.83	21.76	11.79
75 percentile							
1977: 1.059	0.62	1.65	4.59	8.55	14.17	17.64	9.06
1982: 1.335	2.00	3.88	6.99	12.02	18.69	22.50	12.74
90 percentile							
1977: 1.505	0.76	2.07	5.83	10.83	17.79	22.01	11.48
1982: 1.978	2.50	4.58	7.87	12.97	19.53	23.21	13.68
95 percentile							
1977: 1.877	0.86	2.38	6.73	12.47	20.34	25.04	13.20
1982: 2.558	2.88	5.09	8.48	13.62	20.09	23.69	14.33
Mean							
1977: 0.947	0.58	1.53	4.25	7.91	13.13	16.38	8.38
1982: 1.055	1.74	3.50	6.50	11.48	18.20	22.07	12.19

^a Probability estimates are based on the parameter estimates of the non-linear probit model.

Table A.4: The Probability of Being Acquired by Plant Size and Productivity in the Poultry Slaughter and Processing Industry.^a

Percentile and value of relative labor productivity for 1977 and 1982	-----Percentile of Plant Employment-----						Mean
	10	25	50	75	90	95	
	-----Number of Plant Employees 1977 and 1982-----						
	7	22	73	227	475	739	189
	8	26	88	253	547	853	223
	-----Probability of being acquired in percentages-----						
10 percentile							
1977: 0.564	1.06	2.28	4.63	8.38	11.80	14.28	7.64
1982: 0.553	1.62	3.62	7.11	12.90	18.26	21.38	12.13
25 percentile							
1977: 0.818	1.37	2.99	6.12	11.05	15.47	18.62	10.08
1982: 0.820	3.12	6.21	10.99	18.16	24.31	27.75	17.24
50 percentile							
1977: 1.037	1.60	3.53	7.25	13.03	18.15	21.77	11.91
1982: 1.157	5.25	9.49	15.43	23.69	30.35	33.95	22.66
75 percentile							
1977: 1.514	2.05	4.56	9.37	16.70	23.02	27.38	15.29
1982: 1.617	8.28	13.70	20.76	29.85	36.79	40.44	28.76
90 percentile							
1977: 2.268	2.63	5.91	12.11	21.28	28.93	34.08	19.54
1982: 2.369	13.18	19.94	28.02	37.66	44.63	48.18	36.54
95 percentile							
1977: 2.964	3.09	6.96	14.21	24.68	33.21	38.82	22.72
1982: 3.193	18.19	25.83	34.44	41.16	50.92	54.29	43.05
Mean							
1977: 1.268	1.84	4.08	8.44	15.04	20.84	24.87	13.76
1982: 1.358	6.57	11.36	17.86	26.55	33.38	37.02	25.45

^aProbability estimates are based on the parameter estimates of the non-linear probit model.

Table A5. Productivity Growth Regressions over 1977-87 and 1982-92.^a

Variables	Meat Packing		Prepared Meat Products		Poultry Slaughter & Processing	
	1977-87	1982-92	1977-87	1982-92	1977-87	1982-92
Intercept	-0.562** (12.23)	-0.592** (7.47)	-0.661* (5.50)	-0.226* (3.34)	0.307** (2.58)	0.059 (0.51)
Log (P)	-0.822** (14.25)	0.420* (5.54)	-1.173** (7.73)	-0.714* (10.84)	0.114 (0.90)	0.211* (1.96)
Log (S)	0.111** (7.38)	0.099** (4.54)	0.127** (3.83)	0.026 (1.28)	-0.068** (2.41)	-0.007 (0.029)
Pr(AC)	0.964** (3.77)	0.665** (1.46)	2.285** (3.35)	0.372 (0.82)	-0.621 (1.44)	0.034 (0.08)
$\Delta(K/Q)$	-0.435** (6.48)	-0.572** (8.84)	0.493** (6.19)	-0.529 (8.24)	-0.581** (7.33)	-0.544** (7.47)
$\Delta(NW/PW)$	-0.114** (3.83)	0.040 (1.80)	-0.090** (3.16)	0.006 (0.27)	-0.087* (2.13)	0.002 (0.08)
Age2	-0.080* (2.19)	-0.033 (0.68)	-0.010 (0.20)	-0.042 (1.07)	-0.010 (0.19)	-0.061 (1.11)
Age3	----	0.071 (1.21)	---	-0.059 (1.30)	----	0.099 (1.48)
MULTI	0.077 (1.36)	0.182** (2.65)	0.088 (1.49)	0.108* (2.00)	-0.041 (0.69)	-0.006 (0.09)
O	0.551** (3.82)	0.026 (0.15)	-0.074 (0.21)	-0.010 (0.07)	0.225 (1.45)	-0.339** (2.55)
OM	0.092 (1.38)	0.224** (2.93)	-0.000 (0.00)	0.225** (3.59)	-0.055 (0.87)	-0.210** (3.79)
NF	-0.066 (0.85)	-0.038 (0.41)	0.142 (1.00)	0.009 (0.12)	-0.152 (1.78)	-0.021 (0.32)
Log (P)•Log(S)	0.114** (7.43)	0.014 (0.81)	0.164** (4.40)	-0.075** (5.00)	-0.114** (4.11)	-0.030 (1.31)
Pr (AC)•Log(S)	-0.200** (4.12)	-0.166* (1.20)	-0.421** (3.45)	-0.082 (1.16)	-0.116** (4.21)	-0.060 (0.09)
Log (S) • O	-0.107** (3.69)	-0.014 (0.42)	-0.013 (0.20)	-0.010 (0.36)	0.177** (2.19)	0.058** (2.30)
R-square	0.35	0.23	0.33	0.36	0.32	0.24
N	923	844	658	1,036	555	610

Note: * and ** denote “significant” at the 5% and 1% level, respectively.

^a Whole sample, includes all plants; t-statistics in parentheses.