**Online Appendix**

**Appendix Tables**

APPENDIX TABLE 1

VARIABLE DEFINITIONS AND SOURCES

|  |  |  |
| --- | --- | --- |
| Variable | Description | Data sources |
|  |  |  |
| *Ownership variables* |  |  |
| Director ownership | Percentage of capital controlled by all directors | IFSY |
| Directors > 1/3 | Binary variable which = 1 if directors own more than 1/3 of capital, 0 otherwise | IFSY |
| Directors > 1/2 | Binary variable which = 1 if directors own more than 1/3 of capital, 0 otherwise | IFSY |
| No. of shareholders | Natural logarithm of number of shareholders | IFSY |
| *Biographical details of managers* |  |  |
| Peer | Binary variable which = 1 if chairman is a peer, 0 otherwise | SEY |
| Knight | Binary variable which = 1 if chairman is a ‘Sir’, 0 otherwise | SEY |
| Age | Age (years) of chairman | Bassett (1912) |
| Number of other directorships | Number of other company directorships held by chairman | Bassett (1912) |
| Number of other chairmanships | Number of other company chairmanships held by chairman | Bassett (1912) |
| Directorship in same industry | Binary variable which = 1 if chairman is a director of another company in the same industry | Bassett (1912) |
| Banking director | Binary variable which = 1 if chairman is a director of a bank | Bassett (1912) |
| Club membership | Binary variable which = 1 if chairman is a member of a club, 0 otherwise | Bassett (1912) |
| Military officer | Binary variable which = 1 if chairman was an officer in the military, 0 otherwise | Bassett (1912) |
| Elite private school | Binary variable which = 1 if chairman attended an elite private school, 0 otherwise | Bassett (1912) |
| University degree | Binary variable which = 1 if chairman attended university or a proto-university, 0 otherwise | Bassett (1912) |
| Oxbridge degree | Binary variable which = 1 if chairman attended university, 0 otherwise | Bassett (1912) |
| MP | Binary variable which = 1 if chairman was or had been an MP, 0 otherwise | Bassett (1912) |
| Accountant | Binary variable which = 1 if chairman was or had worked as an accountant, 0 otherwise | Bassett (1912) |
| Engineer | Binary variable which = 1 if chairman was or had worked as an engineer, 0 otherwise | Bassett (1912) |
| Lawyer | Binary variable which = 1 if chairman was or had been a lawyer, 0 otherwise | Bassett (1912) |
| Banker | Binary variable which = 1 if chairman was or had been a banker, 0 otherwise | Bassett (1912) |
| Merchant | Binary variable which = 1 if chairman was or had been a merchant, 0 otherwise | Bassett (1912) |
| Business experience | Binary variable which = 1 if chairman was or had worked as an accountant, engineer, lawyer, banker, or merchant, 0 otherwise | Bassett (1912) |
| Justice of the Peace / Deputy Lieutenant | Binary variable which = 1 if chairman was a JP or DL, 0 otherwise | Bassett (1912) |
| *Performance data* |  |  |
| Return on assets | Profits / Total Assets | IFSY |
| Tobin’s Q | [Market value of equity + Book value of preference shares + Book value of debentures] / Total assets | IMM, SEY, IFSY |
| Dividend yield | Dividend yield for 1911 | IMM |
|  |  |  |
| Time to failure ≥ 10 years | Binary variable which = 1 if firm failed after 10 years, 0 otherwise | RDC |
| Time to failure ≥ 30 years | Binary variable which = 1 if firm failed after 30 years, 0 otherwise | RDC |
| *Company variables* |  |  |
| Family firm | Binary variable which = 1 if a director’s surname is also in company name | SEY |
| Foreign | Binary variable which = 1 if company’s main operations are based outside UK | IFSY |
| Size | Natural logarithm of total assets | IFSY |
| Firm age | Natural logarithm of company age | SEY |
| Leverage | Ratio of book value of debentures to total assets | SEY, IFSY |
| Industry dummies | Industry as reported in *Stock Exchange Yearbook* and Bassett (1912) | SEY, Bassett (1912) |
| Registered | Binary variable = 1 if company is registered under the Companies Act, 0 otherwise | SEY |
| London market | Binary variable which = 1 if traded on London stock exchange, 0 otherwise | SEY |
| Official List | Binary variable =1 if company is on the official list of the stock exchange, 0 otherwise | SEY |
| Number of markets | Binary variable = 1 if company’s securities are traded on more than one stock exchange, 0 otherwise | IMM |
| Board size | Natural logarithm of number of directors on board | SEY |
| MPs on board | Natural logarithm of number of directors who are MPs | SEY |
| Peers on board | Natural logarithm of number of directors who are peers | SEY |
| One vote per share | Binary variable = 1 if company’s voting scheme for ordinary shares is one vote per share, 0 otherwise | SEY |
| Multiple votes | Binary variable = 1 if company’s voting scheme for ordinary shares is one vote per X shares (where X>1) | SEY |
| Pref. share vote | Binary variable = 1 if company’s voting scheme gives same voting rights to preference and ordinary shares. | SEY |

*Sources*: IMM – *Investor’s Monthly Manual*, IFSY – *The Investor’s Four Shilling Yearbook*; RDC – Register of Defunct Companies; SEY – *Stock Exchange Yearbook*. An elite private school is defined as a school under the Public Schools Act of 1868 (31 & 32 Vict. C.118): the seven schools were Charterhouse, Eton, Harrow, Rugby, Shrewsbury, Westminster, and Winchester. Proto-universities includes institutions such as Owens College (Manchester), the Royal College of Science, and the Royal College of Mines.

APPENDIX TABLE 2

DIRECTOR OWNERSHIP BY INDUSTRY

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Industry | *N* | Director ownership (%) | Directors own more than 1/3 (%) | Directors own more than 1/2 (%) |
| Railways | 52 | 3.7 | 1.9 | 1.9 |
| Gas, Water & Electricity | 62 | 5.0 | 0.0 | 0.0 |
| Tramway & Omnibus | 41 | 6.7 | 2.4 | 0.0 |
| Plantations | 58 | 7.6 | 0.0 | 0.0 |
| Telegraph & Telephone | 30 | 7.9 | 6.7 | 6.7 |
| Investment Trusts | 180 | 12.2 | 8.9 | 4.4 |
| Iron, Coal & Steel | 117 | 14.1 | 9.4 | 3.4 |
| Storage | 27 | 15.1 | 14.8 | 7.4 |
| Food & Retail | 46 | 16.3 | 19.6 | 2.2 |
| Manufacturing | 317 | 19.1 | 20.8 | 10.4 |
| Miscellaneous | 76 | 19.8 | 19.7 | 11.8 |
| Shipping & Docks | 66 | 21.2 | 22.7 | 9.1 |
| Banks & Insurance | 113 | 21.4 | 23.9 | 11.5 |
| Merchants | 51 | 22.3 | 27.5 | 3.9 |
| Breweries | 231 | 23.4 | 23.8 | 13.9 |
| Paper & Printing | 54 | 26.6 | 33.3 | 14.8 |
| Engineering | 27 | 29.0 | 33.3 | 18.5 |

*Sources*: See text and Appendix Table 1.

*Notes*: See Appendix Table 1 for variable definitions.

APPENDIX TABLE 3

SAMPLE SELECTION BIAS FOR PERFORMANCE MEASURES

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Full sample | |  | Return on assets sample | | |  | Tobin's Q sample | | |  | Dividend yield sample | | |  | Time-to-failure sample | | |
| Variable | *N* | Mean |  | *N* | Mean | *t-statistic* |  | *N* | Mean | *t-statistic* |  | *N* | Mean | *t-statistic* |  | N | Mean | *t-statistic* |
| Director ownership (ln) | 1383 | -2.454 |  | 1259 | -2.508 | 1.06 |  | 591 | -2.847 | 6.561\*\*\* |  | 502 | -2.809 | 5.691\*\*\* |  | 575 | -2.624 | 2.578\*\* |
| Directors own more than 1/3 (0/1) | 1383 | 0.173 |  | 1259 | 0.154 | 1.301 |  | 591 | 0.059 | 8.075\*\*\* |  | 502 | 0.064 | 7.311\*\*\* |  | 575 | 0.120 | 3.115\*\*\* |
| Directors own more than 1/2 (0/1) | 1383 | 0.082 |  | 1259 | 0.070 | 1.147 |  | 591 | 0.017 | 7.133\*\*\* |  | 502 | 0.018 | 6.744\*\*\* |  | 575 | 0.056 | 2.157\*\* |
| Family firm (0/1) | 1383 | 0.268 |  | 1259 | 0.265 | 0.172 |  | 591 | 0.161 | 5.584\*\*\* |  | 502 | 0.171 | 4.7\*\*\* |  | 575 | 0.224 | 2.081\*\* |
| Number of shareholders (ln) | 1383 | 6.372 |  | 1259 | 6.447 | -1.513 |  | 591 | 6.944 | -10.377\*\*\* |  | 502 | 6.961 | -10.282\*\*\* |  | 575 | 6.299 | 1.167 |
| Number of Board members (ln) | 1383 | 1.844 |  | 1259 | 1.838 | 0.464 |  | 591 | 1.894 | -2.927\*\*\* |  | 502 | 1.901 | -3.2\*\*\* |  | 575 | 1.812 | 1.996\*\* |
| Number of MPs on the board (ln) | 1383 | 0.086 |  | 1259 | 0.081 | 0.573 |  | 591 | 0.098 | -0.953 |  | 502 | 0.098 | -0.897 |  | 575 | 0.088 | -0.143 |
| Number of peers on the board (ln) | 1383 | 0.089 |  | 1259 | 0.081 | 0.835 |  | 591 | 0.119 | -1.987\*\* |  | 502 | 0.117 | -1.796\* |  | 575 | 0.084 | 0.372 |
| Multiple votes (0/1) | 1383 | 0.111 |  | 1259 | 0.112 | -0.111 |  | 591 | 0.139 | -1.7\* |  | 502 | 0.143 | -1.844\* |  | 575 | 0.113 | -0.154 |
| Preference share voting rights (0/1) | 1383 | 0.520 |  | 1259 | 0.532 | -0.631 |  | 591 | 0.462 | 2.362\*\* |  | 502 | 0.454 | 2.528\*\* |  | 575 | 0.520 | -0.005 |
| Total assets (ln) | 1383 | 13.189 |  | 1259 | 13.169 | 0.4 |  | 591 | 13.554 | -5.465\*\*\* |  | 502 | 13.598 | -5.743\*\*\* |  | 575 | 13.090 | 1.581 |
| Firm age (ln) | 1383 | 2.862 |  | 1259 | 2.863 | -0.052 |  | 591 | 3.101 | -7.032\*\*\* |  | 502 | 3.125 | -7.464\*\*\* |  | 575 | 2.846 | 0.414 |
| Debentures to total assets | 1383 | 0.200 |  | 1259 | 0.204 | -0.319 |  | 591 | 0.151 | 4.538\*\*\* |  | 502 | 0.140 | 5.557\*\*\* |  | 575 | 0.201 | -0.022 |
| Foreign business activities (0/1) | 1383 | 0.304 |  | 1259 | 0.303 | 0.056 |  | 591 | 0.391 | -3.664\*\*\* |  | 502 | 0.414 | -4.354\*\*\* |  | 575 | 0.337 | -1.416 |
| Official list (0/1) | 1383 | 0.684 |  | 1259 | 0.688 | -0.212 |  | 591 | 0.770 | -4.018\*\*\* |  | 502 | 0.769 | -3.756\*\*\* |  | 575 | 0.689 | -0.203 |
| London market (0/1) | 1383 | 0.432 |  | 1259 | 0.438 | -0.309 |  | 591 | 0.690 | -11.134\*\*\* |  | 502 | 0.689 | -10.471\*\*\* |  | 575 | 0.397 | 1.442 |

*Sources*: See Appendix Table 1 for sources and variable definitions. Continuous (non-ratio) variables are log-transformed. Significance is shown by \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

APPENDIX TABLE 4

REGRESSION RESULTS FOR ALTERNATIVE MEASURES OF DIRECTOR OWNERSHIP AND FIRM PERFORMANCE

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Return on assets | | Tobin’s Q | | Dividend yield | | Time to failure ≥ 10 years | | Time to failure ≥ 30 years | |
|  | OLS | OLS | OLS | OLS | OLS | OLS | Logit | Logit | Logit | Logit |
|  | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) |
| Directors >1/3 | 0.009 |  | 0.234\* |  | 0.008 |  | 0.007 |  | 0.076 |  |
|  | (1.516) |  | (1.667) |  | (0.139) |  | (0.023) |  | (0.209) |  |
| Directors >1/2 |  | 0.021\*\* |  | -0.084 |  | -0.102 |  | 0.345 |  | 0.542 |
|  |  | (2.014) |  | (-0.561) |  | (-0.967) |  | (0.809) |  | (1.200) |
| Observations | 1,259 | 1,259 | 591 | 591 | 502 | 502 | 575 | 575 | 575 | 575 |
| Controls | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Industry fixed effects | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| R-squared | 13% | 13% | 70% | 69% | 24% | 24% | - | - | - | - |
| Adjusted/Pseudo R-squared | 11% | 11% | 68% | 68% | 19% | 19% | 11% | 11% | 12% | 12% |
| Variance decomposition |  |  |  |  |  |  |  |  |  |  |
| Ownership | 0.56% | 1.24% | 0.60% | 0.61% | 0.12% | 0.93% | 0.32% | 1.32% | 0.13% | 1.89% |
| Controls | 64.90% | 64.67% | 62.71% | 63.21% | 36.69% | 36.39% | 32.38% | 32.17% | 30.19% | 29.46% |
| Industry FE | 34.54% | 34.09% | 36.70% | 36.18% | 63.18% | 62.69% | 67.29% | 66.51% | 69.68% | 68.64% |

*Sources*: See Appendix Table 1 for variable definitions and sources. *t-statistics* calculated via robust standard errors are in parentheses. Significance is shown by \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Because Tobin’s Q is highly skewed, we follow the usual practice in the literature of capping it at 10. Logit regressions are reported in odds-ratios

APPENDIX TABLE 5

REGRESSION RESULTS WITH INTERACTION BETWEEN FAMILY FIRMS AND ALTERNATIVE MEASURES OF DIRECTOR OWNERSHIP

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Return on assets | | Tobin’s Q | Dividend yield | Time to failure ≥ 10 years | | Time to failure ≥ 30 years | |
|  | OLS | OLS | OLS | OLS | Logit | Logit | Logit | Logit |
|  | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| Directors >1/3 | 0.004 |  | 0.245 | 0.011 | -0.087 |  | 0.241 |  |
|  | (0.488) |  | (1.573) | (0.175) | (-0.198) |  | (0.450) |  |
| Directors >1/3 x Family firm | 0.011 |  | -0.109 | -0.028 | 0.190 |  | -0.318 |  |
|  | (0.879) |  | (-0.480) | (-0.175) | (0.315) |  | (-0.448) |  |
| Directors >1/2 |  | -0.002 |  |  |  | -0.441 |  | 0.624 |
|  |  | (-0.148) |  |  |  | (-0.664) |  | (0.864) |
| Directors >1/2 x Family firm |  | 0.037\*\* |  |  |  | 1.297 |  | -0.141 |
|  |  | (1.967) |  |  |  | (1.518) |  | (-0.158) |
| Family firm | 0.008 | 0.006 | 0.015 | 0.006 | -0.092 | -0.186 | 0.143 | 0.056 |
|  | (1.534) | (1.327) | (0.319) | (0.128) | (-0.335) | (-0.714) | (0.470) | (0.189) |
| Observations | 1,259 | 1,259 | 591 | 502 | 575 | 575 | 575 | 575 |
| Control variables | YES | YES | YES | YES | YES | YES | YES | YES |
| Industry fixed effects | YES | YES | YES | YES | YES | YES | YES | YES |
| R-squared | 13% | 13% | 70% | 24% |  |  |  |  |
| Adjusted/Pseudo R-squared | 11% | 11% | 68% | 19% | 11% | 12% | 12% | 12% |

*Sources*: See Appendix Table 1 for variable definitions and sources. *t-statistics* calculated via robust standard errors are in parentheses. Significance is shown by \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Because Tobin’s Q is highly skewed, we follow the usual practice in the literature of capping it at 10.

APPENDIX TABLE 6

RELATIONSHIP BETWEEN OWNERSHIP AND PERFORMANCE FOR ONE-SHARE-ONE-VOTE COMPANIES

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Dependent variable | Return on assets | Tobin's Q | Dividend yield | Time to failure ≥ 10 years (logit) |
|  | OLS | OLS | OLS | Logit |
|  | (1) | (2) | (3) | (4) |
| Director ownership | 0.015 | -0.004 | -0.112 | -0.075 |
|  | (0.880) | (-0.020) | (-0.682) | (-0.114) |
| Return on assets |  | 4.553\*\*\* | 0.596\*\* | -2.160 |
|  |  | (9.064) | (2.414) | (-1.623) |
| Family firm | 0.012\*\* | 0.015 | 0.016 | -0.013 |
|  | (2.504) | (0.330) | (0.328) | (-0.047) |
| Number of shareholders | 0.010\*\*\* | 0.153\*\*\* | -0.044 | -0.038 |
|  | (3.339) | (5.404) | (-1.547) | (-0.360) |
| Board size | 0.027\*\* | 0.187\*\* | -0.120 | 0.060 |
|  | (2.304) | (2.143) | (-1.535) | (0.136) |
| MPs on board | 0.022 | -0.036 | 0.069 | -0.998\* |
|  | (0.757) | (-0.454) | (0.932) | (-1.809) |
| Peers on board | 0.056\* | 0.095 | 0.101 | 0.025 |
|  | (1.660) | (0.857) | (1.323) | (0.052) |
| Preference share voting | -0.001 | 0.050 | 0.068\* | -0.013 |
|  | (-0.094) | (1.222) | (1.693) | (-0.056) |
| Size | -0.021\*\*\* | -0.215\*\*\* | -0.033 | -0.066 |
|  | (-4.364) | (-7.086) | (-1.228) | (-0.486) |
| Age | -0.009\*\* | -0.018 | 0.050 | 0.048 |
|  | (-1.992) | (-0.495) | (1.431) | (0.293) |
| Leverage | -0.009 | 0.815\*\*\* | -0.046 | -0.924 |
|  | (-0.577) | (8.793) | (-0.344) | (-1.614) |
| Foreign | 0.019\*\*\* | 0.026 | -0.088 | -0.511\* |
|  | (4.507) | (0.491) | (-1.555) | (-1.817) |
| Official list | -0.003 | -0.072 | 0.084 | -0.096 |
|  | (-0.292) | (-1.205) | (1.324) | (-0.346) |
| London | 0.007 | 0.030 | 0.004 | -0.147 |
|  | (1.074) | (0.549) | (0.073) | (-0.580) |
| Observations | 975 | 419 | 349 | 450 |
| Industry fixed effects | YES | YES | YES | YES |
| R-squared | 13% | 72% | 22% | - |
| Adjusted R-squared/Pseudo R | 11% | 69% | 15% | 10% |
| Variance decomposition |  |  |  |  |
| Ownership | 0.34% | 0.39% | 0.37% | 0.76% |
| Controls | 58.47% | 66.22% | 43.51% | 29.17% |
| Industry FE | 41.19% | 33.40% | 56.12% | 70.08% |

*Sources*: See Appendix Table 1 for sources and variable definitions. *t-statistics* calculated via robust standard errors are in parentheses. Significance is shown by \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Because Tobin’s Q is highly skewed, we follow the usual practice in the literature of capping it at 10. Specification 4 shows the result of a binominal choice model (as in Table 4). The logit regression reports odds-ratios.

APPENDIX TABLE 7

EXAMINING HETEROGENEITY IN THE RELATIONSHIP BETWEEN OWNERSHIP AND PERFORMANCE

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Return on assets | Tobin’s Q | Dividend yield | Time to failure ≥ 10 years | Time to failure ≥ 30 years |
|  | OLS | OLS | OLS | Logit | Logit |
|  | (1) | (2) | (3) | (4) | (5) |
| Panel A: Young vs old firms |  |  |  |  |  |
| Director ownership | 0.026 | 0.396 | -0.225 | 0.327 | 0.735 |
|  | (1.426) | (1.091) | (-0.785) | (0.453) | (0.883) |
| Director ownership x Old firm | 0.008 | -0.420 | 0.234 | -0.016 | -0.278 |
|  | (0.362) | (-1.036) | (0.769) | (-0.015) | (-0.230) |
| Old firm | -0.008 | 0.012 | -0.082 | -0.143 | -0.681\* |
|  | (-0.867) | (0.185) | (-1.398) | (-0.453) | (-1.763) |
| Observations | 1,259 | 591 | 502 | 575 | 575 |
| Control variables | YES | YES | YES | YES | YES |
| Industry fixed effects | YES | YES | YES | YES | YES |
| R-squared | 13% | 70% | 25% | - | - |
| Adjusted/Pseudo R-squared | 11% | 68% | 19% | 11% | 13% |
| Panel B: Large vs small firms |  |  |  |  |  |
| Director ownership | 0.021 | 0.230 | 0.213 | 0.346 | 0.412 |
|  | (0.991) | (0.911) | (1.087) | (0.485) | (0.517) |
| Director ownership x Large firm | 0.020 | -0.172 | -0.374\* | -0.093 | 0.635 |
|  | (0.825) | (-0.473) | (-1.722) | (-0.087) | (0.535) |
| Large firm | 0.003 | 0.048 | -0.044 | 0.468 | -0.275 |
|  | (0.291) | (0.691) | (-0.825) | (1.359) | (-0.655) |
| Observations | 1,259 | 591 | 502 | 575 | 575 |
| Control variables | YES | YES | YES | YES | YES |
| Industry fixed effects | YES | YES | YES | YES | YES |
| R-squared | 13% | 69% | 25% | - | - |
| Adjusted/Pseudo R-squared | 11% | 68% | 20% | 11% | 12% |
| Panel C: old vs young industries |  |  |  |  |  |
| Director ownership | 0.042\*\*\* | -0.112 | -0.105 | 0.039 | 0.208 |
|  | (2.622) | (-0.483) | (-0.570) | (0.054) | (0.259) |
| Director ownership x Old industry | -0.036 | 0.371 | 0.055 | 0.869 | 1.392 |
|  | (-1.053) | (0.953) | (0.233) | (0.744) | (1.075) |
| Old industry | 0.018 | -0.738\*\*\* | -0.204\*\* | -1.514\*\* | -3.515\*\*\* |
|  | (0.693) | (-5.779) | (-2.207) | (-2.010) | (-4.073) |
| Observations | 1,259 | 591 | 502 | 575 | 575 |
| Control variables | YES | YES | YES | YES | YES |
| Industry fixed effects | YES | YES | YES | YES | YES |
| R-squared | 13% | 70% | 24% |  |  |
| Adjusted/Pseudo R-squared | 11% | 68% | 19% | 11% | 12% |

*Sources*: See Appendix Table 1 for sources and variable definitions. *t-statistics* calculated via robust standard errors are in parentheses. Significance is shown by \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Because Tobin’s Q is highly skewed, we follow the usual practice in the literature of capping it at 10. Logit regressions report odds-ratios. An old firm is a firm above the median age of firms in the sample. A large firm is one above the median size of firms in the sample. An old industry is an industry in which the median age of the firms exceeds the median age of all industries across our sample.

APPENDIX TABLE 8

OLS RESULTS FOR DIRECTOR OWNERSHIP AND FIRM PERFORMANCE – EXPLORING NONLINEAR RELATIONSHIPS

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Dependent variable | Return on assets | Tobin's Q | Dividend yield | Time to failure ≥ 10 years | Time to failure ≥ 30 years |
|  | OLS | OLS | OLS | Logit | Logit |
|  | (1) | (2) | (3) | (4) | (5) |
| Director ownership | 0.045 | 0.472 | -0.012 | 0.961 | 1.669 |
|  | (1.192) | (1.025) | (-0.044) | (0.620) | (0.907) |
| Director ownership (squared) | -0.021 | -0.527 | -0.086 | -0.866 | -1.370 |
|  | (-0.462) | (-0.974) | (-0.240) | (-0.441) | (-0.603) |
| Return on assets |  | 3.668\*\*\* | 0.187 | -2.120\* | -0.832 |
|  |  | (6.726) | (0.830) | (-1.882) | (-1.146) |
| Family firm | 0.008\* | -0.006 | 0.004 | -0.110 | -0.010 |
|  | (1.820) | (-0.135) | (0.082) | (-0.424) | (-0.034) |
| Number of shareholders | 0.015\*\*\* | 0.158\*\*\* | -0.032 | -0.064 | -0.012 |
|  | (4.588) | (4.575) | (-1.430) | (-0.640) | (-0.094) |
| Board size | 0.019\*\* | 0.202\*\* | -0.043 | 0.055 | -0.279 |
|  | (2.003) | (2.036) | (-0.653) | (0.146) | (-0.610) |
| MPs on board | 0.024 | -0.112\* | 0.013 | -1.002\*\* | -0.661 |
|  | (1.137) | (-1.677) | (0.250) | (-2.322) | (-1.340) |
| Peers on board | 0.036 | 0.124 | 0.025 | -0.028 | 0.084 |
|  | (1.619) | (1.465) | (0.496) | (-0.069) | (0.153) |
| Multiple votes | 0.006 | 0.068 | -0.013 | 0.373 | 0.314 |
|  | (0.802) | (1.080) | (-0.306) | (1.187) | (0.872) |
| Preference share voting | -0.003 | 0.075\* | 0.059\* | 0.014 | 0.326 |
|  | (-0.549) | (1.912) | (1.700) | (0.067) | (1.427) |
| Size | -0.027\*\*\* | -0.220\*\*\* | -0.023 | -0.077 | 0.258\* |
|  | (-4.773) | (-7.465) | (-1.064) | (-0.622) | (1.781) |
| Age | -0.004 | -0.029 | 0.032 | -0.011 | 0.017 |
|  | (-0.779) | (-0.905) | (1.202) | (-0.074) | (0.089) |
| Leverage | 0.012 | 0.805\*\*\* | -0.005 | -0.588 | 0.258 |
|  | (0.863) | (8.314) | (-0.042) | (-1.189) | (0.448) |
| Foreign | 0.023\*\*\* | 0.021 | -0.073\* | -0.555\*\* | -0.690\*\* |
|  | (4.977) | (0.362) | (-1.659) | (-2.202) | (-2.390) |
| Official list | -0.002 | 0.007 | 0.115\*\* | -0.238 | -0.295 |
|  | (-0.319) | (0.123) | (2.200) | (-0.964) | (-1.056) |
| London | 0.003 | -0.022 | -0.015 | 0.057 | -0.082 |
|  | (0.592) | (-0.438) | (-0.312) | (0.247) | (-0.281) |
| Observations | 1,259 | 591 | 502 | 575 | 575 |
| Industry fixed effects | YES | YES | YES | YES | YES |
| R-squared | 13% | 69% | 24% | - | - |
| Adjusted R-squared/Pseudo R | 11% | 68% | 19% | 11% | 12% |
| Variance decomposition |  |  |  |  |  |
| Ownership | 2.06% | 0.51% | 0.52% | 3.12% | 3.00% |
| Controls | 64.08% | 62.96% | 36.55% | 30.36% | 28.24% |
| Industry FE | 33.86% | 36.54% | 62.93% | 66.52% | 68.76% |

*Sources*: See Appendix Table 1 for sources and variable definitions. *t-statistics* calculated via robust standard errors are in parentheses. Significance is shown by \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Because Tobin’s Q is highly skewed, we follow the usual practice in the literature of capping it at 10. Coefficients reported are expressed as marginal effects.

APPENDIX TABLE 9

SAMPLE SELECTION BIAS FOR MANAGER CHARACTERISTICS

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Full sample | | Chairman sample | |
| Variable | *N* | Mean | *N* | Mean |
| Director ownership | 1383 | 0.174 | 586 | 0.168 |
| Directors own more than 1/3 (0/1) | 1383 | 0.173 | 586 | 0.160 |
| Directors own more than 1/2 (0/1) | 1383 | 0.082 | 586 | 0.077 |
| Family firm (0/1) | 1383 | 0.268 | 586 | 0.247 |
| Number of shareholders | 1383 | 1,244 | 586 | 1,723\*\*\* |
| Board size | 1383 | 5.751 | 586 | 6.210\*\*\* |
| MPs on board | 1383 | 0.134 | 586 | 0.200\*\*\* |
| Peers on the board | 1383 | 0.148 | 586 | 0.212\*\* |
| Multiple votes (0/1) | 1383 | 0.111 | 586 | 0.140\* |
| One vote per share (0/1) | 1383 | 0.777 | 586 | 0.741\* |
| Preference share voting (0/1) | 1383 | 0.521 | 586 | 0.517 |
| Total assets (£m) | 1383 | 1,696 | 586 | 2,616\*\* |
| Firm age | 1383 | 21.230 | 586 | 22.210 |
| Leverage | 1383 | 0.200 | 586 | 0.182 |
| Foreign (0/1) | 1383 | 0.304 | 586 | 0.331 |
| Registered (0/1) | 1383 | 0.944 | 586 | 0.932 |
| Official list (0/1) | 1383 | 0.684 | 586 | 0.712 |
| Number of markets | 1383 | 0.647 | 586 | 0.732\*\*\* |
| Traded on multiple markets (0/1) | 1383 | 0.084 | 586 | 0.099 |
| London market (0/1) | 1383 | 0.432 | 586 | 0.469 |

*Sources*: See Appendix Table 1 for sources and variable definitions. Significance from a difference in means test is shown by \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

APPENDIX TABLE 10

OLS RESULTS FOR PERFORMANCE METRICS AND CHAIRMAN CHARACTERISTICS – WITH BUSINESS EXPERIENCE VARIABLE INCLUDED

|  |  |  |  |
| --- | --- | --- | --- |
|  | Return on assets | Tobin’s Q | Dividend yield |
|  | (1) | (2) | (3) |
| Peer | 0.066 | -0.142 | -0.053 |
|  | (0.808) | (-1.070) | (-0.443) |
| Knight | 0.019 | -0.035 | -0.039 |
|  | (1.246) | (-0.497) | (-0.722) |
| Number of other directorships | -0.008 | 0.068 | 0.040 |
|  | (-0.593) | (0.873) | (0.823) |
| Directorship in same industry | -0.007 | -0.107 | 0.123\*\* |
|  | (-0.435) | (-1.471) | (2.215) |
| Banking director | 0.003 | 0.031 | 0.015 |
|  | (0.306) | (0.355) | (0.252) |
| Business experience | -0.001 | 0.048 | 0.021 |
|  | (-0.048) | (0.660) | (0.459) |
| Number of other chairmanships | -0.013 | -0.086 | 0.033 |
|  | (-1.387) | (-1.408) | (0.744) |
| Club membership | 0.011 | 0.072 | -0.034 |
|  | (1.175) | (0.995) | (-0.637) |
| Justice of Peace / Deputy Lieutenant | -0.024 | -0.045 | 0.058 |
|  | (-1.204) | (-0.690) | (1.132) |
| Military officer | 0.035 | 0.025 | -0.026 |
|  | (1.013) | (0.238) | (-0.394) |
| Elite private school | -0.037\*\*\* | 0.083 | 0.009 |
|  | (-2.684) | (0.687) | (0.131) |
| University degree | -0.012 | -0.064 | -0.125 |
|  | (-0.831) | (-0.590) | (-0.969) |
| Oxbridge degree | 0.027 | -0.007 | 0.008 |
|  | (1.200) | (-0.042) | (0.058) |
| Observations | 465 | 257 | 218 |
| Control variables | YES | YES | YES |
| Industry fixed effects | YES | YES | YES |
| R-squared | 18% | 72% | 33% |
| Adjusted R-squared | 10% | 67% | 16% |
| Variance decompositions |  |  |  |
| Chairman characteristics | 24.51% | 5.25% | 22.82% |
| Ownership | 0.02% | 0.49% | 0.20% |
| Control variables | 43.61% | 58.39% | 20.46% |
| Industry fixed effects | 31.86% | 35.88% | 56.52% |

*Sources*: See Appendix Table 1 for sources and variable definitions. *t-statistics* calculated via robust standard errors are in parentheses. Significance is shown by \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. The control variables are as follows: return on assets, director ownership, family firm, number of shareholders, board size, MPs on board, peers on board, multiple votes, preference share voting, size, age, leverage, foreign, Official list, and London.

**Appendix: Director ownership variable**

Can the director ownership variablereported in *The Investor’s Four Shilling Yearbook (IFSY)* be trusted? Was the reported ownership figure accurate? Could directors have concealed their ownership by using their wives or nominees?

The UK’s National Archives has preserved some of the original documents that the compilers of the *IFSY* used, in other words, the Form E required under the Companies Acts. These records at the National Archives went through a major cull in the 1970s, with the result that ownership records were only preserved for approximately one in every five years. Unfortunately, the records at Kew do not indicate which years were preserved for each company and until gets out the boxes for an individual company, one does not know which years will be in those boxes. Consequently, our approach to dealing with this issue was to obtain a random sample of 180 of our companies and search for their records in Kew. This involved ordering out the boxes for each company and then sifting through them, to see if the 1911 Form E ownership record had been preserved. Of our sample of 180 firms, only 22 companies had an ownership census for 1911 and 5 of those were incomplete. We then cross-referenced our 17 Form E ownership records with what had been reported in *IFSY*. Appendix Table 11 reports the ownership of the 17 companies for which we could obtain the original Form E.

In terms of accuracy, there are only two companies whereby there is a noticeable difference between what is reported in the *IFSY* and what we calculate from the Form E. In the case of Swan and Edgar, once the ownership of one wife is included, then our total comes close to the *IFSY* total, which perhaps suggests that the compilers of the *IFSY* may have sometimes included shares held by wives as part of their husband’s holdings. The remaining difference is possibly due to compilers confusing a ‘3’ for an ‘8’.

In the case of Hotel Cecil, the compilers appear to have only regarded the preference shares of this company, which had full voting rights. The ordinary shares were non-traded and largely in the hands of the Debenture Corporation Ltd, with one director owning 6.25 percent of them, and one other shareholder owning the same amount. Even adjusting for this, the director ownership of Hotel Cecil is still very low.

In terms of ownership by wives, Appendix Table 11 reveals that large ownership stakes held by directors’ wives were uncommon. There is only company where the wife of the chairman held a considerable stake in the company – Tredegar Iron and Coal Company. Furthermore, ownership by close relatives of directors, where it occurs, is trivial.

To assess the possibility that directors’ shares were held by nominees, we examine all the shareholders who owned more shares than the largest director. Because the Form E reported shareholder address and occupation, we use a proxy to assess the potential degree of nominee holding. We define a nominee as a solicitor, or someone described as a ‘gentleman’ with an address in the City of London. Such shareholders may not be nominees, but it gives us an upper bound on the extent to which directors’ shares were held by nominees. As can be seen from Appendix Table 11, there is little in the way of substantial stakes being held by individuals who could be classified as nominees.

APPENDIX TABLE 11

OWNERSHIP BY WIVES, RELATIVES, AND POTENTIAL NOMINEES, 1911

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Company | Director ownership in IFSY  (%) | Director ownership in Form E  (%) | Shares owned by wives of directors  (%) | Shares owned by other relative residing at same address  (%) | No. shareholders with ownership > largest director | Shares owned by shareholders with ownership > largest director  (%) | Shares owned by potential nominees of directors  (%) |
| Belgravia Dairy | 4.196 | 4.196 | 0 | 0.005 | 7 | 15.414 | 1.923 |
| British Gas Light Company | 2.248 | 2.248 | 0.102 | 0.041 | 0 | - | 0 |
| Emerald & Phoenix Brewing Co. | 1.432 | 0.718 | 0 | 0 | 72 | 56.464 | 10.921 |
| Halifax Commercial Banking Co. | 5.440 | 4.175 | 0 | 0.025 | 1 | 3.000 | 0 |
| Hotel Cecil | 0.304 | 4.517 | 0 | 0 | 1 | 58.331 | 0 |
| House Property & Investment Co. | 3.350 | 3.350 | 0.114 | 0.09 | 0 | - | 0 |
| Lion Brewery | 24.258 | 24.242 | 0 | 0 | 0 | - | 0 |
| Marshall & Snelgrove | 68.570 | 68.570 | 0 | 0 | 0 | - | 0 |
| Morgan Crucible Company | 15.948 | 16.020 | 0 | 0 | 0 | - | 0 |
| New Sharlston Collieries | 13.180 | 13.474 | 0.12 | 1.775 | 0 | - | 0 |
| Nottingham Brewery Company | 28.645 | 28.645 | 0 | 0 | 0 | - | 0 |
| Oxford Electric | 2.514 | 2.509 | 0.151 | 0.868 | 11 | 33.378 | 0 |
| Salar del Carmen Nitrate | 4.577 | 4.668 | 0 | 0 | 5 | 11.423 | 0 |
| Swan & Edgar | 12.409 | 10.952 | 0.8 | 0.021 | 1 | 12.500 | 0 |
| Tadcaster Tower Brewery | 9.035 | 9.185 | 0 | 0 | 3 | 28.105 | 0 |
| Tredegar Iron & Coal Company | 10.783 | 10.997 | 11.842 | 0 | 0 | - | 0 |
| Tuscan Gas Company | 3.092 | 3.640 | 0 | 0 | 18 | 49.457 | 1.260 |

*Sources*: *The Investor’s Four Shilling Yearbook* (IFSY) and From Es. The Form Es for each company were obtained from the National Archives at Kew. Potential nominees are defined as solicitors or those designated as gentlemen with addresses in the City of London.