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**Appendix S1**

**Mathematical formulas for four network centrality measures**

1. Degree centrality

Where *χij* is 1 for the presence of an interlocking tie between director *i* and director *j*. *N* is the size of the yearly network.

2. Closeness centrality

Where *dij* is the shortest distance between director *i* and director *j*, *n* is the size of the component director *i* belongs to, and *N* is the size of the yearly network.

3. Betweenness centrality

Where *gij* is 1 for any geodesic connecting director *i* and director *j*, and *gij(k)* is assigned a value of 1 if the geodesic between *i* and *j* also passes through director *k*.

4. Eigenvector centrality

*Εi* is solved by satisfying *λΕ’* *Ε=Ε’ AΕ*, where ***Ε*** is an eigenvector of the matrix of connections **A**, and *λ* is its associated eigenvalue. *Εi* is taken as the elements of the eigenvector **Ε\*** associated with **A’**s principal eigenvalue, *λ\**.

**Appendix S2**

**Detailed tables of moderating effects**

Table S1. Main Effects of Degree Centrality and Moderating Effects

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) | (5) | (6) |
| VARIABLES | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 |
| Degree |  | 0.107\*\* | 0.127\*\*\* | 0.112\*\*\* | 0.184\*\*\* | 0.206\*\*\* |
|  |  | (0.039) | (0.039) | (0.039) | (0.047) | (0.047) |
| Big4 audit |  |  | - |  |  | - |
|  |  |  |  |  |  |  |
| Degree\*Big4 audit |  |  | -1.350\*\*\* |  |  | -1.313\*\*\* |
|  |  |  | (0.329) |  |  | (0.331) |
| Media mention |  |  |  | 0.135\* |  | 0.127\* |
|  |  |  |  | (0.063) |  | (0.063) |
| Degree\*Media mention |  |  |  | -0.114+ |  | -0.114+ |
|  |  |  |  | (0.067) |  | (0.068) |
| Degree\*Independent |  |  |  |  | -0.148\*\*\* | -0.149\*\*\* |
|  |  |  |  |  | (0.050) | (0.051) |
| Independent | -0.769\*\*\* | -0.808\*\*\* | -0.815\*\*\* | -0.797\*\*\* | -0.821\*\*\* | -0.817\*\*\* |
|  | (0.056) | (0.058) | (0.058) | (0.059) | (0.058) | (0.059) |
| Gender | -0.113+ | -0.118+ | -0.119+ | -0.115+ | -0.108 | -0.107 |
|  | (0.069) | (0.069) | (0.069) | (0.069) | (0.069) | (0.069) |
| Age | -0.007\* | -0.007\* | -0.007\* | -0.008\* | -0.008\* | -0.008\* |
|  | (0.003) | (0.003) | (0.003) | (0.003) | (0.003) | (0.003) |
| Education | -0.227\*\*\* | -0.232\*\*\* | -0.231\*\*\* | -0.233\*\*\* | -0.234\*\*\* | -0.235\*\*\* |
|  | (0.044) | (0.044) | (0.044) | (0.044) | (0.044) | (0.044) |
| Paid | -0.868\*\*\* | -0.855\*\*\* | -0.855\*\*\* | -0.859\*\*\* | -0.848\*\*\* | -0.852\*\*\* |
|  | (0.065) | (0.065) | (0.065) | (0.065) | (0.065) | (0.066) |
| Politician | -0.218\*\*\* | -0.233\*\*\* | -0.228\*\*\* | -0.243\*\*\* | -0.221\*\*\* | -0.225\*\*\* |
|  | (0.057) | (0.057) | (0.057) | (0.058) | (0.057) | (0.058) |
| Academic | -0.944\*\*\* | -0.920\*\*\* | -0.924\*\*\* | -0.919\*\*\* | -0.893\*\*\* | -0.897\*\*\* |
|  | (0.113) | (0.113) | (0.113) | (0.113) | (0.113) | (0.114) |
| Finance | 0.621\*\*\* | 0.611\*\*\* | 0.617\*\*\* | 0.616\*\*\* | 0.615\*\*\* | 0.624\*\*\* |
|  | (0.061) | (0.061) | (0.061) | (0.061) | (0.061) | (0.061) |
| Foreign | 0.643\*\*\* | 0.644\*\*\* | 0.655\*\*\* | 0.610\*\*\* | 0.637\*\*\* | 0.615\*\*\* |
|  | (0.124) | (0.124) | (0.124) | (0.126) | (0.124) | (0.126) |
| #Directorship | 0.019 | 0.010 | 0.020 | 0.009 | 0.012 | 0.022 |
|  | (0.022) | (0.022) | (0.022) | (0.022) | (0.022) | (0.022) |
| Tenure | 0.008\*\*\* | 0.008\*\*\* | 0.008\*\*\* | 0.008\*\*\* | 0.008\*\*\* | 0.008\*\*\* |
|  | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) |
| Coopted | -0.253\*\*\* | -0.249\*\*\* | -0.242\*\*\* | -0.241\*\*\* | -0.247\*\*\* | -0.233\*\*\* |
|  | (0.075) | (0.075) | (0.075) | (0.075) | (0.075) | (0.075) |
| Coworktime | -0.004+ | -0.003 | -0.003 | -0.003 | -0.003 | -0.003 |
|  | (0.002) | (0.002) | (0.002) | (0.002) | (0.002) | (0.002) |
|  |  |  |  |  |  |  |
| Proposal FE | YES | YES | YES | YES | YES | YES |
| Observations | 17,980 | 17,980 | 17,980 | 17,980 | 17,980 | 17,980 |
| Pseudo R-squared | 0.066 | 0.067 | 0.069 | 0.068 | 0.068 | 0.070 |
| Chi-square | 677.562 | 684.958 | 704.976 | 690.525 | 693.641 | 718.243 |
| Prob > Chi2 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

Note: \*\*\* p<0.005, \*\* p<0.01, \* p<0.05, + p<0.1. Standard errors in parentheses. Director centrality variables are standardized. The main effect of Big4 audit is omitted, because it is invariant within a specific proposal.

Table S2. Main Effects of Closeness Centrality and Moderating Effects

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) | (5) | (6) |
| VARIABLES | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 |
|  |  |  |  |  |  |  |
| Closeness |  | 0.267\*\*\* | 0.306\*\*\* | 0.274\*\*\* | 0.343\*\*\* | 0.400\*\*\* |
|  |  | (0.070) | (0.071) | (0.070) | (0.075) | (0.076) |
| Big4 audit |  |  | - |  |  | - |
|  |  |  |  |  |  |  |
| Closeness\* |  |  | -2.202\*\*\* |  |  | -2.224\*\*\* |
| Big4 audit |  |  | (0.553) |  |  | (0.553) |
| Media mention |  |  |  | 0.144\* |  | 0.137\* |
|  |  |  |  | (0.065) |  | (0.066) |
| Closeness\* |  |  |  | -0.219\*\*\* |  | -0.244\*\*\* |
| Media mention |  |  |  | (0.057) |  | (0.058) |
| Closeness\* |  |  |  |  | -0.150\*\*\* | -0.174\*\*\* |
| Independent |  |  |  |  | (0.048) | (0.049) |
| Independent | -0.769\*\*\* | -0.797\*\*\* | -0.804\*\*\* | -0.779\*\*\* | -0.822\*\*\* | -0.815\*\*\* |
|  | (0.056) | (0.057) | (0.057) | (0.057) | (0.057) | (0.058) |
| Gender | -0.113+ | -0.126+ | -0.130+ | -0.118+ | -0.115+ | -0.109 |
|  | (0.069) | (0.069) | (0.069) | (0.069) | (0.069) | (0.069) |
| Age | -0.007\* | -0.007\* | -0.007\* | -0.008\* | -0.007\* | -0.008\* |
|  | (0.003) | (0.003) | (0.003) | (0.003) | (0.003) | (0.003) |
| Education | -0.227\*\*\* | -0.234\*\*\* | -0.235\*\*\* | -0.230\*\*\* | -0.237\*\*\* | -0.233\*\*\* |
|  | (0.044) | (0.044) | (0.044) | (0.044) | (0.044) | (0.044) |
| Paid | -0.868\*\*\* | -0.856\*\*\* | -0.856\*\*\* | -0.851\*\*\* | -0.857\*\*\* | -0.851\*\*\* |
|  | (0.065) | (0.065) | (0.065) | (0.065) | (0.065) | (0.066) |
| Politician | -0.218\*\*\* | -0.228\*\*\* | -0.230\*\*\* | -0.243\*\*\* | -0.206\*\*\* | -0.219\*\*\* |
|  | (0.057) | (0.057) | (0.057) | (0.058) | (0.057) | (0.058) |
| Academic | -0.944\*\*\* | -0.837\*\*\* | -0.826\*\*\* | -0.834\*\*\* | -0.798\*\*\* | -0.778\*\*\* |
|  | (0.113) | (0.117) | (0.117) | (0.117) | (0.118) | (0.118) |
| Finance | 0.621\*\*\* | 0.606\*\*\* | 0.609\*\*\* | 0.612\*\*\* | 0.612\*\*\* | 0.622\*\*\* |
|  | (0.061) | (0.061) | (0.061) | (0.061) | (0.061) | (0.061) |
| Foreign | 0.643\*\*\* | 0.644\*\*\* | 0.652\*\*\* | 0.547\*\*\* | 0.656\*\*\* | 0.557\*\*\* |
|  | (0.124) | (0.124) | (0.124) | (0.128) | (0.124) | (0.128) |
| #Directorship | 0.019 | 0.008 | 0.015 | 0.009 | 0.012 | 0.020 |
|  | (0.022) | (0.022) | (0.022) | (0.022) | (0.022) | (0.022) |
| Tenure | 0.008\*\*\* | 0.008\*\*\* | 0.008\*\*\* | 0.008\*\*\* | 0.008\*\*\* | 0.008\*\*\* |
|  | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) |
| Coopted | -0.253\*\*\* | -0.253\*\*\* | -0.248\*\*\* | -0.240\*\*\* | -0.255\*\*\* | -0.237\*\*\* |
|  | (0.075) | (0.075) | (0.075) | (0.075) | (0.075) | (0.075) |
| Coworktime | -0.004+ | -0.003 | -0.003 | -0.003 | -0.003 | -0.003 |
|  | (0.002) | (0.002) | (0.002) | (0.002) | (0.002) | (0.002) |
|  |  |  |  |  |  |  |
| Proposal FE | YES | YES | YES | YES | YES | YES |
| Observations | 17,980 | 17,980 | 17,980 | 17,980 | 17,980 | 17,980 |
| Pseudo R-squared | 0.066 | 0.068 | 0.070 | 0.070 | 0.069 | 0.073 |
| Chi-square | 677.562 | 692.114 | 710.099 | 711.512 | 701.790 | 742.118 |
| Prob > Chi2 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

Note: \*\*\* p<0.005, \*\* p<0.01, \* p<0.05, + p<0.1. Standard errors in parentheses. Director centrality variables are standardized. The main effect of Big4 audit is omitted, because it is invariant within a specific proposal.

Table S3. Main Effects of Betweenness Centrality and Moderating Effects

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) | (5) | (6) |
| VARIABLES | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 |
| Betweenness |  | 0.081\*\*\* | 0.088\*\*\* | 0.085\*\*\* | 0.186\*\*\* | 0.218\*\*\* |
|  |  | (0.027) | (0.028) | (0.027) | (0.039) | (0.042) |
| Big4 audit |  |  | - |  |  | - |
|  |  |  |  |  |  |  |
| Betweenness\* |  |  | -0.079 |  |  | -0.082 |
| Big4 audit |  |  | (0.079) |  |  | (0.083) |
| Media mention |  |  |  | 0.127\* |  | 0.122+ |
|  |  |  |  | (0.063) |  | (0.063) |
| Betweenness\* |  |  |  | -0.084+ |  | -0.110\* |
| Media mention |  |  |  | (0.047) |  | (0.050) |
| Betweenness\* |  |  |  |  | -0.183\*\*\* | -0.211\*\*\* |
| Independent |  |  |  |  | (0.050) | (0.052) |
| Independent | -0.769\*\*\* | -0.819\*\*\* | -0.823\*\*\* | -0.812\*\*\* | -0.803\*\*\* | -0.800\*\*\* |
|  | (0.056) | (0.059) | (0.059) | (0.059) | (0.058) | (0.059) |
| Gender | -0.113+ | -0.121+ | -0.121+ | -0.120+ | -0.115+ | -0.113 |
|  | (0.069) | (0.069) | (0.069) | (0.069) | (0.069) | (0.069) |
| Age | -0.007\* | -0.007\* | -0.007\* | -0.007\* | -0.007\* | -0.007\* |
|  | (0.003) | (0.003) | (0.003) | (0.003) | (0.003) | (0.003) |
| Education | -0.227\*\*\* | -0.231\*\*\* | -0.232\*\*\* | -0.233\*\*\* | -0.235\*\*\* | -0.236\*\*\* |
|  | (0.044) | (0.044) | (0.044) | (0.044) | (0.044) | (0.044) |
| Paid | -0.868\*\*\* | -0.856\*\*\* | -0.857\*\*\* | -0.860\*\*\* | -0.847\*\*\* | -0.850\*\*\* |
|  | (0.065) | (0.065) | (0.065) | (0.065) | (0.065) | (0.066) |
| Politician | -0.218\*\*\* | -0.246\*\*\* | -0.243\*\*\* | -0.253\*\*\* | -0.251\*\*\* | -0.252\*\*\* |
|  | (0.057) | (0.058) | (0.058) | (0.058) | (0.058) | (0.058) |
| Academic | -0.944\*\*\* | -0.943\*\*\* | -0.945\*\*\* | -0.942\*\*\* | -0.928\*\*\* | -0.928\*\*\* |
|  | (0.113) | (0.113) | (0.113) | (0.113) | (0.113) | (0.113) |
| Finance | 0.621\*\*\* | 0.601\*\*\* | 0.600\*\*\* | 0.605\*\*\* | 0.592\*\*\* | 0.592\*\*\* |
|  | (0.061) | (0.061) | (0.061) | (0.061) | (0.061) | (0.061) |
| Foreign | 0.643\*\*\* | 0.648\*\*\* | 0.652\*\*\* | 0.615\*\*\* | 0.646\*\*\* | 0.614\*\*\* |
|  | (0.124) | (0.124) | (0.124) | (0.126) | (0.124) | (0.126) |
| #Directorship | 0.019 | 0.004 | 0.007 | 0.004 | 0.001 | 0.006 |
|  | (0.022) | (0.022) | (0.022) | (0.022) | (0.022) | (0.023) |
| Tenure | 0.008\*\*\* | 0.008\*\*\* | 0.008\*\*\* | 0.008\*\*\* | 0.008\*\*\* | 0.008\*\*\* |
|  | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) |
| Coopted | -0.253\*\*\* | -0.246\*\*\* | -0.245\*\*\* | -0.237\*\*\* | -0.245\*\*\* | -0.233\*\*\* |
|  | (0.075) | (0.075) | (0.075) | (0.075) | (0.075) | (0.075) |
| Coworktime | -0.004+ | -0.003 | -0.003 | -0.003 | -0.004+ | -0.004+ |
|  | (0.002) | (0.002) | (0.002) | (0.002) | (0.002) | (0.002) |
|  |  |  |  |  |  |  |
| Proposal FE | YES | YES | YES | YES | YES | YES |
| Observations | 17,980 | 17,980 | 17,980 | 17,980 | 17,980 | 17,980 |
| Pseudo R-squared | 0.066 | 0.067 | 0.067 | 0.068 | 0.069 | 0.070 |
| Chi-square | 677.562 | 686.311 | 687.321 | 691.825 | 699.591 | 708.787 |
| Prob > Chi2 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

Note: \*\*\* p<0.005, \*\* p<0.01, \* p<0.05, + p<0.1. Standard errors in parentheses. Director centrality variables are standardized. The main effect of Big4 audit is omitted, because it is invariant within a specific proposal.

Table S4. Main Effects of Eigenvector Centrality and Moderating Effects

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) | (5) | (6) |
| VARIABLES | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 |
|  |  |  |  |  |  |  |
| Eigenvector |  | 0.214\*\*\* | 0.258\*\*\* | 0.222\*\*\* | 0.303\*\*\* | 0.367\*\*\* |
|  |  | (0.065) | (0.065) | (0.065) | (0.069) | (0.070) |
| Big4 audit |  |  | - |  |  | - |
|  |  |  |  |  |  |  |
| Eigenvector\* |  |  | -1.518\*\*\* |  |  | -1.554\*\*\* |
| Big4 audit |  |  | (0.402) |  |  | (0.407) |
| Media mention |  |  |  | 0.171\*\* |  | 0.171\*\* |
|  |  |  |  | (0.064) |  | (0.064) |
| Eigenvector\* |  |  |  | -0.186\*\*\* |  | -0.210\*\*\* |
| Media mention |  |  |  | (0.057) |  | (0.058) |
| Eigenvector\* |  |  |  |  | -0.191\*\*\* | -0.215\*\*\* |
| Independent |  |  |  |  | (0.050) | (0.051) |
| Independent | -0.769\*\*\* | -0.787\*\*\* | -0.786\*\*\* | -0.769\*\*\* | -0.816\*\*\* | -0.800\*\*\* |
|  | (0.056) | (0.057) | (0.057) | (0.057) | (0.057) | (0.058) |
| Gender | -0.113+ | -0.116+ | -0.120+ | -0.106 | -0.107 | -0.099 |
|  | (0.069) | (0.069) | (0.069) | (0.069) | (0.069) | (0.069) |
| Age | -0.007\* | -0.007\* | -0.008\* | -0.008\* | -0.007\* | -0.008\* |
|  | (0.003) | (0.003) | (0.003) | (0.003) | (0.003) | (0.003) |
| Education | -0.227\*\*\* | -0.233\*\*\* | -0.234\*\*\* | -0.234\*\*\* | -0.229\*\*\* | -0.231\*\*\* |
|  | (0.044) | (0.044) | (0.044) | (0.044) | (0.044) | (0.044) |
| Paid | -0.868\*\*\* | -0.865\*\*\* | -0.861\*\*\* | -0.865\*\*\* | -0.874\*\*\* | -0.873\*\*\* |
|  | (0.065) | (0.065) | (0.065) | (0.065) | (0.065) | (0.066) |
| Politician | -0.218\*\*\* | -0.225\*\*\* | -0.228\*\*\* | -0.240\*\*\* | -0.201\*\*\* | -0.216\*\*\* |
|  | (0.057) | (0.057) | (0.057) | (0.058) | (0.057) | (0.058) |
| Academic | -0.944\*\*\* | -0.867\*\*\* | -0.855\*\*\* | -0.865\*\*\* | -0.827\*\*\* | -0.809\*\*\* |
|  | (0.113) | (0.115) | (0.115) | (0.115) | (0.116) | (0.116) |
| Finance | 0.621\*\*\* | 0.607\*\*\* | 0.609\*\*\* | 0.613\*\*\* | 0.615\*\*\* | 0.624\*\*\* |
|  | (0.061) | (0.061) | (0.061) | (0.061) | (0.061) | (0.061) |
| Foreign | 0.643\*\*\* | 0.635\*\*\* | 0.639\*\*\* | 0.578\*\*\* | 0.625\*\*\* | 0.564\*\*\* |
|  | (0.124) | (0.124) | (0.124) | (0.126) | (0.124) | (0.127) |
| #Directorship | 0.019 | 0.013 | 0.015 | 0.012 | 0.016 | 0.017 |
|  | (0.022) | (0.022) | (0.022) | (0.022) | (0.022) | (0.022) |
| Tenure | 0.008\*\*\* | 0.008\*\*\* | 0.008\*\*\* | 0.008\*\*\* | 0.008\*\*\* | 0.008\*\*\* |
|  | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) |
| Coopted | -0.253\*\*\* | -0.256\*\*\* | -0.262\*\*\* | -0.243\*\*\* | -0.258\*\*\* | -0.251\*\*\* |
|  | (0.075) | (0.075) | (0.075) | (0.075) | (0.075) | (0.075) |
| Coworktime | -0.004+ | -0.003 | -0.004+ | -0.003 | -0.003 | -0.003 |
|  | (0.002) | (0.002) | (0.002) | (0.002) | (0.002) | (0.002) |
|  |  |  |  |  |  |  |
| Proposal FE | YES | YES | YES | YES | YES | YES |
| Observations | 17,980 | 17,980 | 17,980 | 17,980 | 17,980 | 17,980 |
| Pseudo R-squared | 0.066 | 0.068 | 0.069 | 0.069 | 0.069 | 0.072 |
| Chi-square | 677.562 | 688.300 | 704.694 | 702.397 | 702.750 | 736.359 |
| Prob > Chi2 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

Note: \*\*\* p<0.005, \*\* p<0.01, \* p<0.05, + p<0.1. Standard errors in parentheses. Director centrality variables are standardized. The main effect of Big4 audit is omitted, because it is invariant within a specific proposal.

**Appendix S3**

**Robustness checks**

**Conditional logit model with board- and firm-level control variables**

**Table S5** shows the results of the conditional logit model with the board- and firm-level control variables. Except for degree centrality, all of the centrality indicators and the principal component are positively associated with dissent. The results are generally consistent with those obtained using the baseline specification model shown in Table 5 in the paper.

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INSERT TABLE S5 ABOUT HERE

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**PSM sample at director-year level**

 We constructed a director-year panel from the entire sample of directors at all publicly listed firms for the period considered in our study and applied a logit model to analyze the relationship between director centrality and dissent voting. The dependent variable *dissent* is equal to 1 if the director dissented at least once in the focal year, and 0 otherwise. The centrality variables and control variables related to director characteristics, such as gender, age, education, *#Directorship*, and professional background, are the same as those in the baseline specification model. As one director may serve on more than one board, we controlled for director tenure, co-opted ties, co-working time with chairperson, board-level variables, and firm-level variables by obtaining the mean value of continuous variables and the maximum value of dummy variables. Specifically, we controlled for the mean value of director tenure, co-working time with the chairperson, board size, *#Committee*, *% Independent*, tenure dispersion, firm size, leverage, ROA, Tobin’s Q, ownership concentration, AR, and guarantee. We controlled for the maximum of the *co-opted tie*, *CEO duality*, state ownership, and *BHList*. If the director had a co-opted tie with the chairperson of any board on which they served, we coded *co-opted tie* as 1. Variables such as *CEO duality*, state ownership, and *BHList* were coded in a similar manner. By controlling for these board- and firm-level variables, we alleviated potential selection bias, as firms may invite directors with some characteristics to join their board and directors may choose to join a board with some characteristics. **Table S6** shows the results of the logit model based on the director-year panel. The sample size is 110,237, which is much larger than that in our baseline model. Except for eigenvector centrality, all of the centrality indicators and the principal component are positively associated with dissent.

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INSERT TABLE S6 ABOUT HERE

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As expected, some board-level characteristics such as *#Committee* and tenure dispersion, and some firm-level characteristics such as firm size and leverage are significantly associated with dissent. To further alleviate potential selection bias and verify that the relationship between director centrality and dissent is not driven by observable director-, board-, or firm-level characteristics, we used PSM to construct a treatment group and a control group, and then conducted the analysis within the PSM sample. We first estimated a logistic regression using dissent as the dependent variable, and then included all of the control variables used in the regression of the director-year panel. The logistic regression estimated the predicted propensity score for dissent by a director, and we paired each treated director (a director who dissented in that year) with a matched director (a director who did not dissent in that year) using the closest propensity score. The matched sample included directors who did not dissent but whose propensity to dissent was the closest to that of the treated director. Through this matching process, we identified 1,086 matched pairs of directors, which formed the PSM sample. **Table S7** shows the t-test results of the observable variables for the treated group and the control group before PSM; most of the variables differ significantly between the two groups. **Table S8** shows the t-test results of the observable variables for the treated group and the matched control group after PSM; the variables in the two groups do not differ significantly. We also plotted the distributions of the propensity score for the treated group and the control group before and after PSM using kernel density (see **Figure S1** and **Figure S2**). The kernel density plots show that the distributions have significantly different patterns for the treated group and the control group before PSM, but have a similar pattern after PSM. The t-test results and the kernel density plots validate the efficiency of the matching.

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INSERT TABLE S7 ABOUT HERE

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INSERT TABLE S8 ABOUT HERE

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INSERT FIGURE S1 ABOUT HERE

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INSERT FIGURE S2 ABOUT HERE

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**Table S9** shows the results of the logit model based on the PSM director-year panel. The results show that eigenvector centrality is statistically significant and positive at the 5% level; closeness centrality is statistically significant and positive at the 1% level; and degree centrality, betweenness centrality, and principal component are statistically significant and positive at the 0.5% level. Thus, the results for the PSM sample confirm the robustness of the results from our baseline model.

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INSERT TABLE S9 ABOUT HERE

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**Use of alternative proxy variables as moderators**

In the main analyses, we used the Big Four audit as a proxy for firm transparency and the number of articles containing the director’s name that were published in major Chinese newspapers as a proxy for media attention on directors. Studies have used analysts’ coverage as a proxy for firm transparency (Lang et al., 2012), and the popularity and influence of online media are growing. Therefore, we used analysts’ coverage as a proxy for firm transparency and the natural logarithm of the number of articles containing the director’s name that are published on popular websites in China (such as eastmoney.com) as a proxy for media attention on directors. We examined the interaction effects based on our baseline model and obtained similar results. These results are provided in **Table S10-S12**.

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INSERT TABLE S10 ABOUT HERE

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INSERT TABLE S12 ABOUT HERE

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**Tests to exclude reverse causality**

The positive association between director centrality and dissent could be reverse causal, i.e., directors could dissent and, consequently, become more central in the board network. To address this concern, we ran the regression by using the director-year panel consisting of all of the directors at all of the publicly listed firms for the period considered in our study, the dissent lag of one year as the independent variable, and the centrality indicators and the principal component as dependent variables. The results are provided in **Table S13**. The results from the panel regression model with director fixed effect and year fixed effect show that dissent has no significant effects on the four centrality indicators and the principal component at the 5% level. The effect of dissent on closeness centrality is the only effect that is negative and marginally significant (p<0.1). In general, we do not find evidence in support of reverse causality between dissent and director centrality.

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INSERT TABLE S13 ABOUT HERE

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Table S5. Main Effects With Firm-Level Controls

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) | (5) |
| VARIABLES | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 |
| Degree | 0.002+ |  |  |  |  |
|  | (0.001) |  |  |  |  |
| Closeness |  | 0.006\*\*\* |  |  |  |
|  |  | (0.002) |  |  |  |
| Betweenness |  |  | 0.003\*\*\* |  |  |
|  |  |  | (0.001) |  |  |
| Eigenvector |  |  |  | 0.004\* |  |
|  |  |  |  | (0.001) |  |
| Principal |  |  |  |  | 0.110\*\*\* |
|  |  |  |  |  | (0.029) |
| Gender | -0.237\*\*\* | -0.243\*\*\* | -0.247\*\*\* | -0.238\*\*\* | -0.245\*\*\* |
|  | (0.081) | (0.081) | (0.081) | (0.081) | (0.081) |
| Age | -0.010\*\* | -0.010\*\* | -0.010\*\* | -0.011\*\* | -0.010\*\* |
|  | (0.004) | (0.004) | (0.004) | (0.004) | (0.004) |
| Education | -0.235\*\*\* | -0.239\*\*\* | -0.237\*\*\* | -0.238\*\*\* | -0.239\*\*\* |
|  | (0.050) | (0.050) | (0.050) | (0.050) | (0.050) |
| Paid | -0.960\*\*\* | -0.964\*\*\* | -0.948\*\*\* | -0.973\*\*\* | -0.953\*\*\* |
|  | (0.076) | (0.076) | (0.077) | (0.076) | (0.076) |
| Politician | -0.203\*\*\* | -0.196\*\*\* | -0.237\*\*\* | -0.192\*\*\* | -0.220\*\*\* |
|  | (0.068) | (0.068) | (0.069) | (0.068) | (0.069) |
| Academic | -1.038\*\*\* | -0.973\*\*\* | -1.060\*\*\* | -0.999\*\*\* | -0.987\*\*\* |
|  | (0.130) | (0.134) | (0.129) | (0.132) | (0.131) |
| Finance | 0.411\*\*\* | 0.404\*\*\* | 0.397\*\*\* | 0.408\*\*\* | 0.397\*\*\* |
|  | (0.076) | (0.076) | (0.077) | (0.076) | (0.077) |
| Foreign | 0.876\*\*\* | 0.875\*\*\* | 0.887\*\*\* | 0.865\*\*\* | 0.875\*\*\* |
|  | (0.134) | (0.133) | (0.134) | (0.134) | (0.134) |
| #Directorship | 0.054\* | 0.053\* | 0.040+ | 0.057\* | 0.045+ |
|  | (0.024) | (0.024) | (0.024) | (0.023) | (0.024) |
| Tenure | 0.008\*\*\* | 0.008\*\*\* | 0.009\*\*\* | 0.008\*\*\* | 0.008\*\*\* |
|  | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) |
| Coopted | -0.103 | -0.108 | -0.103 | -0.114 | -0.103 |
|  | (0.082) | (0.082) | (0.082) | (0.082) | (0.082) |
| Coworktime | -0.002 | -0.002 | -0.002 | -0.002 | -0.002 |
|  | (0.002) | (0.002) | (0.002) | (0.002) | (0.002) |
| Independent | -0.902\*\*\* | -0.894\*\*\* | -0.957\*\*\* | -0.884\*\*\* | -0.941\*\*\* |
|  | (0.072) | (0.070) | (0.073) | (0.069) | (0.072) |
| Boardsize | -0.153\*\*\* | -0.139\*\*\* | -0.139\*\*\* | -0.145\*\*\* | -0.150\*\*\* |
|  | (0.048) | (0.047) | (0.047) | (0.047) | (0.047) |
| #Committee | -0.206+ | -0.204+ | -0.196+ | -0.214+ | -0.211+ |
|  | (0.110) | (0.110) | (0.109) | (0.110) | (0.110) |
| %Independent | -5.197\*\*\* | -5.300\*\*\* | -5.095\*\*\* | -5.329\*\*\* | -5.361\*\*\* |
|  | (1.755) | (1.758) | (1.757) | (1.765) | (1.761) |
| Tenure Dispersion | -0.613\*\*\* | -0.563\*\*\* | -0.589\*\*\* | -0.618\*\*\* | -0.612\*\*\* |
|  | (0.196) | (0.196) | (0.195) | (0.196) | (0.196) |
| CEO duality | -0.363+ | -0.417+ | -0.357+ | -0.423\* | -0.395+ |
|  | (0.214) | (0.216) | (0.215) | (0.215) | (0.215) |
| Firmsize | -0.106 | -0.096 | -0.094 | -0.112 | -0.085 |
|  | (0.171) | (0.171) | (0.171) | (0.170) | (0.171) |
| Leverage | -1.538\* | -1.493\* | -1.527\* | -1.649\* | -1.580\* |
|  | (0.667) | (0.667) | (0.667) | (0.670) | (0.669) |
| State | -0.392 | -0.399 | -0.355 | -0.392 | -0.402 |
|  | (0.281) | (0.283) | (0.281) | (0.283) | (0.283) |
| BHList | - | - | - | - | - |
|  |  |  |  |  |  |
| ROA | -1.856+ | -1.765+ | -1.814+ | -1.967\* | -1.847+ |
|  | (0.967) | (0.967) | (0.968) | (0.972) | (0.968) |
| TobinQ | -0.077 | -0.071 | -0.080+ | -0.071 | -0.073 |
|  | (0.048) | (0.048) | (0.048) | (0.048) | (0.048) |
| Ownership Concentration | 0.805 | 0.719 | 0.727 | 0.703 | 0.647 |
|  | (2.194) | (2.204) | (2.186) | (2.207) | (2.209) |
| AR | 2.029 | 1.709 | 1.946 | 1.840 | 1.921 |
|  | (1.731) | (1.727) | (1.733) | (1.726) | (1.728) |
| Guarantee | -0.116 | -0.050 | -0.055 | -0.060 | -0.068 |
|  | (0.424) | (0.427) | (0.424) | (0.427) | (0.426) |
|  |  |  |  |  |  |
| Observations | 13,672 | 13,672 | 13,672 | 13,672 | 13,672 |
| Proposal Type FE | YES | YES | YES | YES | YES |
| Firm FE | YES | YES | YES | YES | YES |
| Year FE | YES | YES | YES | YES | YES |
| Pseudo R-squared | 0.064 | 0.065 | 0.065 | 0.064 | 0.065 |
| Chi-square | 593.967 | 599.509 | 605.942 | 596.762 | 604.181 |
| Prob > Chi2 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

Note: \*\*\* p<0.005, \*\* p<0.01, \* p<0.05, + p<0.1. Standard errors in parentheses. The main effect of BHList is omitted, because it is invariant within a specific firm.

Table S6. Main Effects at Director Level-Logit

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) | (5) |
| VARIABLES | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 |
| Degree | 0.007\*\*\* |  |  |  |  |
|  | (0.001) |  |  |  |  |
| Closeness |  | 0.003\* |  |  |  |
|  |  | (0.001) |  |  |  |
| Betweenness |  |  | 0.009\*\*\* |  |  |
|  |  |  | (0.001) |  |  |
| Eigenvector |  |  |  | 0.001 |  |
|  |  |  |  | (0.001) |  |
| Principal |  |  |  |  | 0.143\*\*\* |
|  |  |  |  |  | (0.026) |
| Gender | -0.101 | -0.095 | -0.109 | -0.091 | -0.107 |
|  | (0.107) | (0.107) | (0.107) | (0.107) | (0.107) |
| Age | -0.012\* | -0.012\*\* | -0.011\* | -0.012\*\* | -0.012\* |
|  | (0.005) | (0.005) | (0.005) | (0.005) | (0.005) |
| Education | 0.031 | 0.037 | 0.020 | 0.041 | 0.024 |
|  | (0.067) | (0.066) | (0.068) | (0.066) | (0.067) |
| Paid | -0.037 | -0.011 | -0.093 | -0.006 | -0.046 |
|  | (0.089) | (0.089) | (0.088) | (0.089) | (0.088) |
| Politician | 0.128 | 0.156+ | 0.083 | 0.162+ | 0.122 |
|  | (0.086) | (0.087) | (0.086) | (0.087) | (0.087) |
| Academic | -0.501\*\*\* | -0.613\*\*\* | -0.681\*\*\* | -0.621\*\*\* | -0.582\*\*\* |
|  | (0.150) | (0.147) | (0.148) | (0.147) | (0.148) |
| Finance | 0.360\*\*\* | 0.381\*\*\* | 0.312\*\*\* | 0.388\*\*\* | 0.342\*\*\* |
|  | (0.095) | (0.095) | (0.095) | (0.095) | (0.095) |
| Foreign | 0.379\* | 0.386\* | 0.366\* | 0.388\* | 0.375\* |
|  | (0.153) | (0.154) | (0.154) | (0.154) | (0.153) |
| #Directorship | 0.053+ | 0.065\* | 0.030 | 0.068\* | 0.048 |
|  | (0.029) | (0.028) | (0.031) | (0.027) | (0.029) |
| Tenure | -0.000 | 0.000 | -0.001 | 0.000 | -0.000 |
|  | (0.002) | (0.002) | (0.002) | (0.002) | (0.002) |
| Coopted | -0.007 | 0.032 | -0.082 | 0.038 | -0.017 |
|  | (0.084) | (0.084) | (0.084) | (0.084) | (0.084) |
| Coworktime | -0.000 | -0.001 | 0.000 | -0.001 | -0.000 |
|  | (0.002) | (0.002) | (0.002) | (0.002) | (0.002) |
| Independent | 0.428\*\*\* | 0.574\*\*\* | 0.221+ | 0.584\*\*\* | 0.431\*\*\* |
|  | (0.122) | (0.120) | (0.125) | (0.121) | (0.120) |
| Non-executive | 0.918\*\*\* | 0.977\*\*\* | 0.820\*\*\* | 0.988\*\*\* | 0.904\*\*\* |
|  | (0.098) | (0.099) | (0.096) | (0.099) | (0.097) |
| Boardsize | 0.003 | 0.058\*\*\* | 0.072\*\*\* | 0.059\*\*\* | 0.040\* |
|  | (0.022) | (0.019) | (0.020) | (0.019) | (0.020) |
| #Committee | 0.168\*\* | 0.166\*\* | 0.172\*\* | 0.167\*\* | 0.165\* |
|  | (0.064) | (0.063) | (0.066) | (0.062) | (0.064) |
| %Independent | -0.595 | -0.428 | -0.337 | -0.364 | -0.532 |
|  | (0.775) | (0.763) | (0.804) | (0.761) | (0.783) |
| Tenure Dispersion | 0.472\*\*\* | 0.569\*\*\* | 0.617\*\*\* | 0.568\*\*\* | 0.552\*\*\* |
|  | (0.133) | (0.127) | (0.131) | (0.126) | (0.130) |
| CEO duality | 0.190\* | 0.230\*\* | 0.137 | 0.235\*\*\* | 0.191\* |
|  | (0.083) | (0.083) | (0.084) | (0.083) | (0.083) |
| Firmsize | -0.215\*\*\* | -0.236\*\*\* | -0.223\*\*\* | -0.230\*\*\* | -0.240\*\*\* |
|  | (0.039) | (0.039) | (0.040) | (0.038) | (0.039) |
| Leverage | 0.703\*\*\* | 0.729\*\*\* | 0.736\*\*\* | 0.722\*\*\* | 0.739\*\*\* |
|  | (0.246) | (0.244) | (0.252) | (0.243) | (0.247) |
| State | 0.215\* | 0.252\*\* | 0.150+ | 0.267\*\*\* | 0.193\* |
|  | (0.090) | (0.090) | (0.090) | (0.090) | (0.090) |
| BHList | 0.240\* | 0.248\* | 0.169 | 0.263\* | 0.193+ |
|  | (0.111) | (0.112) | (0.112) | (0.113) | (0.112) |
| ROA | -0.963 | -0.954 | -1.142+ | -0.904 | -1.071 |
|  | (0.659) | (0.654) | (0.676) | (0.652) | (0.666) |
| TobinQ | -0.047 | -0.045 | -0.045 | -0.045 | -0.047 |
|  | (0.033) | (0.032) | (0.033) | (0.032) | (0.033) |
| Ownership Concentration | -1.699\*\*\* | -1.634\*\*\* | -1.651\*\*\* | -1.631\*\*\* | -1.642\*\*\* |
|  | (0.374) | (0.367) | (0.382) | (0.365) | (0.374) |
| AR | 3.653\*\*\* | 3.507\*\*\* | 3.622\*\*\* | 3.467\*\*\* | 3.569\*\*\* |
|  | (0.809) | (0.790) | (0.817) | (0.787) | (0.804) |
| Guarantee | 1.333\*\*\* | 1.327\*\*\* | 1.381\*\*\* | 1.331\*\*\* | 1.340\*\*\* |
|  | (0.210) | (0.209) | (0.217) | (0.209) | (0.212) |
|  |  |  |  |  |  |
| Constant | -1.151 | -1.386 | -1.396 | -1.481+ | -0.701 |
|  | (0.890) | (0.873) | (0.906) | (0.868) | (0.900) |
|  |  |  |  |  |  |
| Observations | 110,237 | 110,237 | 110,237 | 110,237 | 110,237 |
| Year FE | YES | YES | YES | YES | YES |
| Pseudo R-squared | 0.057 | 0.055 | 0.061 | 0.054 | 0.057 |
| Chi-square | 650.319 | 619.793 | 685.857 | 619.723 | 644.210 |
| Prob > Chi2 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

Note: \*\*\* p<0.005, \*\* p<0.01, \* p<0.05, + p<0.1. Standard errors in parentheses.

Table S7. T-test by Group Before PSM

|  |  |  |  |
| --- | --- | --- | --- |
|  | Control group | Dissension group | Difference |
|  | N | Mean | N | Mean |  |
| Firmsize | 131283 | 21.827 | 1310 | 21.669 | 0.158\*\*\* |
| Leverage | 131283 | 0.471 | 1310 | 0.529 | -0.057\*\*\* |
| State | 131273 | 0.547 | 1310 | 0.639 | -0.092\*\*\* |
| BHList | 131283 | 0.107 | 1310 | 0.138 | -0.031\*\*\* |
| ROA | 131283 | 0.045 | 1310 | 0.028 | 0.018\*\*\* |
| TobinQ | 127181 | 1.883 | 1263 | 1.744 | 0.139\*\*\* |
| Ownership Concentration | 131253 | 0.177 | 1310 | 0.143 | 0.034\*\*\* |
| AR | 131283 | 0.020 | 1310 | 0.032 | -0.011\*\*\* |
| Guarantee | 131283 | -0.015 | 1310 | 0.006 | -0.021\*\*\* |
| Boardsize | 130212 | 9.487 | 1281 | 9.835 | -0.348\*\*\* |
| #Committee | 128167 | 3.846 | 1253 | 3.902 | -0.056\*\*\* |
| %Independent | 130212 | 0.362 | 1281 | 0.359 | 0.004\*\*\* |
| Tenure Dispersion | 130972 | 0.603 | 1310 | 0.694 | -0.091\*\*\* |
| CEO duality | 130250 | 0.214 | 1273 | 0.216 | -0.002 |
| Age | 131018 | 49.759 | 1310 | 48.792 | 0.967\*\*\* |
| Education | 131283 | 3.556 | 1310 | 3.605 | -0.049\*\*\* |
| #Directorship | 131283 | 1.777 | 1310 | 1.737 | 0.040 |
| Tenure | 131283 | 44.516 | 1310 | 42.581 | 1.935\*\* |
| Coworktime | 117918 | 31.733 | 1233 | 29.661 | 2.072\*\*\* |
| Gender | 131280 | 0.883 | 1310 | 0.874 | 0.009 |
| Paid | 130804 | 0.434 | 1304 | 0.327 | 0.108\*\*\* |
| Politician | 131283 | 0.243 | 1310 | 0.267 | -0.024\*\* |
| Academic | 131283 | 0.786 | 1310 | 0.674 | 0.112\*\*\* |
| Finance | 131283 | 0.134 | 1310 | 0.219 | -0.085\*\*\* |
| Foreign | 131283 | 0.049 | 1310 | 0.057 | -0.008 |
| Coopted | 117918 | 0.537 | 1233 | 0.560 | -0.023 |
| Independent | 131283 | 0.314 | 1310 | 0.316 | -0.002 |
| Non-executive | 131283 | 0.444 | 1310 | 0.593 | -0.149\*\*\* |

Note: \*\*\* p<0.01, \*\* p<0.01, \* p<0.05

Table S8. T-test by Group After PSM

|  |  |  |  |
| --- | --- | --- | --- |
|  | Control group | Dissension group | Difference |
|  | N | Mean | N | Mean |  |
| Firmsize | 1086 | 21.696 | 1086 | 21.745 | -0.048 |
| Leverage | 1086 | 0.514 | 1086 | 0.519 | -0.005 |
| State | 1086 | 0.654 | 1086 | 0.648 | 0.006 |
| BHList | 1086 | 0.134 | 1086 | 0.145 | -0.011 |
| ROA | 1086 | 0.030 | 1086 | 0.030 | -0.000 |
| TobinQ | 1086 | 1.724 | 1086 | 1.769 | -0.045 |
| Ownership Concentration | 1086 | 0.146 | 1086 | 0.147 | -0.001 |
| AR | 1086 | 0.028 | 1086 | 0.028 | -0.001 |
| Guarantee | 1086 | 0.015 | 1086 | 0.012 | 0.002 |
| Boardsize | 1086 | 9.836 | 1086 | 9.836 | -0.000 |
| #Committee | 1086 | 3.886 | 1086 | 3.913 | -0.027 |
| %Independent | 1086 | 0.359 | 1086 | 0.359 | 0.000 |
| Tenure Dispersion | 1086 | 0.690 | 1086 | 0.692 | -0.002 |
| CEO duality | 1086 | 0.203 | 1086 | 0.226 | -0.022 |
| Age | 1086 | 48.293 | 1086 | 48.721 | -0.428 |
| Education | 1086 | 3.640 | 1086 | 3.611 | 0.029 |
| #Directorship | 1086 | 1.733 | 1086 | 1.755 | -0.022 |
| Tenure | 1086 | 42.263 | 1086 | 41.557 | 0.705 |
| Coworktime | 1086 | 30.671 | 1086 | 29.953 | 0.719 |
| Gender | 1086 | 0.855 | 1086 | 0.869 | -0.015 |
| Paid | 1086 | 0.325 | 1086 | 0.321 | 0.004 |
| Politician | 1086 | 0.262 | 1086 | 0.266 | -0.005 |
| Academic | 1086 | 0.722 | 1086 | 0.731 | -0.009 |
| Finance | 1086 | 0.207 | 1086 | 0.220 | -0.013 |
| Foreign | 1086 | 0.062 | 1086 | 0.065 | -0.004 |
| Coopted | 1086 | 0.569 | 1086 | 0.581 | -0.012 |
| Independent | 1086 | 0.337 | 1086 | 0.340 | -0.003 |
| Non-executive | 1086 | 0.562 | 1086 | 0.573 | -0.011 |

Note: \*\*\* p<0.01, \*\* p<0.01, \* p<0.05

Table S9. PSM Sample-Main Effects at Director Level-Logit

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) | (5) |
| VARIABLES | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 |
| Degree | 0.009\*\*\* |  |  |  |  |
|  | (0.002) |  |  |  |  |
| Closeness |  | 0.005\*\* |  |  |  |
|  |  | (0.002) |  |  |  |
| Betweenness |  |  | 0.011\*\*\* |  |  |
|  |  |  | (0.002) |  |  |
| Eigenvector |  |  |  | 0.003\* |  |
|  |  |  |  | (0.001) |  |
| Principal |  |  |  |  | 0.199\*\*\* |
|  |  |  |  |  | (0.034) |
| Gender | 0.147 | 0.135 | 0.140 | 0.150 | 0.141 |
|  | (0.139) | (0.139) | (0.139) | (0.138) | (0.139) |
| Age | 0.007 | 0.005 | 0.007 | 0.004 | 0.006 |
|  | (0.006) | (0.006) | (0.006) | (0.006) | (0.006) |
| Education | -0.133 | -0.133 | -0.170+ | -0.131 | -0.153+ |
|  | (0.090) | (0.091) | (0.093) | (0.090) | (0.092) |
| Paid | 0.004 | 0.006 | -0.104 | 0.007 | -0.035 |
|  | (0.125) | (0.124) | (0.126) | (0.124) | (0.125) |
| Politician | -0.088 | -0.043 | -0.167 | -0.041 | -0.102 |
|  | (0.114) | (0.114) | (0.116) | (0.114) | (0.115) |
| Academic | 0.248 | 0.125 | 0.032 | 0.124 | 0.154 |
|  | (0.201) | (0.198) | (0.197) | (0.197) | (0.199) |
| Finance | 0.049 | 0.041 | 0.023 | 0.044 | 0.018 |
|  | (0.124) | (0.125) | (0.125) | (0.125) | (0.125) |
| Foreign | -0.015 | 0.012 | 0.003 | 0.009 | -0.025 |
|  | (0.198) | (0.198) | (0.202) | (0.198) | (0.199) |
| #Directorship | -0.016 | -0.003 | -0.044 | -0.001 | -0.025 |
|  | (0.037) | (0.036) | (0.039) | (0.036) | (0.038) |
| Tenure | -0.001 | -0.000 | -0.001 | 0.000 | -0.001 |
|  | (0.003) | (0.003) | (0.003) | (0.003) | (0.003) |
| Coopted | -0.025 | 0.023 | -0.112 | 0.033 | -0.049 |
|  | (0.112) | (0.110) | (0.113) | (0.110) | (0.112) |
| Coworktime | -0.001 | -0.002 | -0.001 | -0.002 | -0.001 |
|  | (0.003) | (0.003) | (0.003) | (0.003) | (0.003) |
| Independent | -0.116 | 0.049 | -0.373+ | 0.061 | -0.142 |
|  | (0.185) | (0.179) | (0.194) | (0.179) | (0.186) |
| Non-executive | 0.032 | 0.082 | -0.101 | 0.097 | 0.001 |
|  | (0.148) | (0.145) | (0.151) | (0.145) | (0.148) |
| Boardsize | -0.087\*\*\* | -0.018 | 0.004 | -0.016 | -0.041 |
|  | (0.030) | (0.026) | (0.026) | (0.026) | (0.027) |
| #Committee | 0.028 | 0.021 | 0.029 | 0.022 | 0.025 |
|  | (0.068) | (0.067) | (0.069) | (0.067) | (0.068) |
| %Independent | -1.033 | -0.528 | -0.374 | -0.392 | -0.737 |
|  | (1.160) | (1.150) | (1.150) | (1.148) | (1.157) |
| Tenure Dispersion | -0.041 | 0.035 | 0.091 | 0.042 | 0.024 |
|  | (0.167) | (0.165) | (0.168) | (0.165) | (0.167) |
| CEO duality | 0.080 | 0.110 | 0.034 | 0.121 | 0.072 |
|  | (0.115) | (0.114) | (0.115) | (0.114) | (0.114) |
| Firmsize | 0.044 | 0.022 | 0.030 | 0.021 | 0.013 |
|  | (0.054) | (0.054) | (0.053) | (0.054) | (0.054) |
| Leverage | 0.108 | 0.135 | 0.143 | 0.126 | 0.127 |
|  | (0.274) | (0.271) | (0.275) | (0.271) | (0.274) |
| State | -0.085 | -0.044 | -0.186+ | -0.025 | -0.135 |
|  | (0.109) | (0.108) | (0.110) | (0.106) | (0.110) |
| BHList | 0.017 | 0.022 | -0.038 | 0.024 | -0.032 |
|  | (0.151) | (0.151) | (0.152) | (0.152) | (0.152) |
| ROA | -0.281 | -0.155 | -0.471 | -0.077 | -0.413 |
|  | (0.902) | (0.898) | (0.903) | (0.894) | (0.910) |
| TobinQ | 0.038 | 0.040 | 0.035 | 0.040 | 0.037 |
|  | (0.041) | (0.040) | (0.040) | (0.040) | (0.041) |
| Ownership Concentration | -0.025 | 0.045 | 0.006 | 0.064 | 0.081 |
|  | (0.484) | (0.480) | (0.489) | (0.478) | (0.485) |
| AR | 1.135 | 0.848 | 0.982 | 0.856 | 0.966 |
|  | (1.263) | (1.252) | (1.257) | (1.256) | (1.249) |
| Guarantee | -0.163 | -0.168 | -0.101 | -0.189 | -0.165 |
|  | (0.326) | (0.322) | (0.324) | (0.323) | (0.323) |
|  |  |  |  |  |  |
| Constant | -0.159 | -0.528 | -0.358 | -0.531 | 0.476 |
|  | (1.128) | (1.130) | (1.134) | (1.130) | (1.157) |
|  |  |  |  |  |  |
| Observations | 2,172 | 2,172 | 2,172 | 2,172 | 2,172 |
| Year FE | YES | YES | YES | YES | YES |
| Pseudo R-squared | 0.015 | 0.008 | 0.027 | 0.007 | 0.018 |
| Chi-square | 40.176 | 20.999 | 66.854 | 19.764 | 46.613 |
| Prob > Chi2 | 0.290 | 0.978 | 0.001 | 0.987 | 0.111 |

Note: \*\*\* p<0.005, \*\* p<0.01, \* p<0.05, + p<0.1. Standard errors in parentheses.

Table S10. Moderating Effects of Analyst Coverage

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) | (5) |
| VARIABLES | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 |
| Analyst coverage | - | - | - | - | - |
|  |  |  |  |  |  |
| Degree  | 0.152\*\*\* |  |  |  |  |
|  | (0.047) |  |  |  |  |
| Degree\*Analyst coverage | -0.064+ |  |  |  |  |
|  | (0.038) |  |  |  |  |
| Closeness  |  | 0.340\*\*\* |  |  |  |
|  |  | (0.080) |  |  |  |
| Closeness\*Analyst coverage |  | -0.165\* |  |  |  |
|  |  | (0.081) |  |  |  |
| Betweenness  |  |  | 0.090\*\* |  |  |
|  |  |  | (0.033) |  |  |
| Betweenness\*Analyst coverage |  |  | -0.009 |  |  |
|  |  |  | (0.019) |  |  |
| Eigenvector  |  |  |  | 0.402\*\*\* |  |
|  |  |  |  | (0.077) |  |
| Eigenvector\*Analyst coverage |  |  |  | -0.361\*\*\* |  |
|  |  |  |  | (0.083) |  |
| Principal  |  |  |  |  | 0.217\*\*\* |
|  |  |  |  |  | (0.051) |
| Principal\*Analyst coverage |  |  |  |  | -0.070+ |
|  |  |  |  |  | (0.037) |
| Gender | -0.122+ | -0.130+ | -0.122+ | -0.124+ | -0.128+ |
|  | (0.069) | (0.069) | (0.069) | (0.069) | (0.069) |
| Age | -0.007\* | -0.008\* | -0.007\* | -0.008\*\* | -0.007\* |
|  | (0.003) | (0.003) | (0.003) | (0.003) | (0.003) |
| Education | -0.229\*\*\* | -0.233\*\*\* | -0.231\*\*\* | -0.230\*\*\* | -0.233\*\*\* |
|  | (0.044) | (0.044) | (0.044) | (0.044) | (0.044) |
| Paid | -0.858\*\*\* | -0.858\*\*\* | -0.857\*\*\* | -0.868\*\*\* | -0.855\*\*\* |
|  | (0.065) | (0.065) | (0.065) | (0.065) | (0.065) |
| Politician | -0.231\*\*\* | -0.222\*\*\* | -0.245\*\*\* | -0.218\*\*\* | -0.239\*\*\* |
|  | (0.057) | (0.057) | (0.058) | (0.057) | (0.058) |
| Academic | -0.910\*\*\* | -0.812\*\*\* | -0.944\*\*\* | -0.822\*\*\* | -0.876\*\*\* |
|  | (0.113) | (0.117) | (0.113) | (0.116) | (0.114) |
| Finance | 0.614\*\*\* | 0.605\*\*\* | 0.601\*\*\* | 0.604\*\*\* | 0.597\*\*\* |
|  | (0.061) | (0.061) | (0.061) | (0.061) | (0.061) |
| Foreign | 0.645\*\*\* | 0.647\*\*\* | 0.648\*\*\* | 0.655\*\*\* | 0.647\*\*\* |
|  | (0.124) | (0.124) | (0.124) | (0.124) | (0.124) |
| #Directorship | 0.013 | 0.012 | 0.005 | 0.019 | 0.007 |
|  | (0.022) | (0.022) | (0.022) | (0.022) | (0.022) |
| Tenure | 0.008\*\*\* | 0.008\*\*\* | 0.008\*\*\* | 0.008\*\*\* | 0.008\*\*\* |
|  | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) |
| Coopted | -0.247\*\*\* | -0.251\*\*\* | -0.245\*\*\* | -0.259\*\*\* | -0.246\*\*\* |
|  | (0.075) | (0.075) | (0.075) | (0.075) | (0.075) |
| Coworktime | -0.003 | -0.003 | -0.003 | -0.003 | -0.003 |
|  | (0.002) | (0.002) | (0.002) | (0.002) | (0.002) |
| Independent | -0.811\*\*\* | -0.791\*\*\* | -0.821\*\*\* | -0.778\*\*\* | -0.830\*\*\* |
|  | (0.058) | (0.057) | (0.059) | (0.057) | (0.059) |
|  |  |  |  |  |  |
| Proposal FE | YES | YES | YES | YES | YES |
| Observations | 17,980 | 17,980 | 17,980 | 17,980 | 17,980 |
| Pseudo R-squared | 0.076 | 0.077 | 0.076 | 0.078 | 0.077 |
| Chi-square | 775.020 | 783.632 | 773.513 | 795.883 | 781.603 |
| Prob > Chi2 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

Note: \*\*\* p<0.005, \*\* p<0.01, \* p<0.05, + p<0.1. Standard errors in parentheses.

Report coverage is the natural logarithm of the number of analysts (or analyst teams) following the firm at focal year. Director centrality variables are standardized to produce interactions.

Table S11. Moderating Effects of Report Coverage

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) | (5) |
| VARIABLES | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 |
| Report coverage | - | - | - | - | - |
|  |  |  |  |  |  |
| Degree  | 0.166\*\*\* |  |  |  |  |
|  | (0.047) |  |  |  |  |
| Degree\*Report coverage | -0.070\* |  |  |  |  |
|  | (0.033) |  |  |  |  |
| Closeness  |  | 0.354\*\*\* |  |  |  |
|  |  | (0.080) |  |  |  |
| Closeness\*Report coverage |  | -0.157\* |  |  |  |
|  |  | (0.069) |  |  |  |
| Betweenness  |  |  | 0.096\*\*\* |  |  |
|  |  |  | (0.034) |  |  |
| Betweenness\*Report coverage |  |  | -0.013 |  |  |
|  |  |  | (0.016) |  |  |
| Eigenvector  |  |  |  | 0.481\*\*\* |  |
|  |  |  |  | (0.081) |  |
| Eigenvector\*Report coverage |  |  |  | -0.396\*\*\* |  |
|  |  |  |  | (0.074) |  |
| Principal |  |  |  |  | 0.235\*\*\* |
|  |  |  |  |  | (0.051) |
| Principal\*Report coverage |  |  |  |  | -0.077\* |
|  |  |  |  |  | (0.032) |
| Gender | -0.123+ | -0.131+ | -0.123+ | -0.127+ | -0.130+ |
|  | (0.069) | (0.069) | (0.069) | (0.069) | (0.069) |
| Age | -0.007\* | -0.008\* | -0.007\* | -0.008\*\* | -0.007\* |
|  | (0.003) | (0.003) | (0.003) | (0.003) | (0.003) |
| Education | -0.229\*\*\* | -0.233\*\*\* | -0.231\*\*\* | -0.229\*\*\* | -0.233\*\*\* |
|  | (0.044) | (0.044) | (0.044) | (0.044) | (0.044) |
| Paid | -0.858\*\*\* | -0.858\*\*\* | -0.858\*\*\* | -0.865\*\*\* | -0.856\*\*\* |
|  | (0.065) | (0.065) | (0.065) | (0.065) | (0.065) |
| Politician | -0.232\*\*\* | -0.222\*\*\* | -0.244\*\*\* | -0.221\*\*\* | -0.239\*\*\* |
|  | (0.057) | (0.057) | (0.058) | (0.057) | (0.058) |
| Academic | -0.907\*\*\* | -0.806\*\*\* | -0.944\*\*\* | -0.788\*\*\* | -0.870\*\*\* |
|  | (0.113) | (0.118) | (0.113) | (0.117) | (0.114) |
| Finance | 0.615\*\*\* | 0.606\*\*\* | 0.600\*\*\* | 0.607\*\*\* | 0.598\*\*\* |
|  | (0.061) | (0.061) | (0.061) | (0.061) | (0.061) |
| Foreign | 0.644\*\*\* | 0.647\*\*\* | 0.648\*\*\* | 0.658\*\*\* | 0.647\*\*\* |
|  | (0.124) | (0.124) | (0.124) | (0.124) | (0.124) |
| #Directorship | 0.013 | 0.012 | 0.006 | 0.020 | 0.008 |
|  | (0.022) | (0.022) | (0.022) | (0.022) | (0.022) |
| Tenure | 0.008\*\*\* | 0.008\*\*\* | 0.008\*\*\* | 0.008\*\*\* | 0.008\*\*\* |
|  | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) |
| Coopted | -0.246\*\*\* | -0.250\*\*\* | -0.244\*\*\* | -0.256\*\*\* | -0.245\*\*\* |
|  | (0.075) | (0.075) | (0.075) | (0.075) | (0.075) |
| Coworktime | -0.003 | -0.003 | -0.003 | -0.003 | -0.003 |
|  | (0.002) | (0.002) | (0.002) | (0.002) | (0.002) |
| Independent | -0.811\*\*\* | -0.791\*\*\* | -0.823\*\*\* | -0.775\*\*\* | -0.831\*\*\* |
|  | (0.058) | (0.057) | (0.059) | (0.057) | (0.059) |
|  |  |  |  |  |  |
| Proposal FE | YES | YES | YES | YES | YES |
| Observations | 17,980 | 17,980 | 17,980 | 17,980 | 17,980 |
| Pseudo R-squared | 0.076 | 0.077 | 0.076 | 0.079 | 0.077 |
| Chi-square | 776.840 | 784.666 | 773.904 | 808.029 | 783.941 |
| Prob > Chi2 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

Note: \*\*\* p<0.005, \*\* p<0.01, \* p<0.05, + p<0.1. Standard errors in parentheses. Report coverage is the natural logarithm of the number of research report covering the firm at focal year. Director centrality variables are standardized to produce interactions.

Table S12. Moderating Effects of Internet Media Mention

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) | (5) |
| VARIABLES | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 |
| Media mention2 (MM2) | 0.109\*\* | 0.098\* | 0.108\*\* | 0.123\*\*\* | 0.111\*\* |
|  | (0.040) | (0.042) | (0.040) | (0.041) | (0.041) |
| Degree | 0.107\*\* |  |  |  |  |
|  | (0.039) |  |  |  |  |
| Degree\*MM2 | -0.036 |  |  |  |  |
|  | (0.046) |  |  |  |  |
| Closeness  |  | 0.274\*\*\* |  |  |  |
|  |  | (0.070) |  |  |  |
| Closeness\*MM2 |  | -0.136\*\*\* |  |  |  |
|  |  | (0.039) |  |  |  |
| Betweenness  |  |  | 0.084\*\*\* |  |  |
|  |  |  | (0.028) |  |  |
| Betweenness\*MM2 |  |  | -0.056+ |  |  |
|  |  |  | (0.034) |  |  |
| Eigenvector  |  |  |  | 0.222\*\*\* |  |
|  |  |  |  | (0.065) |  |
| Eigenvector\*MM2 |  |  |  | -0.083\* |  |
|  |  |  |  | (0.038) |  |
| Principal  |  |  |  |  | 0.171\*\*\* |
|  |  |  |  |  | (0.043) |
| Principal\*MM2 |  |  |  |  | -0.091\* |
|  |  |  |  |  | (0.036) |
| Gender | -0.108 | -0.110 | -0.113 | -0.098 | -0.109 |
|  | (0.069) | (0.069) | (0.069) | (0.069) | (0.069) |
| Age | -0.008\* | -0.008\*\* | -0.008\* | -0.008\*\* | -0.008\* |
|  | (0.003) | (0.003) | (0.003) | (0.003) | (0.003) |
| Education | -0.234\*\*\* | -0.231\*\*\* | -0.234\*\*\* | -0.234\*\*\* | -0.236\*\*\* |
|  | (0.044) | (0.044) | (0.044) | (0.044) | (0.044) |
| Paid | -0.866\*\*\* | -0.859\*\*\* | -0.868\*\*\* | -0.872\*\*\* | -0.861\*\*\* |
|  | (0.066) | (0.066) | (0.066) | (0.065) | (0.066) |
| Politician | -0.244\*\*\* | -0.237\*\*\* | -0.252\*\*\* | -0.237\*\*\* | -0.253\*\*\* |
|  | (0.058) | (0.058) | (0.058) | (0.058) | (0.058) |
| Academic | -0.914\*\*\* | -0.827\*\*\* | -0.937\*\*\* | -0.854\*\*\* | -0.880\*\*\* |
|  | (0.113) | (0.117) | (0.113) | (0.115) | (0.114) |
| Finance | 0.618\*\*\* | 0.617\*\*\* | 0.609\*\*\* | 0.616\*\*\* | 0.607\*\*\* |
|  | (0.061) | (0.061) | (0.061) | (0.061) | (0.061) |
| Foreign | 0.601\*\*\* | 0.525\*\*\* | 0.597\*\*\* | 0.569\*\*\* | 0.567\*\*\* |
|  | (0.126) | (0.129) | (0.126) | (0.127) | (0.127) |
| #Directorship | 0.007 | 0.009 | 0.005 | 0.010 | 0.003 |
|  | (0.022) | (0.022) | (0.022) | (0.022) | (0.022) |
| Tenure | 0.008\*\*\* | 0.008\*\*\* | 0.008\*\*\* | 0.008\*\*\* | 0.008\*\*\* |
|  | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) |
| Coopted | -0.241\*\*\* | -0.236\*\*\* | -0.236\*\*\* | -0.242\*\*\* | -0.231\*\*\* |
|  | (0.075) | (0.075) | (0.075) | (0.075) | (0.075) |
| Coworktime | -0.003 | -0.003 | -0.003 | -0.003 | -0.003 |
|  | (0.002) | (0.002) | (0.002) | (0.002) | (0.002) |
| Independent | -0.793\*\*\* | -0.778\*\*\* | -0.808\*\*\* | -0.769\*\*\* | -0.814\*\*\* |
|  | (0.059) | (0.057) | (0.059) | (0.057) | (0.059) |
|  |  |  |  |  |  |
| Proposal FE | YES | YES | YES | YES | YES |
| Observations | 17,980 | 17,980 | 17,980 | 17,980 | 17,980 |
| Pseudo R-squared | 0.077 | 0.079 | 0.077 | 0.078 | 0.078 |
| Chi-square | 784.404 | 804.614 | 788.355 | 793.394 | 797.112 |
| Prob > Chi2 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

Note: \*\*\* p<0.005, \*\* p<0.01, \* p<0.05, + p<0.1. Standard errors in parentheses. Media mention2 is the natural logarithm of the number of articles containing the director’s name in influencing websites. Director centrality variables are standardized to produce interactions.

Table S13. Effects of Dissension on Director Centrality

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) | (5) |
| VARIABLES | Degree | Closeness | Betweenness | Eigenvector | Principal  |
| Dissent (t-1) | 1.210 | -1.419+ | -0.534 | 0.223 | -0.014 |
|  | (0.897) | (0.828) | (0.992) | (1.248) | (0.044) |
| Gender | -14.923\*\* | -32.578\*\*\* | 4.816 | -59.304\*\*\* | -1.583\*\*\* |
|  | (5.556) | (5.367) | (4.879) | (7.581) | (0.263) |
| Age | 0.088 | -0.783+ | -0.687\* | -0.649 | -0.033+ |
|  | (0.414) | (0.403) | (0.307) | (0.590) | (0.019) |
| Education | -0.221 | -0.668+ | 0.038 | 0.416 | -0.010 |
|  | (0.380) | (0.350) | (0.407) | (0.512) | (0.019) |
| Paid | 3.141\*\*\* | 2.063\*\*\* | 6.775\*\*\* | 0.658 | 0.197\*\*\* |
|  | (0.570) | (0.528) | (0.653) | (0.754) | (0.028) |
| Politician | -0.673 | 0.343 | 0.947 | 7.997\* | 0.120 |
|  | (2.599) | (2.894) | (2.822) | (3.867) | (0.135) |
| Academic | -15.922\*\*\* | -4.711\*\*\* | 2.573\*\*\* | -3.397\*\*\* | -0.337\*\*\* |
|  | (0.529) | (0.480) | (0.428) | (0.745) | (0.023) |
| Finance | 7.468\* | 6.504\* | 14.203\*\*\* | 9.742\* | 0.582\*\*\* |
|  | (3.274) | (3.022) | (4.482) | (3.971) | (0.178) |
| Foreign | 4.869\*\*\* | 4.333\*\*\* | 8.729\*\*\* | 4.554\*\*\* | 0.349\*\*\* |
|  | (1.229) | (1.070) | (1.645) | (1.401) | (0.064) |
| #Directorship | 1.067\*\*\* | 0.791\*\*\* | 2.310\*\*\* | 0.695\*\*\* | 0.075\*\*\* |
|  | (0.129) | (0.122) | (0.147) | (0.169) | (0.006) |
| Tenure | -0.073\*\*\* | -0.051\*\*\* | -0.130\*\*\* | -0.066\*\*\* | -0.005\*\*\* |
|  | (0.016) | (0.014) | (0.021) | (0.017) | (0.001) |
| Coopted | 9.266\*\*\* | 4.248\*\*\* | 18.227\*\*\* | 4.029\*\*\* | 0.548\*\*\* |
|  | (0.579) | (0.468) | (0.719) | (0.638) | (0.028) |
| Coworktime | -0.093\*\*\* | -0.034\*\*\* | -0.137\*\*\* | -0.040\*\*\* | -0.005\*\*\* |
|  | (0.009) | (0.008) | (0.009) | (0.011) | (0.000) |
| Independent | 18.503\*\*\* | 3.826\* | 34.810\*\*\* | 2.948 | 0.913\*\*\* |
|  | (2.059) | (1.659) | (2.664) | (2.053) | (0.099) |
| Non-executive | 7.516\*\*\* | 2.703\*\*\* | 13.071\*\*\* | 1.876\* | 0.386\*\*\* |
|  | (0.647) | (0.553) | (0.772) | (0.764) | (0.031) |
| Boardsize | 5.863\*\*\* | 1.476\*\*\* | -0.676\*\*\* | 1.718\*\*\* | 0.130\*\*\* |
|  | (0.147) | (0.132) | (0.184) | (0.183) | (0.007) |
| #Committee | 0.310 | -0.245 | -0.341 | 0.664\* | 0.004 |
|  | (0.256) | (0.241) | (0.271) | (0.328) | (0.012) |
| %Independent | 6.957+ | 26.922\*\*\* | -17.134\*\*\* | 17.861\*\*\* | 0.603\*\*\* |
|  | (4.189) | (3.703) | (4.442) | (5.019) | (0.197) |
| Tenure Dispersion | 33.655\*\*\* | 7.733\*\*\* | 0.725 | 8.534\*\*\* | 0.781\*\*\* |
|  | (0.556) | (0.496) | (0.519) | (0.713) | (0.025) |
| CEO duality | 5.748\*\*\* | 2.855\*\*\* | 8.819\*\*\* | 2.066\*\*\* | 0.301\*\*\* |
|  | (0.455) | (0.389) | (0.515) | (0.530) | (0.022) |
| Firmsize | -1.542\*\*\* | 2.234\*\*\* | -4.301\*\*\* | 1.280\*\*\* | -0.028 |
|  | (0.400) | (0.349) | (0.535) | (0.449) | (0.020) |
| Leverage | -5.098\*\*\* | -6.946\*\*\* | -1.442 | -3.560\* | -0.279\*\*\* |
|  | (1.478) | (1.332) | (1.743) | (1.810) | (0.074) |
| State | 13.993\*\*\* | 8.975\*\*\* | 23.936\*\*\* | 7.785\*\*\* | 0.846\*\*\* |
|  | (0.904) | (0.793) | (1.175) | (0.952) | (0.046) |
| BHList | 14.542\*\*\* | 7.832\*\*\* | 25.817\*\*\* | 9.729\*\*\* | 0.888\*\*\* |
|  | (1.387) | (1.134) | (1.948) | (1.581) | (0.072) |
| ROA | 2.461 | -5.604\* | 8.784\*\*\* | 3.364 | 0.108 |
|  | (2.596) | (2.395) | (2.602) | (3.653) | (0.125) |
| TobinQ | -0.068 | -0.550\*\*\* | -0.214 | -1.059\*\*\* | -0.029\*\*\* |
|  | (0.126) | (0.123) | (0.132) | (0.166) | (0.006) |
| Ownership Concentration | 6.031\* | 0.610 | 2.167 | 2.977 | 0.176 |
|  | (3.065) | (2.796) | (3.895) | (3.581) | (0.158) |
| AR | -18.239\*\*\* | -7.558 | 3.513 | 10.246 | -0.225 |
|  | (5.269) | (4.912) | (5.271) | (7.165) | (0.255) |
| Guarantee | -1.972\* | -1.060 | -0.761 | 0.847 | -0.050 |
|  | (0.910) | (0.842) | (0.914) | (1.263) | (0.044) |
| Constant | -21.428 | 34.787 | 97.657\*\*\* | 59.863+ | 0.343 |
|  | (25.358) | (24.416) | (21.230) | (35.303) | (1.195) |
|  |  |  |  |  |  |
| Observations | 83,152 | 83,152 | 83,152 | 83,152 | 83,152 |
| R-squared | 0.256 | 0.053 | 0.231 | 0.237 | 0.216 |
| Number of pid | 25,771 | 25,771 | 25,771 | 25,771 | 25,771 |
| Director FE | YES | YES | YES | YES | YES |
| Year FE | YES | YES | YES | YES | YES |

Note: \*\*\* p<0.005, \*\* p<0.01, \* p<0.05, + p<0.1. Standard errors in parentheses.



Figure S1. Kernel density plot (Before PSM)



Figure S2. Kernel density plot (After PSM)