

CEO EXPERIENCE AND ADJUSTMENT SPEED TOWARD TARGET LEVERAGE: THE CASE OF VIETNAM

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Abstract - This paper studies the connection between CEO experience and Vietnamese listed firms' capital adjustment behavior. In the context of Vietnam, we find that experienced CEOs slow down the speed of obtaining the desired ratio of debt, after analyzing a sample of 694 public companies from 2010 to 2019. This pattern can be seen for both under- and over-the-target enterprises when leverage is measured by book and market value. Our findings are in line with other research that shows a negative correlation between CEOs' years of experience and debt levels. We expect that for experienced CEOs, the adjustment benefits are not large enough to substitute for adjustment costs, so they choose not to offset the deviation to the target leverage quicker.

Key words - Experience; CEOs; adjustment speed; target leverage; Vietnam

1. Introduction

The role of experienced chief executive officers (CEOs) in financial decision of firms has greatly attracted researchers. For instance, [1] argues that experienced CEOs tend to make financial policies more actively and spend their company's money in ways that are less dependent on cash flows. [2] provides evidence that experience in the CEO position is negatively related to debt. They try to save more money, and make fewer investments than other businesses. Both executive appointments and corporate policy are influenced by prior experience of CEOs, with higher effects found in weakly governed businesses. [3] focuses on mergers and acquisition deals only and finds that CEOs with more experience are more successful in raising outside capital despite strict borrowing conditions and in case of excessive information asymmetry, CEO experience is especially beneficial. However, the evidence on adjustment behavior toward the target leverage is rare. Until to this point, our understanding of the dynamic capital adjustment over a CEO's career has been limited. Our investigation of the impact of CEOs' level of experiences and the target leverage approaching decisions they make will advance the understanding of this process.

Similar to other emerging markets, Vietnam has issues with information asymmetry and lax corporate governance. Also, the corporate governance in the Asian market is insufficient to resolve the agency problems, as suggested by studies of [4] and [5].

Our study shed lights on the field by providing an evidence of a typical emerging market. Using a sample of 694 Vietnamese listed firms during the period of 2010-2019, we find that experienced CEOs slow down the adjustment speed toward the target leverage. In this emerging country, CEOs with more experience tend to postpone adjusting the

firm leverage ratio, which may due to high adjustment costs (compared to adjustment benefits) and/or they often have superior skills and wider network to raise other funds rather than debts, in case their firms are under the target. Also, this result is understandable given the fact that existing studies have found a negative relationship between CEO experience and level of debt (e.g., [2]). Our result implies that, the more time a CEO in role, a lower speed on target-approaching decision that he or she makes.

2. Literature review and hypothesis development

As is previously stated, there is no obvious proof of a connection between CEO experience and adjustment speed prior to our current study. Thus, we have to develop our hypothesis based on studies investigating the relationship between CEO experience and capital structure decisions. Both [1], [2] and [4] agree that in firms managed by CEOs with a lot of experience, the financial decisions are made more actively. On one hand, [1] argue that since the majority of the CEOs in their sample have financial backgrounds, these CEOs have advantages in maintaining less cash but increasing their leverage in the enterprises they are in charge of. According to the authors, CEOs with financial experience can easily raise outside funds, especially in times of tighter credit markets, indicating that they have stronger access to capital markets. These findings support the notion that because these CEOs easier access to financial markets, they can adopt more risky/aggressive financial practices (keep less cash and increase level of debt). On the other hand, [2] document that CEOs with distress experience tend to issue less debt and keep more cash in hands, which suggests that experienced CEOs are more likely to adopt a type of conservative management policy. According to a recent study of [4] for Indonesian businesses, an increase in CEO experience will speed up the corporate adjustment process toward the desired amount of debt.

Based on the mixed evidence, we propose our first hypothesis as follows:

H1a: Experienced CEOs have a positive impact on the adjustment speed toward the target leverage of Vietnamese firms.

H1b: Experienced CEOs have a negative impact on the adjustment speed toward the target leverage of Vietnamese firms.

3. Methodology

3.1. Data

Our data spans the period 2010–2019 for firms listed on Ho Chi Minh and Ha Noi stock exchanges, combining 4,112 firm-year observations. The data for firm characteristics is

collected from Finpro database while CEO-related data is hand collected. Because of the difference in accounting and operation, we exclude firms in the financial sector and utilities. All variables are winsorized at the 1st and 99th percentiles to eliminate outliers.

3.2. Model

We follow previous studies, including [6] and [7] to use partial adjustment models:

$$\begin{aligned} \Delta LEV_{i,t} &= LEV_{i,t} - LEV_{i,t-1} \\ &= \alpha_0 + (LEV_{i,t}^* - LEV_{i,t-1}) + \omega_{i,t} \end{aligned} \quad (1)$$

Where $LEV_{i,t}^*$ is the target leverage of firm i at time t ; and, $LEV_{i,t}$ is the debt ratio of the firm i at time t .

We measure firm leverage by both book and market value.

Eq. (1) can be re-written as:

$$\Delta LEV_{i,t} = \alpha_0 + \lambda \text{ DEV}_{i,t} + \omega_{i,t} \quad (2)$$

Where λ is the adjustment speed toward the target leverage, and $\text{DEV}_{i,t} = LEV_{i,t}^* - LEV_{i,t-1}$.

Since $LEV_{i,t}^*$ is unobservable, we use its predicted value as the target leverage:

$$LEV_{i,t}^* = \hat{\beta} X_{i,t-1} + \varepsilon_{i,t} \quad (3)$$

where $X_{i,t,j}$ is a set of leverage determinants including firm size (Size), market-to-book ratio (MTB), profitability (Profit), tangibility (Tang), non-debt tax shield (Ndts), and median leverage of the industry (IML).

All variables' definitions and measurements are provided in Appendix A.

To capture the role of CEO experience on adjustment speed, we use the next model:

$$\lambda_{i,t} = \lambda_0 + \beta_1 \text{CEOexp}_{i,t-1} + \theta Z_{i,t-1} \quad (4)$$

Where $\text{CEOexp}_{i,t-1}$ denotes lagged CEO experience measures for firm i . $Z_{i,t,j}$ is a set of adjustment determinants including firm size (Size), market-to-book ratio (MTB), profitability (Profit), tangibility (Tang), non-debt tax shield (Ndts), and median leverage of the industry (IML), CEO

age (CEOage), CEO education (CEOedu), independent ratio (Indep), duality (Dual), gender diversification (Diver).

From the Eq. (2) and (4), we have:

$$\begin{aligned} \Delta LEV_{i,t} &= \alpha_0 + \\ &(\lambda_0 + \beta_1 \text{CEOexp}_{i,t-1} + \theta Z_{i,t-1}) \times \text{DEV}_{i,t} + \omega_{i,t} \end{aligned} \quad (5)$$

Following [8] and [9], we employ pooled OLS regression with bootstrapped standard errors and unobservable country and year fixed effects to deal with Eq. (5).

4. Results

4.1. Variable summarize

The Table 1 displays the statistical summary of all variables used in our model. As shown, the mean of book leverage is lower than the mean of market leverage at 0.17 and 0.27, respectively. The average number of CEOexp is 2.65.

Table 1. Variable statistic description

| Variable | Obs | Mean | S.D | Min | Max |
|-----------|-------|-------|------|-------|-------|
| TDA | 4,112 | 0.17 | 0.16 | 0.00 | 0.69 |
| TDM | 4,112 | 0.27 | 0.27 | 0.00 | 1.49 |
| CEOexp | 3,547 | 2.65 | 0.68 | 0.00 | 3.58 |
| Size | 4,112 | 27.27 | 1.65 | 23.68 | 31.58 |
| MTB | 4,112 | 0.19 | 0.19 | 0.00 | 0.86 |
| Profit | 4,112 | 0.79 | 0.59 | 0.00 | 3.25 |
| Tang | 4,111 | 0.11 | 0.09 | -0.09 | 0.42 |
| Ndts | 4,112 | 0.25 | 0.29 | 0.00 | 1.32 |
| bookIML | 4,112 | 0.20 | 0.06 | 0.04 | 0.33 |
| marketIML | 4,112 | 0.32 | 0.14 | 0.04 | 0.73 |
| CEOage | 3,661 | 3.89 | 0.17 | 3.43 | 4.22 |
| CEOedu | 3,659 | 1.44 | 0.15 | 0.69 | 1.79 |
| Indep | 3,666 | 0.17 | 0.22 | 0.00 | 0.80 |
| Dual | 4,109 | 0.08 | 0.17 | -0.33 | 0.81 |
| Diver | 3,666 | 0.15 | 0.16 | 0.00 | 0.80 |

This table presents descriptive statistics for all variables used in our regressions during the period from 2010 to 2019. Variable definitions and measurements are available in Appendix A

Table 2. Correlation matrix

| | TDA | TDM | CEOexp | Size | MTB | Profit | Tang | Ndts | bookIML | marketIML | CEOage | CEOedu | Indep | Dual | Diver |
|-----------|-------|-------|--------|-------|-------|--------|-------|-------|---------|-----------|--------|--------|-------|------|-------|
| TDA | 1.00 | | | | | | | | | | | | | | |
| TDM | 0.77 | 1.00 | | | | | | | | | | | | | |
| CEOexp | -0.04 | -0.07 | 1.00 | | | | | | | | | | | | |
| Size | 0.39 | 0.26 | 0.04 | 1.00 | | | | | | | | | | | |
| MTB | 0.26 | 0.07 | 0.03 | 0.03 | 1.00 | | | | | | | | | | |
| Profit | 0.06 | -0.26 | 0.07 | 0.16 | 0.22 | 1.00 | | | | | | | | | |
| Tang | -0.14 | -0.28 | 0.11 | -0.06 | 0.35 | 0.48 | 1.00 | | | | | | | | |
| Ndts | -0.07 | -0.14 | 0.04 | -0.16 | 0.51 | 0.16 | 0.40 | 1.00 | | | | | | | |
| bookIML | 0.23 | 0.18 | 0.00 | 0.17 | 0.15 | -0.01 | 0.07 | 0.14 | 1.00 | | | | | | |
| marketIML | 0.16 | 0.29 | -0.01 | 0.06 | -0.01 | -0.24 | -0.02 | -0.03 | 0.68 | 1.00 | | | | | |
| CEOage | -0.02 | -0.07 | 0.52 | -0.02 | 0.06 | 0.10 | 0.15 | 0.14 | -0.01 | -0.09 | 1.00 | | | | |
| CEOedu | 0.05 | 0.02 | -0.09 | 0.13 | -0.06 | 0.01 | -0.08 | -0.03 | 0.04 | 0.04 | -0.13 | 1.00 | | | |
| Indep | 0.00 | 0.00 | -0.06 | -0.03 | 0.03 | 0.00 | 0.02 | -0.05 | 0.01 | -0.01 | -0.11 | -0.01 | 1.00 | | |
| Dual | -0.23 | -0.16 | 0.10 | -0.07 | -0.17 | -0.05 | -0.04 | -0.18 | -0.26 | -0.16 | 0.11 | -0.04 | -0.03 | 1.00 | |
| Diver | -0.02 | -0.08 | 0.00 | 0.02 | -0.04 | 0.12 | 0.03 | -0.05 | -0.12 | -0.21 | -0.02 | -0.05 | 0.02 | 0.03 | 1.00 |

This table presents pairwise correlation matrix between variables used in our regressions during the period from 2010 to 2019. Variable definitions and measurements are available in Appendix A

Next, pairwise correlation coefficients between variables are checked carefully to ensure no serious problem of autocorrelation. As can be seen in Table 2, the correlation coefficients of pairs of independent variables are relatively low.

4.2. Base-line results

This section examines the effects of experience on the adjustment behaviors of observed firms for full sample. We run Eq.(5) for book and market leverage and present the results in Table 3.

As can be seen, the coefficients of interaction terms between deviation and CEOexp are statistically significant and negative (the coefficients of CEOexp^xdev are -0.007 and -0.036 for book and market leverage, respectively), implying that the CEO experience negatively relates to the speed. When controlling for more additional variables (Columns 3 and 4), the results are hold strongly, confirming that the more experience CEOs get, the less active in their adjustment decisions. These outcomes support our hypothesis H1b.

Table 3. CEO experience and adjustment speed

| | Δ TDA | Δ TDM | Δ TDA | Δ TDM |
|-------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| CEOexp ^x dev | -0.007 ^b (0.003) | -0.036 ^a (0.013) | -0.007 ^c (0.004) | -0.036 ^a (0.012) |
| Size ^x dev | -0.003 ^b (0.001) | 0.005 (0.006) | -0.004 ^b (0.002) | 0.003 (0.006) |
| Tang ^x dev | -0.080 ^a (0.023) | -0.197 ^a (0.051) | -0.076 ^a (0.023) | -0.192 ^a (0.051) |
| MTB ^x dev | 0.011 ^b (0.005) | -0.033 ^b (0.016) | 0.010 ^b (0.005) | -0.032 ^b (0.015) |
| Profit ^x dev | -0.006 (0.034) | -0.143 (0.142) | -0.005 (0.034) | -0.145 (0.143) |
| Ndts ^x dev | 0.014 (0.013) | 0.031 (0.033) | 0.012 (0.014) | 0.028 (0.033) |
| IML ^x dev | 0.410 ^a (0.045) | 0.116 (0.084) | 0.414 ^a (0.046) | 0.118 (0.084) |
| CEOage ^x dev | 0.027 ^a (0.010) | 0.061 (0.040) | 0.024 ^b (0.010) | 0.052 (0.040) |
| Indep ^x dev | 0.002 (0.013) | 0.027 (0.047) | 0.001 (0.013) | 0.024 (0.047) |
| Dual ^x dev | 0.002 (0.007) | 0.003 (0.024) | 0.002 (0.007) | 0.003 (0.024) |
| CEOedu ^x dev | | | 0.018 (0.014) | 0.052 (0.057) |
| Diver ^x dev | | | 0.011 (0.017) | 0.007 (0.057) |
| Constant | -0.013 ^a (0.005) | 0.085 ^a (0.014) | -0.013 ^a (0.005) | 0.085 ^a (0.014) |
| Obs. | 5329 | 5333 | 5325 | 5329 |
| R2 | 0.053 | 0.190 | 0.053 | 0.191 |

This table presents regression results of Eq. (5) for full sample. ^a, ^b, and ^c indicate significance at the 10%, 5%, and 1% levels, respectively

4.3. One-step regressions

From part 4.2., we know that experienced CEOs tend to slow down the adjustment speed toward the target leverage. In this section, we expand our investigation by running the dynamic model as follows to check the possible impact of CEO experience on the level of debt firms acquire.

$$LEV_{i,t} = \alpha_0 + \beta_1 LEV_{i,t-1} + \beta_2 CEOexp_{i,t-1} + \beta_3 Z_{i,t-1} + \omega_{i,t} \quad (6)$$

To deal with the Eq. (6), we employ the method of system-GMM and present the regression results in Table 4. As can be seen from the table, the coefficient for the CEOexp is negative in all columns, suggesting that CEOs with high experience tend to use less debt.

Table 4. Results with one-step regression

| | TDA | TDM | TDA | TDM |
|-----------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| L.TDA | 0.778 ^a (0.031) | | 0.776 ^a (0.032) | |
| L.TDM | | 0.370 ^a (0.044) | | 0.368 ^a (0.044) |
| CEOexp | -0.004 ^b (0.002) | -0.011 ^c (0.006) | -0.004 ^b (0.002) | -0.011 ^c (0.006) |
| Size | 0.008 ^a (0.002) | 0.027 ^a (0.004) | 0.008 ^a (0.002) | 0.028 ^a (0.005) |
| Tang | 0.058 ^a (0.013) | 0.128 ^a (0.030) | 0.058 ^a (0.013) | 0.121 ^a (0.030) |
| MTB | 0.009 ^a (0.003) | -0.031 ^a (0.011) | 0.009 ^a (0.003) | -0.028 ^a (0.011) |
| Profit | -0.171 ^a (0.025) | -0.599 ^a (0.072) | -0.173 ^a (0.025) | -0.609 ^a (0.072) |
| Ndts | -0.022 ^a (0.005) | 0.01 (0.024) | -0.021 ^a (0.005) | 0.01 (0.023) |
| BookIML | 0.123 ^a (0.026) | | 0.117 ^a (0.036) | |
| MarketIML | | 0.276 ^a (0.058) | | 0.259 ^a (0.058) |
| CEOage | 0.006 (0.009) | -0.028 (0.033) | 0.005 (0.009) | -0.037 (0.033) |
| Indep | 0.006 (0.006) | -0.005 (0.025) | 0.006 (0.006) | -0.005 (0.025) |
| Dual | 0.003 (0.003) | 0.013 (0.012) | 0.003 (0.003) | 0.014 (0.012) |
| CEOedu | | | -0.014 (0.010) | -0.073 ^b (0.036) |
| Diver | | | -0.002 (0.008) | -0.074 ^b (0.032) |
| Obs. | 5348 | 5333 | 5344 | 5329 |
| AR2 | 0.538 | 0.092 | 0.538 | 0.087 |
| Hansen | 0.100 | 0.093 | 0.110 | 0.105 |

This table presents regression results of Eq. (6) for full sample. ^a, ^b, and ^c indicate significance at the 10%, 5%, and 1% levels, respectively

AR(2) test confirms that there is not the serial correlation of the error term of order 2. Besides, Hansen J-Test for over identification problem gives favorable results with p-value higher than 0.05 thresholds.

Thus, for the observed firms, experienced CEOs tend to use less debt. We expect that expert CEOs have skills and wide network to raise other funds rather than debts to finance business activities.

4.4. Over- versus. Under-the-target firms

To further check the robustness of our finding, we rerun Eq. (5) for two sub-samples: under and over the target. To separating firms into the two groups, we use the deviation from the target, which defined by the Eq. (3).

If the deviation is larger than 0, firms are under-levered and vice versa. As shown, the number of under-the-target firms in our sample overweight that of over-the-target.

Columns 1 and 2 of Table 5 present the regression outcome for over-levered firms, and columns 3 and 4 are the results for under-levered firms.

Table 5. Over- vs. under-the-target firms

| | over-the-target | | under-the-target | |
|-------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| | ΔTDA | ΔTDM | ΔTDA | ΔTDM |
| CEOexp ^x dev | -0.029 (0.029) | -0.092 ^b (0.045) | -0.007 ^b (0.003) | -0.024 ^b (0.010) |
| Size ^x dev | -0.013 (0.019) | -0.043 (0.030) | -0.003 ^b (0.002) | -0.0001 (0.004) |
| Tang ^x dev | -0.084 (0.103) | 0.353 ^c (0.190) | -0.068 ^a (0.025) | -0.202 ^a (0.038) |
| MTB ^x dev | 0.133 (0.146) | -0.984 ^a (0.186) | 0.007 (0.005) | 0.019 ^c (0.010) |
| Profit ^x dev | -0.683 (0.453) | -0.872 (0.605) | 0.02 (0.036) | -0.255 ^a (0.080) |
| Ndts ^x dev | 0.077 (0.097) | -0.340 ^b (0.145) | 0.016 (0.014) | 0.059 ^b (0.026) |
| IML ^x dev | -2.206 ^b (0.939) | 0.873 ^a (0.291) | 0.462 ^a (0.050) | 0.064 (0.054) |
| CEOage ^x dev | 0.171 (0.124) | 0.439 ^b (0.174) | 0.022 ^b (0.010) | 0.039 (0.027) |
| Indep ^x dev | 0.28 (0.197) | 0.203 (0.272) | 0.017 (0.014) | 0.031 (0.037) |
| Dual ^x dev | 0.107 (0.110) | 0.281 (0.180) | -0.001 (0.013) | -0.029 (0.029) |
| CEOedu ^x dev | 0.059 (0.057) | 0.001 (0.078) | 0.001 (0.007) | -0.009 (0.016) |
| Diver ^x dev | 0.339 ^a (0.128) | 0.465 ^b (0.234) | 0.004 (0.017) | -0.013 (0.040) |
| Constant | -0.004 (0.014) | 0.103 ^a (0.039) | -0.015 ^a (0.006) | 0.133 ^a (0.014) |
| Obs. | 942 | 1217 | 4383 | 4112 |
| R2 | 0.049 | 0.344 | 0.035 | 0.096 |

This table presents regression results of Eq. (5) for 2 sub-samples: over- and under-levered. ^a, ^b, and ^c indicate significance at the 10%, 5%, and 1% levels, respectively

In all columns, a consistent negatively link between CEO experience and adjustment speed can be found. Thus, we conclude that the unfavorable association between the level of CEO experience and adjustment speed toward the optimal capital structure can be found in both under- and over-the-target enterprises.

5. Conclusion

Using the sample of Vietnamese quoted firms from 2010 to 2019, our paper finds that high experienced CEOs reduce the adjustment speed toward the target leverage. This finding contributes to the existing literature by providing the first ever evidence of the negative association between CEO experience with adjustment speed of firms from Vietnam - an emerging market. This pattern can be seen for both under- and over-the-target enterprises when leverage is measured by book and market value.

Our findings are supported by [2] that also show a negative correlation between CEOs' years of experience and debt levels. We expect that experienced CEOs may find the adjustment benefits not being large enough to substitute for adjustment costs, so they choose not to offset the deviation to the target leverage quicker. And since most of experienced CEOs have superior skills and wider network, they can raise other sources of fund to substitute for debts.

Our model only focuses on CEO experience in the current companies but previous experience. Moreover, due to the majority of firms listed in Vietnamese stock markets are large in size, our analysis may not fully capture the market's story. As a result, researching this issue for medium and small-sized businesses as well as unlisted Vietnamese companies, and taking into account the whole CEO experience during their career life, will be the next stage. These extensions are left open for further study.

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REFERENCE

- [1] C. Custódio and D. Metzger, "Financial expert CEOs: CEO's work experience and firm's financial policies", *Journal of Financial Economics*, vol. 114, no. 1, pp. 125-154, 2014.
- [2] A. Dittmar and R. Duchin, "Looking in the rearview mirror: The effect of managers' professional experience on corporate financial policy", *Review of Financial Studies*, vol. 29, no. 3, pp. 565-602, 2016.
- [3] C. Custódio and D. Metzger, "How do CEOs matter? The effect of industry expertise on acquisition returns", *Review of Financial Studies*, vol. 26, no. 8, pp. 2008-2047, 2013.
- [4] M. Chua, N. H. A. Razak, A. M. Nassir, and M. H. Yahya, "Dynamic capital structure in Indonesia: Does the education and experience of CEOs matter?", *Asia Pacific Management Review*, vol. 27, no. 1, pp. 58-68, 2022.
- [5] S. Claessens and J. P. Fan, "Corporate governance in Asia: A survey", *International Review of Finance*, vol. 3, no. 2, pp. 71-103, 2002.
- [6] M. J. Flannery and K. P. Rangan, "Partial adjustment toward target capital structures", *Journal of Financial Economics*, vol. 79, no. 3, pp. 469-506, 2006.

- [7] Ö. Öztekin and M. J. Flannery, "Institutional determinants of capital structure adjustment speeds", *Journal of Financial Economics*, vol. 103, no. 1, pp. 88–112, 2012.
- [8] G. Çolak, A. Gungoraydinoglu, and Ö. Öztekin, "Global leverage adjustments, uncertainty, and country institutional strength", *Journal of Financial Intermediation*, vol. 35(A), pp. 41–56, 2018.
- [9] M. Faulkender, M. J. Flannery, K. W. Hankins, and J. M. Smith, "Cash flows and leverage adjustments", *Journal of Financial Economics*, vol. 103, no. 3, pp. 632–646, 2012.

APPENDIX A. VARIABLE MEASUREMENT

| Variable | Definition | Measurement |
|----------|----------------------|---|
| TDA | Book Leverage | Total debt/Total assets |
| TDM | Market Leverage | Total debt/(Market capitalization + Total debt) |
| CEOexp | CEO experience | Ln(current year- executive start year) |
| Size | Firm size | Ln(Total assets) |
| MTB | Market-to-book ratio | Market-to-book value of equity |

| | | |
|--------|-----------------------------|---|
| Profit | Profitability | Earnings before interest, depreciation and taxes/ Total assets |
| Tang | Tangibility | Fixed assets/Total assets |
| Ndts | Non-debt tax shield | Depreciation/Total assets |
| IML | Industry Median of Leverage | The median of the industry leverage (book or market IML depends on the measure of leverage we use). |
| CEOage | CEO age | Ln(CEO age) |
| CEOedu | CEO education | Ln(Education level) |
| Indep | Independent ratio | Education level is from 1 to 7 where 1 is high school graduated, and 7 is Associate Professors) |
| Dual | Duality | Number of independent members/Number of board members |
| Diver | Gender diversity | Equals 1 if CEO is also the chairman, 0 otherwise |
| | | Number of female members/Number of board members |