MANAGEMENT TURNOVER AND CORPORATE PERFORMANCE IN TAIWANESE ELECTRONIC INDUSTRIES

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Abstract

This paper analyzes the impacts of management turnover in Taiwanese electronic industries during 1996-2006 using the price and the trading volumes of underlying stock around the TSE announcement date. These results provide evidences that market participator would hold an active position following the appointment of a specialized, innovative, and self-motivated CEO. Hence, positive abnormal stock returns and trading volumes were expected. However, chairman turnover suggests that the corporate power structure of Board of Directors is unbalanced, thus, market participators would hold a conservative position.

Keywords: CEO turnover, Information Disclosure, Abnormal Return

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1. Introduction

The global economy has experienced constant changes and unpredictable stock markets in the past few years. Taiwan has become the third largest manufacturer of hardware products for personal computers, and the world's fourth largest supplier for the IT industry. Hence, electronic product consumption is especially critical to the Taiwanese electronic industry. Capital market stock price changes often differ from market participators' expectation. Expected market changes can add promotion value and produce positive returns. Unexpected market downturns, however, can cause loss which produces negative abnormal returns.

According information disclosure rules in the Taiwanese security market, Taiwanese listed companies shall disclose Chief Executive Officer (***CEO***) turnover information to the "Market Observation Post System" of the Taiwan Stock Exchange Corporation (TSEC). A CEO is elected by a Board of Directors and is the ultimate decision making authority of a company except in respect to matters reserved for shareholders and the Board of Directors. The Board of Directors retains oversight responsibility, ensuring that authority is delegated by the Board of Directors to the management to enable management to develop and implement strategic plans, annual operating plans, and the regular corporate activities (Yermack, 1996; Mikkelson and Partch, 1997; Denis *et al*., 1997; Goyal and Park, 2002; McNeil *et al*., 2004; Dow and Raposo, 2005). The Board of Directors diligently monitors management performance (***chairman*** and ***general manager***), but the responsibility for conducting regular corporate operations rests with management. The CEO, ***chairman*** and ***general manager***, accept ultimate accountability and for the performance of the company.

Existing researches focus on the subject of CEO turnover is substantial, but there is no consistent result on what based to measures for corporate performance. However, analytic work found that there is a tendency of measures for corporate performance towards ***stock market-based performance*** (Jensen and Murphy, 1990; Anderson and Reeb, 2003) or ***accounting based performance*** (Blackwell *et al*., 1994; Denis and Sarin, 1995; John and Senbet, 1998; Bushman and Smith, 2001). Furthermore, several studies of CEO turnover and corporate performance have become the subjects of many studies in management research (Farrell and Whidbee, 2000; Leker and Salomo, 2000; Brickley, 2003; Johnston, 2002.), but there is no general agreement on their relationship. Empirical studies show that corporations choose new CEOs with experience in managerial practices and that corporate performance reacts positively to CEO turnover (***Common-sense theory***: Davidson *et al*., 1990; Borokhovich *et al*., 1996; Lausten, 2002). Other studies show that CEO turnover makes members of the organization nervous, reduces corporate performance, and creates a negative turnover–performance relationship (***Vicious cycle theory***: Warner, *et al*., 1988; Kim, 1996; Cosh and Hughes, 1997; Parrino, 1997; Conyon, 1998; DeFond and Park, 1999; Suchard *et al*., 2001; Farrell and Whidbee, 2002; Brunello *et al*., 2003.). Other studies show that corporate performance leans to disregard CEO turnover, and CEOs are victims of poor corporate performance. Accordingly, corporate performance is independent of CEO turnover (***Ritual scapegoating theory***: Kaplan, 1994; Kang and Shivdasani, 1995; Nelson, 2005).

The above studies suggest that the CEO turnover

factor may play an important role in explaining corporate performance phenomena. This paper investigates Taiwanese appear on the electronics manufacturing service market kinds of stock's difference top management move whether exist information connotation of phenomenon, herewith might to diagnose top management turnover whether could to obtain abnormal return and trading volumes, using a event study approach based on data from major Taiwanese electronic corporations. This paper is organized as follows. Section 2 describes the methodology and data source. Next, section 3 presents empirical evidence. Finally, section 4 discusses results and presents conclusions.

2. Methodology

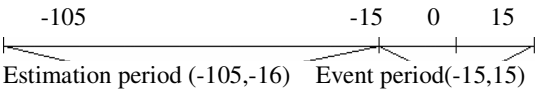
2.1 Data Source

This study applied event methodology to a sample of CEO turnover dates during the period January 1, 1996 to March 31, 2006. Data includes daily individual stock return and trading volumes for registered Taiwanese electronic manufacturers service industries, and market return for the Taiwan Stock Exchange Value Weighted Index (TAISEX). Daily stock index data source from the Taiwan Economic Journal provided daily stock index data, and the "Market Observation Post System" of the TSEC provided the sample of CEO turnover (including the ***chairman*** and ***general managers***) data.

There selection criteria filter sample data. First, top management turnover samples in listed electronic manufacturers service companies were taken from the "Market Observation Post System" of the TSEC. A total of 214 samples met the first criterion. The second criterion removed samples where the estimate period and event period were deleted due to defects, and 200 samples met the second criterions. Finally the third criterion removed samples where the estimation and event period for both abnormal returns of listed electronic stock overlapped. Finally, matching the selection criteria produced a total of 191 CEO turnover samples. The ***chairman*** and ***general manager*** turnover samples showed 52 and 139 samples, respectively.

2.2 Event Study

To determine whether there is any information effect on the CEO turnover around the announcement date, an event study methodology described is performed. The event day is defined as the announcement date of CEO turnover. The announcement date of CEO turnover is defined as Day 0, and the estimation period is from Days -105 to -16. The event window of interest begins from Day -15 and ends on Day +15, and total observational period covers 121 trading days.



The expected return was derived using the market model where the model parameters α and β were obtained from the estimation period:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it} \quad (1)$$

where R_{mt} is the return on the market portfolio on day t and R_{it} is the expected return on stock i on day t. α_i is the normal, β_i is the Beta modulus, that is individual stock of system risk, ε_{it} is the component of returns which is abnormal or unexpected. Therefore, abnormal returns on day t (AR_{it}) are calculated for a reference period surrounding the event date of stock i. These are obtained as the difference between the observed returns and those predicted by the market model, $AR_{it} = R_{it} - \hat{\alpha}_i - \hat{\beta}_i R_{mt}$.

The mean of abnormal returns ($\overline{AR_{it}}$) on day t for a portfolio of N stocks can be calculated as

$$\overline{AR_t} = \frac{1}{N}\sum_{i=1}^{N} AR_{it} \quad \text{t = -15, -14, … , 14, 15.} \quad (2)$$

The cumulative abnormal returns ($CARt$) through τ days ($\tau = \tau_2 - \tau_1$) for a portfolio of N stocks can be calculated as

$$CAR_i(\tau) = \frac{1}{N}\sum_{t=\tau_1}^{\tau_2}\sum_{i=1}^{N} AR_{it} \quad (3)$$

The ordinary cross-sectional method ignores estimation period estimates of variance, thus, this paper uses the standardized residual cross-sectional for its *t-test* (Boehmer *et al*., 1991). The resulting *t-test* statistic for $\overline{AR_{it}}$ is

$$t_{SROCSM}^{AR} = \frac{SAR_E}{\sqrt{\frac{1}{N(N-1)}\sum_{i=1}^{N}(SAR_{iE} - \sum_{i=1}^{N}\frac{SAR_{iE}}{N})^2}} \quad (4)$$

where $SAR_E = \sum_{i=1}^{N}\frac{SAR_{i,E}}{N}$.

The *t-test* statistic for the CAR_t for standardized residual cross-sectional is calculated as

$$t_{SROCSM}^{SCAR} = \frac{SAR(\tau_1,\tau_2)}{\sqrt{\frac{1}{N(N-1)}\sum_{i=1}^{N}(SCAR_i(\tau_1,\tau_2) - \sum_{i=1}^{N}\frac{SCAR_i(\tau_1,\tau_2)}{N})^2}} \quad (5)$$

where $SCAR(\tau_1,\tau_2) = \sum_{E=\tau_1}^{\tau_2} SAR_E$.

Moreover, related studies documented that abnormal return patterns are always connected with abnormal trading volumes (Campbell *et al*., 1993; Chan and Wei, 2001; Chen and Wu, 2001; Chuang,

2005). Hence, trading volumes of the ***CEO*** turnover around announcement date was examined. Utilizing trading turnover rate for ***CEO*** turnover *i* on day *t* is proxy for trading volumes, VOL_{it}, for ***CEO*** turnover *i* on day *t* (Michaely *et al*., 1995; Chan and Wei, 2001; Chuang and Chuang, 2005). The daily trading turnover for ***CEO*** turnover *i* on day *t* is defined as

$$VOL_{it} = \frac{Number\ \ of\ \ shares\ \ traded_{it}}{Number\ \ of\ \ shares\ \ outstanding_{it}} \qquad (8)$$

$$t = -105,...,-16.$$

Normal trading volumes ($NVOL_i$) for ***CEO*** turnover *i* is defined as the average trading turnover rate of stock estimated 90 days prior to the event window.

$$NVOL_i = \frac{1}{90}\sum_{t=-105}^{-16} VOL_{it}, \qquad (9)$$

However the turnover of stock will also be affected by the market-wide event. For example, if the CEO turnover are able to time market such that new CEO always stimulated active market trading, then the increase in trading volume around announcement date of CEO turnover is due to the elements other than the hedging activities conducted by the investors expected. The result is well and upon request.

The daily trading turnover is normalized and be compared across different stock of varying sizes with respect to its average trading turnover prior to the event window by standardizing a undeveloped daily trading turnover of stock. Furthermore, the average daily trading turnover for a portfolio of *N* stocks on day *t* is then calculated as

$$AV_t = \frac{1}{N}\sum_{i=1}^{N}\frac{VOL_{it}}{NVOL_i}, \quad t = -15,-14,...,14,15. \qquad (10)$$

The abnormal trading volumes ($AVOL_t$) in ratio period on day *t* for a portfolio of *N* stocks and its standard deviation (*s*) can be calculated, respectively, as

$$AVOL_t = AV_t - 1, \quad t = -15,...,+15, \qquad (11)$$

$$s = \sqrt{\frac{1}{30}\sum_{t=-15}^{15}(AV_t - \overline{AV})^2}; \qquad (12)$$

where $\overline{AV} = \frac{1}{31}\sum_{t=-15}^{15} AV_t$

3. Preliminary analysis and empirical results

Fig 1 and Fig 2 are the abnormal return for CEO and the abnormal trading volumes for CEO, respectively. Next Fig 3 and Fig 4 are the abnormal return of chairman and abnormal trading volumes of chairman. Finally, individually, Fig 5 and Fig 6 are abnormal return of general manager and abnormal trading volumes of general manager.

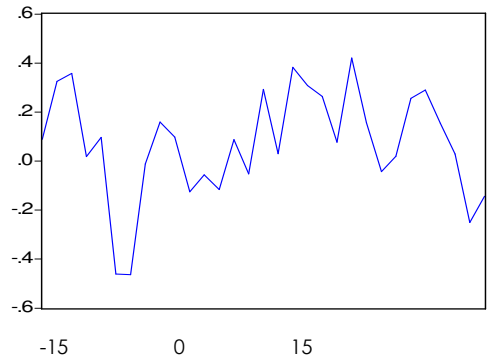


Fig. 1 Abnormal Return of CEO

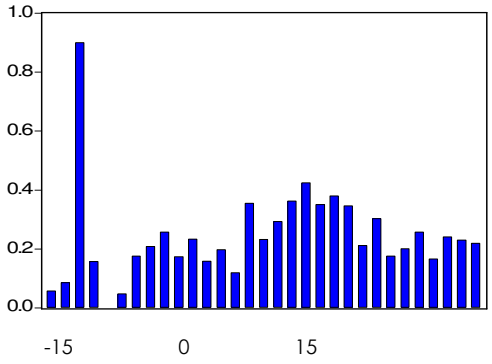


Fig. 2 Abnormal Trading Volumes of CEO

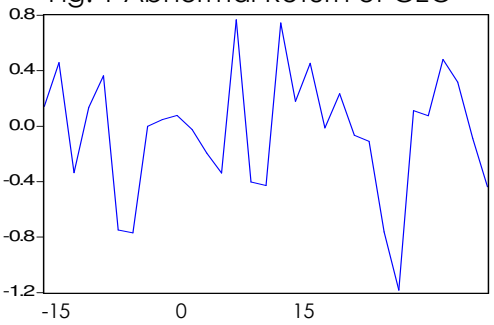


Fig. 3 Abnormal Return of Chairman

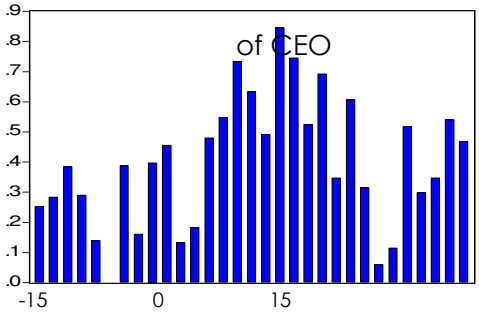


Fig. 4 Abnormal Trading Volumes of Chairman

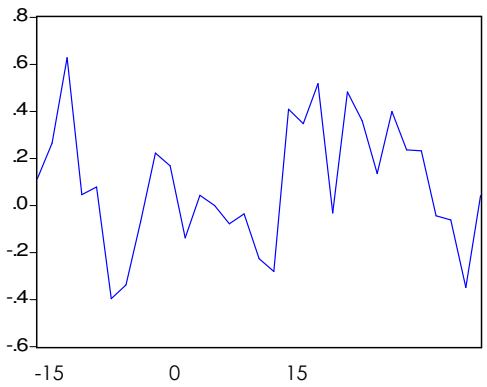


Fig. 5 Abnormal Return of General Manager

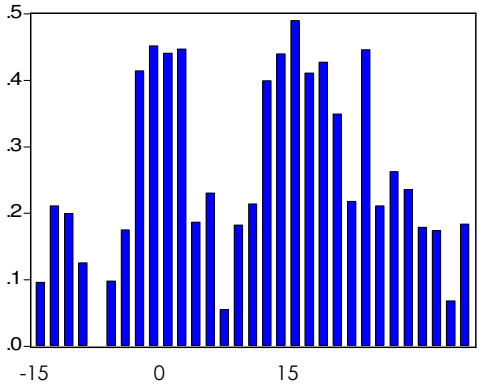


Fig. 6 Abnormal Trading Volumes

Table I presents results on abnormal return behavior and its *t-test* statistics for listed electronic companies of stock in the event window around the ***CEO*** turnover announcement data. For ***CEO*** turnover events, the empirical evidence shows that negative abnormal returns, -0.4610 and -0.4635, for day -9 and -10, are statistically significant at the 0.05 level using a *t-test*. Significantly positive abnormal returns, 0.4202, exist for day 6. These results suggest that underlying stocks enjoy a negative price effect before the ***CEO*** turnover announcement data and a positive effect afterwards. This is similar to the empirical results of Smith et al. (1984). According to ROC Company Law stipulations, to hold a board meeting, notice shall be given to all directors 7 days in advance and the following particulars shall be enumerated and explained in the notice to convene the board meeting. This phenomenon matches explanations that the observed abnormal returns behavior before the announcement date exists in ***CEO*** turnover events. Moreover, after the announcement date, positive abnormal returns are as good as investor expectations. However, analytical results support the vicious cycle theory in that a change of a high-level manager negatively affects organizational performance.

Table I. Abnormal return around announcement date of CEO turnover

Event window	***CEO***		***Chairman***		***General Manager***	
	AR	*t*-test	***AR***	*t*-test	***AR***	*t*-test
-15	0.0890	0.4771	0.1425	0.3610	0.1147	0.5357
-14	0.3259	1.5763	0.4577	0.9957	0.2647	1.1489
-13	0.3571	1.7673	-0.3348	-0.7548	0.6278	**2.7568***
-12	0.0180	0.0888	0.1345	0.3196	0.0468	0.2007
-11	0.0967	0.5059	0.3635	0.9029	0.0793	0.3493
-10	-0.4610	**-2.4909***	-0.7489	-1.8462	-0.3954	-1.9305
-9	-0.4635	**-2.7518***	-0.7685	**-2.5558***	-0.3372	-1.6132
-8	-0.0123	-0.0649	-0.0009	-0.0023	-0.0669	-0.3034
-7	0.1589	0.7702	0.0467	0.1032	0.2236	0.9202
-6	0.0980	0.4556	0.0763	0.1613	0.1678	0.6902
-5	-0.1250	-0.6396	-0.0257	-0.0694	-0.1373	-0.5809
-4	-0.0557	-0.2547	-0.1952	-0.4630	0.0426	0.1673
-3	-0.1164	-0.5441	-0.3380	-0.8561	0.0005	0.0019
-2	0.0870	0.4188	0.7662	1.7969	-0.0776	-0.3284
-1	-0.0520	-0.2537	-0.4038	-0.9242	-0.0348	-0.1517
0	0.2924	0.2488	-0.4276	-0.9880	-0.2261	-0.9014
1	0.0297	0.1270	0.7444	1.5031	-0.2804	-1.0943
2	0.3828	1.7456	0.1794	0.3765	0.4091	1.6898
3	0.3076	1.3536	0.4520	1.0070	0.3480	1.3157
4	0.2638	1.2763	-0.0120	-0.0303	0.5179	2.1222*
5	0.0772	0.3661	0.2346	0.5527	-0.0311	-0.1313
6	0.4202	**2.1030***	-0.0665	-0.2320	0.4829	**1.9722***
7	0.1569	0.7968	-0.1105	-0.3388	0.3607	1.5264
8	-0.0429	-0.2280	-0.7619	**-2.4230***	0.1364	0.5852
9	0.0195	0.0987	-1.1808	**-3.7525***	0.3995	1.7221
10	0.2557	1.2768	0.1131	0.2680	0.2360	1.0122
11	0.2897	1.3515	0.0751	0.2050	0.2329	0.8964
12	0.1546	0.7564	0.4813	1.2482	-0.0432	-0.1813
13	0.0288	0.1328	0.3180	0.7921	-0.0608	-0.2354
14	-0.2507	-1.3733	-0.0890	-0.3003	-0.3484	-1.5116
15	-0.1439	-0.6822	-0.4366	-1.3696	0.0414	0.1607

Note: 1. The abnormal returns for the event window from -15 to 15 are calculated using a market model. The market model is estimated over 90 days prior to the event window. 2. **(*) denotes statistical significance at the 1% (5%) level.

For ***chairman*** turnover events, the empirical evidence shows that negative abnormal returns, -0.7685, for day -9 is statistically significant at the 0.05 level results and show similar statistically significant negative abnormal returns, -0.7619 and -1.1808, for day 8 and 9, using a *t-test*. For ***chairman*** turnover, the cumulative in the event window that shows without statistically significant at the 0.05 level. Large Taiwanese banks favor lending to state-owned industries; venture capital is in its infancy and the country of immature equity market does not offer the dependable exit route demanded by sophisticated early-stage investors. Therefore, the majority of Taiwanese listed electronic entrepreneurs rely on founds raised from relatives and the government. Some management gurus believe that family-based capitalism is a foundation for enduring corporate structures in Asia. Enduring board structures affecting the sensitivity of firm performance to ***CEO*** turnover tend to be a phenomenon in Taiwanese electronic industry. Therefore, a ***chairman*** leaving office implied that the board structures is weak, and result in conservative investing behavior that reduces equity returns.

The empirical results in this study show statistically significant abnormal returns positive abnormal returns around the ***general manager*** turnover announcement date, 0.6278 and 0.4829, for day -13 and 6 using a *t-test*. The accumulative abnormal return in the event window shows without statistically significant for the ***general manager*** turnover. In general, the ***general manager*** of Taiwanese listed electronics companies possessed a strong technical background and rich industry experience in team management, and can perfectly integrate technology and business with strong execution abilities. These reasons generated corporate performance following by ***general manager*** turnover is as good as the expectation of investors result in conservative investing action and behavior that may reduce the equity returns.

Table II presents the accumulative abnormal return and its *t-test* statistics for listed electronic companies of stock in the event window around the announcement date. For ***CEO*** turnover, the cumulative event window shows the positive abnormal returns, 0.6092, 2.0550 and 2.0961, for day -12, 10 and 11 are statistically significant about at the 0.05 level.

Table II. Accumulative abnormal return around announcement date of CEO turnover

Event	***CEO***		***Chairman***		***General Manager***	
window	***CAR***	*t*-test	***CAR***	*t*-test	***CAR***	*t*-test
-15	0.0617	0.4485	0.4125	0.8659	-0.098	-0.4971
-14	0.3779	1.8489	0.4230	0.6183	0.3073	1.0505
-13	0.3942	1.5608	-0.0123	-0.0137	0.3944	1.1478
-12	0.6092	**2.0547***	0.6170	0.5777	0.4662	1.2258
-11	0.3476	0.9912	0.9271	0.7096	-0.0652	-0.1451
-10	-0.0169	-0.0433	0.6222	0.4466	-0.4430	-0.9255
-9	-0.0076	-0.0174	0.2129	0.1406	-0.4533	-0.8647
-8	0.2261	0.4650	0.1474	0.0878	-0.2710	-0.4629
-7	0.3442	0.6358	0.6704	0.3666	0.0954	0.1452
-6	0.2992	0.5137	0.5900	0.3133	0.0926	0.1298
-5	0.3131	0.5021	0.0089	0.0045	0.0331	0.0420
-4	0.0658	0.1004	-0.5963	-0.2852	-0.4469	-0.5346
-3	0.2617	0.3840	-0.3929	-0.1893	-0.1690	-0.1855
-2	0.3980	0.5669	-0.0977	-0.0465	-0.1673	-0.1744
-1	0.5313	0.7326	0.0816	0.0377	-0.1778	-0.1824
0	0.4743	0.6383	0.5413	0.2413	-0.6116	-0.6238
1	0.5253	0.6643	0.4645	0.2026	-0.7009	-0.6511
2	0.7522	0.9348	0.7991	0.3517	-0.2418	-0.2106
3	1.0756	1.2787	1.0728	0.4447	0.1509	0.1237
4	1.3220	1.5438	0.6550	0.2758	0.7203	0.5565
5	1.5209	1.6800	0.3674	0.1499	0.9539	0.7000
6	1.6224	1.7205	0.2655	0.1078	0.7998	0.5653
7	1.6970	1.7776	0.4081	0.1600	1.0020	0.6945
8	1.7889	1.8402	-0.5272	-0.2060	1.0909	0.7300
9	1.9646	1.9718	-0.3017	-0.1158	1.4267	0.9137
10	2.0550	**2.0141***	0.2329	0.0834	1.3919	0.8819
11	2.0961	**2.0072***	0.7501	0.2613	1.2221	0.773
12	2.0046	1.8748	1.2907	0.4304	1.0972	0.6884
13	1.9917	1.8110	1.5782	0.5234	0.9141	0.5583
14	1.8347	1.6506	1.4885	0.4840	0.6587	0.3987
15	1.8739	1.6714	1.6583	0.5554	0.8394	0.4948

Note: **(*) denotes statistical significance at the 1% (5%) level.

Table III. Average trading volumes around announcement date of CEO turnover

Event	***CEO***		***Chairman***		***General Manager***	
window	***AV***	*t*-test	***AV***	*t*-test	***AV***	*t*-test

-15	-0.0945	-1.1099	-0.1445	-0.5102	-0.0597	-0.4789
-14	-0.0663	-0.6846	-0.1141	-0.5171	0.0552	0.416
-13	-0.0621	-0.6458	-0.0125	-0.0312	0.0437	0.3243
-12	0.0053	0.0611	-0.1077	-0.3168	-0.0303	-0.272
-11	-0.1521	**-2.1847***	-0.258	-1.2790	-0.1560	-1.6671
-10	-0.1044	-1.3996	-0.397	-1.6253	-0.0579	-0.5978
-9	0.0236	0.2339	-0.0097	-0.0326	0.0192	0.1431
-8	0.0561	0.5353	-0.2362	-0.9934	0.2586	1.5041
-7	0.1056	0.9471	0.0005	0.001	0.2961	1.8578
-6	0.0213	0.2372	0.0584	0.2077	0.2851	1.7958
-5	0.0820	0.8450	-0.2641	-1.1509	0.2912	1.5284
-4	0.0064	0.0725	-0.2142	-1.6787	0.0310	0.2045
-3	0.0453	0.4951	0.0834	0.3420	0.0746	0.4854
-2	-0.0323	-0.3612	0.1506	0.5056	-0.1005	-0.7092
-1	0.2034	1.9477	0.3367	1.3752	0.0262	0.1499
0	0.0799	0.9202	0.2366	0.9999	0.0583	0.3996
1	0.1410	1.5741	0.0947	0.4422	0.2435	1.5025
2	0.2104	1.8442	0.4481	1.1028	0.2838	1.5298
3	0.2729	**2.7505***	0.3482	1.6183	0.3342	1.9496
4	0.1993	1.9528	0.1274	0.6999	0.2553	1.5167
5	0.2276	**2.2337***	0.2952	1.1971	0.2714	1.4878
6	0.1941	**2.0535***	-0.0500	-0.3036	0.1933	1.1302
7	0.0594	0.6864	0.2091	0.8968	0.0621	0.3854
8	0.1515	1.7428	-0.0831	-0.5076	0.2904	1.8224
9	0.0240	0.2717	-0.3374	**-2.1771***	0.0554	0.4870
10	0.0487	0.4767	-0.2817	-1.2059	0.1067	0.7279
11	0.1052	1.0865	0.1198	0.4696	0.0800	0.6974
12	0.0137	0.1695	-0.0985	-0.3198	0.0233	0.2162
13	0.0894	0.9322	-0.0497	-0.2538	0.0181	0.1472
14	0.0783	0.7840	0.14300	0.5902	-0.0876	-0.7019
15	0.0672	0.5961	0.0705	0.1735	0.0277	0.1728

Note: **(*) denotes statistical significance at the 1% (5%) level.

The results of Table III presents the behavior of average trading volumes behavior and its *t-test* statistics for listed electronic companies of stock in the event window around the ***CEO*** turnover announcement data. For ***CEO*** turnover events, the empirical evidence shows that negative average trading volumes, -0.1521, for day -11, is statistically significant at the 0.05 level using a *t-test*. Significantly positive average trading volumes, 0.2729, 0.2276 and 0.1941, exist for day 3, 5 and 6. The appointment of a specialized and self-motivated ***CEO***, market participators expect positive abnormal stock returns and trading volumes. However, ***chairman*** turnover suggests that the corporate power structure of Board of Directors is unbalanced. Hence, market participators expect negative abnormal stock returns and trading volumes. However, the accumulative trading volumes for CEO, chairman and general manager that are insignificant.

4. Conclusion

The results of this study tend to support the common-sense theory in that following the appointment of a specialized, innovative, and self-motivated ***CEO*** and ***general manager***, investor expect positive abnormal stock returns. Analytical results of ***chairman*** turnover support the vicious cycle theory in that a change of a high-level manager negatively affects organizational performance. The ***chairman*** turnover implied that the corporate power structure of Board of Directors is unbalance, and makes corporate personnel restless while reducing corporate performance. Hence, investors expect negative abnormal stock returns. The results also present the abnormal trading volumes of underlying stock that have negatively affects before the announcement data. Meanwhile, the price and the trading volumes of stock associated with CEO turnover have abnormal increases in price changes and trading volumes prior to the market conclusion that the announcement date of CEO turnover.

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