
Research Note: CEO Locus of Control and Small Firm Performance

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Abstract

Boone et al. (1996) reported that Chief Executive Officer (CEO) locus of control was significantly associated with profitability in a cross-sectional study of 39 small firms. As the authors could not rule out the possibility that firm performance *causes* an internal locus of control rather than the other way around, a follow-up study was performed to provide us with a possible clarification of the direction of causation. We traced the life history of each of these 39 firms and analyzed the relationship between locus of control and long-run organizational survival. We found that 21 percent of the 39 firms studied in Boone et al. (1996) went bankrupt within 6 years. Among the CEOs classified as internals, only 1 company failed (1 out of 14), whereas among the external CEOs 45 percent did not survive (5 out of 11). We also found that the differences between internal and external CEOs were only observable for firms that were relatively unprofitable in 1990–1991, indicating that short-term performance shields the companies from subsequent bankruptcy. We conclude that our findings suggest that CEO locus of control is an important predictor of small firm performance.

Descriptors: Chief Executive Officer, locus of control, firm performance

Introduction

Boone et al. (1996) published the results of a study into the relationship between Chief Executive Officer (CEO) locus of control and small firm performance. Among a sample of 39 small Flemish furniture firms they confirmed the robust finding that firms headed by CEOs with an internal locus of control performed better than firms with external CEOs.¹ They reported a zero-order correlation between CEO scores on the Rotter scale (Rotter 1966) and a composite measure of financial performance (i.e., the regression factor score of cash flow on assets, return on assets and gross profit margin) of 0.35 ($p = 0.03$, $n = 39$). Regression analyses revealed that this relationship was independent of other determinants of firm performance such as firm competitive strategy (low cost and differentiation), firm size, liquidity and tenure.

Unfortunately, as both variables were measured at the same time, the authors could not rule out the possibility that performance affects locus of control rather than the other way around (Boone et al. 1996; Miller and

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Toulouse 1986). That is, good performance might increase self-confidence and facilitate the development of an internal locus of control. To shed more light on the issue of whether locus of control *causes* organizational performance, we traced the life history of each of the firms from 1991, the year of data collection of the study of Boone et al. (1996), up until 1997 and analyzed the extent to which the 1991 locus-of-control scores allow us to predict long-run organizational performance. We expect that firms led by external CEOs are more likely to go bankrupt than firms headed by internal CEOs. We also investigate the role of short-term financial performance as a buffer against bankruptcy. That is, the difference between internal and external CEOs in terms of organizational survival will probably be more pronounced among firms with low profitability in 1990–1991.

Methods

The details of the data collection procedure and measurement methodology are discussed in depth in Boone et al. (1996). It suffices to mention here that the study pertains to 39 small Flemish furniture firms (average number of employees = 80, SD = 81). CEO locus of control was assessed with the well-known Rotter I-E scale (Rotter 1966). This scale contains 23 forced-choice locus-of-control items. The respondents have to choose between an internal and an external alternative. The following pair of statements is a good example of a forced-choice item: 'When I make plans, I am almost certain that I can make them work' (internal alternative), and 'It is not always wise to plan too far ahead because many things turn out to be a matter of good or bad fortune anyhow' (external alternative). A total locus of control score is obtained by counting the number of internal alternatives chosen. Cronbach alpha amounts to an acceptable value of 0.69 in the present study.

Short-run organizational performance is measured with the factor scores of a factor analysis including the following three financial performance indices: cash flow on assets, return on assets and gross profit margin. The first two ratios assess the firm's overall profitability. We included cash flow on assets to account for possible differences in depreciation accounting practices. The gross profit margin stresses the firm's operational efficiency. Each of these ratios is a standard indicator of profitability (Van Horne 1983). As small firm performance can vary substantially from year to year, we computed two-year averages of each of the performance indices (years 1990–1991). Note that one factor, explaining 82.2 percent of performance variance, was extracted. In the subsequent analyses, we use the regression factor scores of this factor analysis as a composite measure of firm profitability. The financial information was collected from the company annual reports, centralized on CD-ROM by the National Bank of Belgium.

The status of each of the firms was traced by consulting the same CD-ROMs, which mention the date of bankruptcy of failed companies, for the period 1991 to 1997. It is important to stress that, according to Belgian

laws, firms are designated by court to be bankrupt when debts cannot be paid back anymore. In the present study, therefore, bankruptcy actually means failure and does not include closure due to, for instance, the death of the CEO or lack of succession. In this respect, note that the average age of the CEOs of bankrupt firms equals that of surviving firms (i.e., 46 years). In addition, bankrupt firms were less profitable than surviving firms in 1990–1991, as revealed by Mann–Whitney tests on cash flow on assets ($p = 0.01$), return on assets ($p = .04$), gross profit margin ($p = 0.07$) and the profitability factor score measure ($p = 0.03$).

Finally, it follows from the methods we use that we implicitly assume that there is no CEO turnover in the period under study. Although we do not have data to confirm this, we think this assumption is reasonable, because the majority of firms in the sample are family owned or run by the founder (i.e., 82 percent). It can be expected that top management turnover in such companies will be very low.

Results

We report the descriptive statistics of the variables under study in Table 1. Important for the present study is that eight of the 39 firms went bankrupt between 1991 and 1997 (21 percent). The average locus-of-control score of our Flemish CEOs equals 15.18, which is somewhat more external compared to the averages reported in other studies pertaining to Canadian and American CEOs (for an explanation see Boone and De Brabander 1997). Note also that top managers typically score more internally than other subjects, such as regular employees or students.

We analyzed the data by means of the following logistic regression model:

$$\text{Bankruptcy} = a + b*\text{locus} + c*\text{profitability} + d*\text{locus}*profitability$$

We hypothesized that CEO internality lowers the failure rate, especially when firm performance in 1990–1991 is poor. This implies that we expect d , the coefficient of the interaction term, to be positive and significant. The results of this logistic regression analysis are reported in Table 2.

Table 1
Descriptive
Statistics

Variables	Mean	Standard Deviation	Minimum	Maximum
Cash flow on assets	16.08	8.04	-4.18	39.17
Return on assets	8.95	5.64	.77	28.39
Gross profit margin	9.85	5.70	-3.53	26.04
Profitability ¹	0	1	-1.8	2.46
CEO locus of control	15.18	3.39	7	21
Proportion bankrupt	.21	.41	0	1

¹ This measure is the regression factor score of the three profitability indicators above.

Table 2
CEO Locus of Control and Bankruptcy: Results of Logistic Regression¹

Variables	Logistic Regression Coefficients (standard error in parenthesis)	
CEO locus of control	-0.21 (.17)	
Profitability (regression factor scores)	-7.53 (2.60)	**
CEO locus of control * Profitability	.45 (.16)	**
Model Chi-Square (with 3 df)	12.93	**

¹ * = $p < 0.05$, ** = $p < 0.01$.

The coefficient of CEO locus of control * profitability is very significant and has the expected sign.² To visualize the nature of this interaction, we arbitrarily classified the CEOs into three locus-of-control groups of comparable size: relatively external (i.e., with respect to this sample) CEOs (score 7 to 13, $n = 11$), average locus-of-control group (score 14 to 16, $n = 14$) and relatively internal CEOs (score 17 to 21, $n = 14$). Firms scoring above (below) the median (i.e., profitability factor score = -0.05) were considered to be profitable (unprofitable) in 1990–1991. In Tables 3 and 4 we show the number of bankruptcies for each locus-of-control category among profitable and unprofitable firms, respectively.

It appears that good financial performance in 1990–1991 protects the firm from bankruptcy. Only 2 out of the 8 failures occur among the profitable companies. In addition, the difference between internal and external CEOs only becomes apparent among the unprofitable firms. Almost every unprofitable firm headed by an external CEO failed (i.e., more than 80 percent or 5 out of 6 firms), whereas every internal CEO managed to safeguard the firm from bankruptcy, even when unprofitable in 1990–1991.

Table 3
CEO Locus of Control and Bankruptcy: for Unprofitable Firms in 1990–1991 (n = 20)

	Survived	Bankrupt
Internal locus of control	5	0
Average locus of control	8	1
External locus of control	1	5

Table 4
CEO Locus of Control and Bankruptcy: for Profitable Firms in 1990–1991 (n = 19)

	Survived	Bankrupt
Internal locus of control	8	1
Average locus of control	4	1
External locus of control	5	0

Conclusion

Some authors raised the concern that the relationship between CEO locus of control and short-term performance in cross-sectional studies is produced more by feedback effects from performance to locus of control, than *vice versa* (Boone et al. 1996; Miller and Toulouse 1986). Although the number of observations is limited, this follow-up study provides us with a possible clarification of the direction of causation and suggests that locus of control is indeed an important predictor of small firm performance.³ Specifically, the evidence of current CEO locus-of-control research seems to point to the following conclusions: (1) firms led by internal CEOs achieve better short-term performance than firms headed by external CEOs, (2) short-term performance in turn enhances long-run survival, and (3) when firm performance is poor, however, firms of external CEOs are much more likely to go bankrupt, compared with firms of internal CEOs.

The latter suggests that Hambrick and Finkelstein's (1987) conceptualization of CEO locus of control deserves more attention. They argued that an internal locus of control contributes to the 'managerial discretion or latitude of managerial action' of CEOs, because internality is associated with higher levels of concern, involvement and vitality in general (Boone et al. 1996). The result is that '... top managers of some organizations have more discretion than their counterparts in other organizations, and, moreover, that a given executive can have more discretion at some time than at others' (Hambrick and Finkelstein 1987: 370). This might explain why internal CEOs seem to be able to prevent relatively unprofitable firms from going bankrupt, whereas external CEOs depend very much on short-term performance for long-run survival.

An alternative interpretation of the findings follows from the recent study of Gimeno et al. (1997). They found empirical evidence that organizational survival is not just a function of short-run economic performance, but might also depend on the firm's threshold of performance. That is, firms with a high performance threshold, e.g. because the CEO has alternative employment opportunities, are more prone to exit the industry rather than to continue the business when performance is comparatively low. Consequently, applied to the present context, one could argue that external CEOs merely quit sooner than internal CEOs when profitability is low, under the assumption that the former have a higher performance threshold than the latter. One can think of two reasons why external CEOs might be more prone to quit than internal CEOs. First, external CEOs have more human capital which increases their employment alternatives. It is, however, difficult to defend that internals have less human capital than externals (Boone et al. 1996). Second, the switching costs of internal CEOs might be higher compared to external CEOs. Specifically, internal CEOs are likely to be more persistent, even in the face of adversity, because they believe in their potency to control the environment. Conversely, for external CEOs, quitting might entail fewer psychological costs, because they consider themselves to be victims of fate in the first place. Although this argument is

much more plausible than the first, it should be noted that Gimeno et al.'s (1997) dependent variable is mere venture discontinuance while ours is bankruptcy (i.e., failure). As a result, in this case, one accepts that external CEOs are willing to pay a high price, given the consequences of bankruptcy, for quitting sooner.

Notes

1. Locus of control is a fundamental personality trait referring to individual differences in a generalized belief in internal versus external control of reinforcement (Rotter 1966). Those with an external locus of control see themselves as relatively passive agents and believe that the events in their lives are due to uncontrollable forces. Conversely, those with an internal locus of control see themselves as active agents, feel that they are masters of their fates, and trust in their capacity to influence the environment (Rotter 1966).
2. We re-ran the logistic regression model with the control variables employed in Boone et al. (1996) to analyze the robustness of these findings. That is, we added the acid-test ratio as a measure of liquidity (i.e., the amount of liquid resources not committed to liabilities in the near future), firm size (i.e., the number of employees) and CEO tenure to the model. Note that this does not change the sign nor the significance level of the interaction term d (i.e., $p = 0.0084$).
3. It is clear that this longitudinal study cannot rule out the possibility that both current CEO locus-of-control scores and future performance and survival are spuriously related, due to unobserved environmental circumstances or challenges. For instance, specific environmental threats might be reflected in current external locus-of-control scores and might simultaneously undermine the future survival chances of the firm. We think that such a scenario is unlikely for two reasons: (1) adding control variables to the model does not change the results (see Note 2), and (2) in a previous study we showed that the Rotter scores of CEOs are not related to exogenous variables, which tend to diminish the 'latitude of managerial action' (i.e., variables that are indicative of objective circumstances which cause a CEO to be more dependent on the environment). Specifically, CEO locus of control was not related to the age and size of the firm, or the percentage of sales realized by subcontracting, or the percentage of sales realized in foreign markets (Boone and De Brabander 1993).

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