Top Executive Appointments: 
Firm Size And 
Managerial Holdings

Dr. Rajiv Sant, Finance, University of Iowa

Abstract

This paper analyzes top executive appointments according to internal promotions and external hirings. It is found that the market response is significantly positive for external hirings and is insignificant for internal hirings. A logistic regression shows that smaller firms are more likely to hire from outside and as firm size increases, the frequency of outside hiring decreases. Higher managerial shareholdings increase the probability of external hirings.

Introduction

The subject of managerial replacement has received increasing attention in finance, especially because of the control exercised by the managers of a firm on its resources, and the need for efficient management of those resources in a competitive market. Warner, Watts and Wruck (1988) find empirical support for the hypothesis that poor stock price performance leads to top management changes. Weisbach (1988) finds that boards which are dominated by outside (non-management) directors are more likely than management dominated boards to replace the chief executive officer of a firm performing poorly.

Furtado and Rozeff (1987) analyze the wealth effects of executive hirings on the firm’s stockholders and find that the combined effect of external and internal appointments, as measured by the announcement period abnormal return, is positive and significant. However, internal appointments are met with a significant 1.05 percent abnormal response and external appointments are met with an insignificant abnormal response. Furthermore, whereas inside appointments by large as well as small firms are met with a significantly positive response, outside appointments are met with a significantly positive response for small firms and negative but insignificant response for large firms. They also note that the frequency of external appointments rises monotonically as firm size declines.

Furtado and Rozeff argue that smaller firms are more likely to hire from outside because their smaller size limits the availability of internal executives necessitating hirings from outside for the senior executive jobs. They conduct this analysis on the basis of size-based portfolios. In this study I use a continuous variable for firm size, instead of discrete portfolios and establish a precise relationship.

A second aspect of external and internal hiring is linked to the entrenchment of management. It is widely accepted that diffused shareholder control leads to incentive problems between shareholders and managers (and the board) in the absence of perfect and costless monitoring. Managements exercise control over the resources of the firm which leads to the agency problem between managers and shareholders due to the separation of ownership and control [Jensen and Meckling (1976), Fama and Jensen (1984), Morck, Schleifer and Vishny (1988)]. It is often argued that managers’ and shareholders’ interests can be aligned (albeit imperfectly) by encouraging managers to share equity in the firm. This provides the latter with an incentive to optimize decision making from the shareholders’ perspective. This ‘incentive effect’ associated with managerial holdings counteracts the ‘agency effect’. However, their net result is an empirical matter. It is reasonable to expect that as managerial shareholdings increase, the incentive effect will get stronger and at some point may cancel or even dominate the agency effect.
Agency effect can manifest itself in various ways: increased on-the-job consumption, avoidance of risky projects, forfeiture of higher NPV projects etc. If the agency effect is strong, then the managers may be loath to give up control over the firm's resources. One way to minimize the loss of control, is to promote senior executives from within the firm so that their vested interest keeps the coalition from breaking up. Therefore, entrenched managements may hire internally to maintain their control and entrench themselves further, even when they fully recognize that the internal managerial talent is inadequate for efficient management. An executive who is hired from outside, though cannot be assumed to be free of agency effects, does reduce the probability of collusion in the short run. Shareholdings of managers, which align managers' interests with the shareholders' can influence their decision to hire a senior manager. Managers with greater shareholdings would tend to hire from outside when that is the optimal decision. For these reasons, I also analyze the probability of outside hiring according to officers and directors' shareholdings. An increased frequency of hiring from outside with higher managerial shareholdings would indicate that the latter serve to align the managers' and shareholders' interests. This study shows that the market response to outside hires is positive and the outside hiring frequency increases with increased managerial shareholdings supporting the existence of the 'incentive effect' associated with such shareholdings.

Data and Methodology

The announcements of executive appointments were obtained from the 'Who's News' column in the Wall Street Journal (WSJ) for the seven year period from 1980 to 1986. These included appointments of top executives, i.e., chief executive officers (CEOs), presidents, and chief operating officers. The study was confined to these executives since they exercise the greatest operational control and thus would have the strongest impact on the stock price. The sample was separated into hirings from outside and promotions from within. Information about the predecessor was also collected and cases where the predecessor had resigned simultaneously were dropped because empirical evidence shows that the wealth effects of resignations are negative [see Borstard (1985), Sant (1990)]. Firms which were accompanied by the potential confounding effects of earnings and dividend announcements within a twenty calendar day window (ten on either side) were also discarded.

A total of 397 executive appointments were collected. Of these 17 involved resignations by predecessors which were dropped. In order to study the stock price reaction the following requirements were imposed: (1) the firm must be listed on the NYSE or the AMEX stock exchange, and (2) the firm must have daily returns data on CRSP tapes for a period of 200 days prior to and 30 days after the date of the announcement in the WSJ. In the case of multiple resignations less than one year apart for the same firm, only the first announcement was included due to data requirements as discussed below, i.e., to avoid data overlap. These filters resulted in a clean sample of 329 firms with adequate data. Internal promotions accounted for 217 cases and the rest, 112 involved hirings from outside. No firm had more than one appointment on the same day.

In order to assess the impact of the announcement of executive appointments on security prices, the one factor market model was used to estimate the market's expected returns and the security's abnormal return. The entire analysis was conducted over the period -200 day to +30 day, relative to the date of publication of announcement in the WSJ (day 0) using daily returns data.

The period [-200, +30] was divided into three segments: [-200, -81] - the estimation segment; [-80, -21] - the holdout period; and [-20, +5] - the announcement segment. Market model coefficients were estimated using the daily returns from the [-200, -81] segment. For details of statistical computations, see the Appendix.

Data on firm size was also obtained from the CRSP tapes. Since the sample period spans seven years during which the size of an average exchange listed firm increased by 140 percent, it is necessary to adjust the absolute firm size to reflect market changes and to enable comparisons across time meaningful. I employed the market value of firm's common equity at the time of the executive appointment as a proxy for firm size and divided it by the average common equity of all exchange listed firms in that year. This ratio is later referred to as RELSIZE or relative size. The smallest relative firm size was .003 and the largest, 28.641, with a mean of 1.562.

Data on the stockholdings of directors and officers was collected from proxy statements before the announcement date of the appointment. Such data was available for 201 internal and 107 external appointments, i.e., a total of 308 announcements. The managements' and directors' holdings ranged from 0.001 to 0.800 with a mean holding of 0.117 per firm.

Results
Market Reaction to Hirings

In this section I report the results from the analysis of the abnormal market response to a senior executive appointment (Table 1). The two-day [-1,0] cumulative abnormal return for internal appointments was an insignificant 0.28 percent. For external appointments, it was a significant 1.01 percent (at 1 percent level). Three day [-1,1] abnormal returns show a very similar pattern.

<table>
<thead>
<tr>
<th>Period</th>
<th>Inside Hirings</th>
<th>Outside Hirings</th>
<th>All Hirings</th>
</tr>
</thead>
<tbody>
<tr>
<td>[-1,0]</td>
<td>0.00028</td>
<td>0.0101</td>
<td>0.0053</td>
</tr>
<tr>
<td></td>
<td>(1.213)</td>
<td>(2.605)</td>
<td>(2.505)</td>
</tr>
<tr>
<td>[-1,1]</td>
<td>0.0030</td>
<td>0.0090</td>
<td>0.0051</td>
</tr>
<tr>
<td></td>
<td>(1.429)</td>
<td>(2.041)</td>
<td>(2.352)</td>
</tr>
</tbody>
</table>

Number of Firms: 217, 112, 329

Table 1
Abnormal market response to executive appointments.

Figures in parentheses represent z-statistics. Market reaction in decimals.
Day 0" is the day of announcement of executive appointment in the Wall Street Journal.

Furtado and Rozell (1987) also find similar results, but their order of significance is reversed, i.e., they find that market reaction to external hirings is insignificant (0.72 percent) and to internal appointments it is significant (1.05 percent). My evidence, as in the case of Eugene and Furtado can be interpreted as being consistent with the wealth-maximizing behavior on the part of the management. Furthermore, the absence of a significant positive response to internal appointments in this study indicates that such appointments are anticipated and the market already reflects their probability in the market price of the stock. Furthermore, external appointments seem to be unanticipated good news in so far as they may reflect the desire of the board to infuse new talent, change the operating policy of the firm and improve its profitability.

Determinants of Executive Appointments

As discussed in the introduction, Furtado and Rozell point out that larger firms tend to promote insiders more often whereas smaller firms seek outside managerial talent more often than the large firms. In their sample, about 60 percent of the smallest firms hired from inside whereas 40 percent hired from the outside. On the other hand, almost 86 percent of the largest firms promoted from inside and only 14 percent hired from outside. This was attributed to the availability of a larger executive pool in the case of larger firms as well better information about the internal executive vis-a-vis an outsider given a constant search expenditure. In addition, an internal manager would also be preferred for a larger firm since it is a complex organization and a manager's firm-specific capital in terms of his understanding of the inner workings of the corporation (hence a shorter learning curve) would lead to more efficient management, ceterus paribus.

Given that firm size is a factor in explaining the source of a newly hired top executive, I estimate a relationship between the two. In addition, I also introduce directors and officers' shareholdings and estimate the following binary (dependent variable) logistic regression using the maximum likelihood technique:

\[
\text{LOG} [\text{PRATIO}] = C_0 + C_1 \times \text{RELSIZE} + C_2 \times \text{MGRHLGD}^8
\]

where:

\[
\begin{align*}
\text{HIRETYPE} &= \begin{cases} 
0 & \text{if new executive is an insider and 1 if outsider} \\
1 & \text{if outsider}
\end{cases} \\
\text{RELSIZE} &= \text{Relative firm size} \\
\text{MGRHLGD} &= \text{Total direct holdings of all directors and officers} \\
\text{PRATIO} &= \frac{\text{Prob(HIRETYPE=1)}}{\text{Prob(HIRETYPE=0)}}
\end{align*}
\]

In the above model RELSIZE is a proxy for the 'executive talent pool' variable and 'shareholdings' are a proxy for the 'incentive effect' in the agency cost based argument.

It is conceivable that for a given managerial investment, the manager will control a far smaller proportion of a large firm's stock than his counterpart in a smaller firm. Since the monetary wealth of managers is small compared to the value of equity of large firms the above regression can be vitiated by a negative correlation between RELSIZE and MGRHLGD. Therefore, I employ a two step process. Firstly, a linear regression between MGRHLGD (dependent) and RELSIZE is estimated. Residuals from this regression (termed MGRRES) are substituted for MGRHLGD in the above regression. The results of this two-step estimation are:

\[
\begin{align*}
\text{MGRHLGD} &= 0.136 - 0.012 \\
& (p=.00) (p=.00)
\end{align*}
\]

* RELSIZE; F=17.76, R² = 0.05, N=308

and,

\[
\begin{align*}
\text{LOG}[\text{PRATIO}] &= -0.172 - 0.437 \times \text{RELSIZE} \\
& (p=.28) (p=.00)
\end{align*}
\]
+ 1.893 \* MGRRES;
(p=.02)

-2 log likelihood = 362 (p=0.00); Model Chi-Square = 35.84

As expected, managerial shareholdings are negatively related to the relative firm size. The logit estimation shows that the probability of hiring from outside is negatively related to firm size and positively related to managerial holdings. The negative relation with firm size confirms the finding of Furtado and Rozell. The positive coefficient of managerial holdings supports the agency argument that firms with higher managerial holdings hire from outside more frequently than similar firms with lower managerial holdings.

Table 2 presents the computed probabilities of outside hiring for hypothetical combinations of RELSIZE and MGRHLDG based on the equations estimated above. As can be noted, for higher RELSIZE, managerial holdings do not affect the probability of outside hiring as much as they affect the probability for lower RELSIZE values. The probability of outside hiring for a hypothetical firm (RELSIZE = 0.03) with high shareholding (MGRHLDG = 0.800) is as high as 0.747 and for a large firm (RELSIZE=15), the same probability is almost nil irrespective of managerial holdings. This implies that managerial holdings have little impact on the hiring decisions of large firms.

The probabilities computed in Table 2 are also presented in figures 1 and 2. It can be seen from figure 1 that for a given level of managerial holdings, the probability of hiring from outside decreases for large firms. This can be explained in the following way. As firms get bigger their internal executive pool gets sufficiently large and their need for outside search abates.

Figure 2 shows that for a given relative firm size, as managerial holdings increase, the firms hire from outside with increasing probability. However, the rate of increase depends on the firm size and is greater for smaller firms. This supports the 'incentive effect' based on the agency argument.

Summary

This paper analyzes top executive appointments according to the source of the hiring, i.e. internal promotions and external hirings. It is found that external hirings are met with a significant and positive market response and internal promotions are met with an insignificant market reaction indicating that such
promotions were largely anticipated.

It is also documented that smaller firms are more likely to hire from outside since their resources are limited and they do not have access to a large executive pool. This is consistent with the argument that for large firms internal executives are in an advantageous position for the top jobs as their firms have greater knowledge about their performance, the managers possess valuable firm-specific capital and that such firms groom executives for top positions through hierarchical screening and the creation of an internal pool of executives. This study confirms this hypothesis with the help of a logistic regression.

It is also found that higher managerial holdings increase the probability that a top executive will be hired from outside. This is interpreted to be consistent with the agency argument that managerial stock holdings align managers’ interests with the stockholders’ interests and that such managements hire from outside more often when it is optimal to do so. On the other hand, firms whose managements have lower shareholdings, are more likely to replace top executives through internal promotions after controlling for firm size.

**Suggestions for Future Research**

Future research addressing the question of top managerial hirings may include the study of the role of large block holders who may act as monitors of managers, as well as firm performance. The agency problem can be mitigated by the existence of non-atomistic shareholders who have an incentive to expend their private resources and monitor managerial action. Their presence, coupled with managerial stock holdings, would also influence managerial decision making in the area of executive appointments. An allied issue that may also be of interest is the extent of stock options held by managers and their influence on such decision making. Firm performance is an important issue in so far as hirings from outside may be made more often in the case of poorly performing firms in order to overhaul the management. This may be necessitated due to a lack of adequate internal pool of talent which is in turn reflected in poor firm performance.

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PROBABILITY OF HIRING FROM OUTSIDE
AS A FUNCTION OF MANAGERIAL HOLDINGS

Figure 2

***Endnotes***

1. They may resist giving up control for the potential loss of firm-specific human capital.

2. I do not distinguish between the holdings of directors and other officers since the former are hand picked by the CEO and vote with the management, except in rare circumstances.

3. Center for Research in Security Prices at the University of Chicago.

4. Details of the use of this period are discussed below.

5. This sample compares with 323 events collected by Furtado and Rozell (1987) which included 220 internal and 103 external appointments. However, their sample referred to 1975-82 period.

6. \[ \bar{R}_{jt} = \alpha_j + \beta_j \bar{R}_{Mt} + \bar{\varepsilon}_{jt} \] (1)

and the following equation was used to compute the abnormal return:

\[ e_{jt} = R_{jt} - \hat{\alpha}_j - \hat{\beta}_j \bar{R}_{Mt} \] (2)

where \( R_{jt} \) and \( R_{mt} \) are returns on the firm's stock and the value-weighted market portfolio respectively, \( e_{jt} \) is the random iid \( N(0, \sigma^2_{e}) \) error term. \( \bar{\varepsilon}_{jt} \) is the observed error based on OLS estimation of equation (1); ‘^’ denotes estimates and ‘~’ denotes random variables.

7. Or the one immediately following if the earlier was not found.

8. The model assumes that: \( \text{Prob}(\text{HIRETYPE}=1) = \exp^{X\beta} / (1 + \exp^{X\beta}) \) where, \( X = \) observation matrix, and \( \beta = \) co-efficient vector
### References ###


Appendix

The statistical tests for announcement effects are carried out on residuals based on the following return generating process:

\[ \tilde{R}_{jt} = \alpha_j + \beta_j R_{mt} + \varepsilon_{jt} \] for security j.

The OLS estimates \( \hat{\alpha}_j \) and \( \hat{\beta}_j \) are used to compute the next period prediction errors as follows:

\[ e_{j\tau} = R_{j\tau} - \hat{\alpha}_j - \hat{\beta}_j R_{M\tau} \]

The t-statistics are computed after computing standardized residuals

\[ u_{j\tau} = \frac{e_{j\tau}}{S_{pe}} \]

where

\[ S_{pe} = S_{e} \left\{ 1 + \frac{1}{n_i} + \left( R_{M\tau} - \bar{R}_m \right)^2 \left[ \sum (R_{M\tau} - \bar{R}_m)^2 \right]^{-1} \right\}^{1/2} \]

\( n_i \) = number of periods in OLS estimation for the firm

\( S_{e} \) is the standard error in the regression and

\( u_{j\tau} \sim N(0, 1) \).

The single day average residual is tested using the t-statistic

\[ z = \frac{\frac{1}{N_{\tau}} \sum_{j=1}^{N_{\tau}} u_{j\tau}}{\left( \frac{1}{N_{\tau}} \sum_{i=1}^{N_{\tau}} \frac{n_i - 2}{n_i - 4} \right)^{1/2}} \]

where \( N_{\tau} \) is total number of firms included for day \( \tau \). The cumulative residual over \( T \) periods is tested for significance using the following statistic:

\[ z = \frac{1}{T^{1/2}} \sum_{\tau=1}^{T} \frac{\left( \sum_{j=1}^{N_{\tau}} u_{j\tau} \right) / N_{\tau}}{\left( \frac{1}{N_{\tau}^{2}} \sum_{i=1}^{N_{\tau}} \frac{n_i - 2}{n_i - 4} \right)^{1/2}} \]

The cumulative residual is computed in the following way:

\[ CR_T = \sum_{\tau=1}^{T} \frac{N_{\tau} e_{j\tau}}{N_{\tau}} \]