

Managerial Overconfidence, Internal Financing, and Corporate Governance as Determinants of Investment Efficiency: Evidence from Indonesian Family Firms

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ABSTRACT

This study investigates the impact of managerial overconfidence, internal financing, and corporate governance on investment efficiency in Indonesian family-owned firms. Using panel data from 153 non-financial family firms listed on the Indonesia Stock Exchange between 2009 and 2018 (1,482 firm-year observations), investment efficiency is estimated using the residual-investment model, with managerial overconfidence proxied by chief executive officer characteristics (education, experience, gender, and performance) and corporate governance captured through boardroom characteristics. Data are analyzed using common, fixed, and random effects panel regressions, with the Driscoll-Kraay estimator applied where heteroskedasticity is detected. The results show that managerial overconfidence is positively associated with the use of internal financing, which in turn improves investment efficiency. However, managerial overconfidence has no significant direct effect on investment efficiency; internal financing instead moderates rather than mediates this relationship, and corporate governance is negatively associated with investment efficiency. These findings suggest that overconfident managers' preference for internal funds can mitigate, rather than worsen, investment inefficiency in family-controlled firms, offering implications for board oversight and financing-policy design in emerging-market family firms.

Keywords: *managerial overconfidence, internal financing, corporate governance, investment efficiency, family firms*

1. INTRODUCTION

Investment policy plays a central role in ensuring firms' sustainable growth, market competitiveness, and shareholder value creation, and is shaped jointly by macroeconomic conditions, monetary policy, capital market development, and firm-level operating characteristics (Richardson, 2006). Investment efficiency refers to a condition in which a firm's realized investment matches the level predicted by its growth opportunities, with deviations from this benchmark manifesting as either overinvestment or underinvestment. Because the efficient use of capital is closely tied to firm performance, the determinants of investment efficiency remain a central question in corporate finance research, particularly in emerging markets where capital allocation has historically been less efficient.

Indonesia provides a particularly relevant setting for this question. The country's Incremental Capital Output Ratio (ICOR), a macro-level indicator of capital-use efficiency, deteriorated from 5.02 in 2011–2015 to 6.64 in 2016–2018 (Indo Premier, 2019), a level well above the 3–4 range considered efficient (Imelda, 2015) and above ICOR levels reported for Malaysia, the Philippines, and Thailand. At the firm level, Indonesia is also dominated by family ownership: family firms account for roughly 95% of Indonesian businesses and contribute approximately 25% of GDP (PricewaterhouseCoopers, 2014), with similarly high shares of listed companies across Southeast Asia. Family firms typically rely heavily on internally generated funds rather than external debt or equity, making the interaction between managerial behavior, internal financing, and governance especially consequential for investment outcomes in this context.

A growing literature links investment inefficiency to behavioral biases among corporate managers. Overconfident managers tend to overestimate the precision of their judgment and the likely success of their investment projects, and to perceive external financing—particularly equity—as unduly costly because they believe the market undervalues their firm (Malmendier, Tate, & Yan, 2011; Roll, 1986). Consistent with pecking-order theory (Myers, 1984), this leads overconfident managers to prefer internal financing, which is easier to control and avoids the scrutiny associated with external capital. Evidence from China shows that overconfident managers with abundant internal funds tend to

systematically overinvest unless disciplined by capital markets or strong corporate governance (Ying, Cindy, & Yue, 2019), while firms facing internal funding constraints tend to underinvest.

Corporate governance is widely viewed as a counterbalancing mechanism. Strong governance practices are associated with improved firm performance, more reliable financial reporting, and more efficient capital allocation, partly by improving the monitoring of managerial investment decisions (Core, Guay, & Rusticus, 2006; Shahid & Abbas, 2019). However, board practices among Indonesian listed firms remain comparatively weak: average compliance with ASEAN corporate governance scorecard items rose only from 17.63 to 20.99 points (52.48% compliance) between 2012 and 2015 (Asian Development Bank, 2017), suggesting governance mechanisms may not yet fully offset managerial biases in the Indonesian context.

Taken together, these patterns motivate this study's central question: how do managerial overconfidence, internal financing, and corporate governance jointly influence investment efficiency among Indonesian family firms? State-owned enterprises are excluded from the sample because managerial decisions in such firms are more likely to be shaped by political considerations than by firm performance objectives (Jiang, Yin, Su, & Huang, 2009), which could confound the relationships of interest. This study contributes to the literature by jointly testing the direct, mediated, and moderated pathways linking managerial overconfidence, internal financing, and investment efficiency in a large emerging-market family-firm sample, an interaction that has received limited empirical attention outside China.

2. RESEARCH METHODS

2.1. Sample and Data

The population consists of all non-financial family firms listed on the Indonesia Stock Exchange (IDX) as of 2018. Using purposive sampling, firms were retained if they: (1) are classified as family-owned, (2) operate outside the financial sector, (3) have been publicly listed since 2009 or earlier, and (4) have complete annual reports and financial statements for the 2009–2018 period. Of 591 firms listed on the IDX in 2018, 220 were identified as family firms; after excluding firms that conducted their IPO after 2009 and family firms in the financial sector, 153 family firms remained, yielding 1,482 firm-year observations. Secondary data were obtained from firms' annual reports and financial statements.

2.2. Variable Measurement

Investment efficiency, the dependent variable, is estimated following the residual-investment approach of Richardson (2006), in which actual investment is regressed on proxies for growth opportunities (Tobin's Q), cash holdings, financial leverage, prior-year stock return, firm age, and firm size. The unsigned (absolute) residual from this model captures the degree of investment inefficiency, while the signed residuals identify overinvestment (positive residuals, excluding the bottom 25%) and underinvestment (negative residuals, excluding the bottom 25%).

Managerial overconfidence is proxied using four CEO-level characteristics following Ting, Lean, Kweh, and Azizan (2016): educational attainment (an ordinal scale from 1 = did not complete senior high school to 7 = completed a doctoral degree), prior managerial experience (a dummy variable), gender (a dummy variable), and CEO performance, measured as operating cash flow scaled by total assets. Internal financing is measured as retained earnings divided by total assets, following He et al. (2019). Corporate governance is captured through three boardroom characteristics following Chen et al. (2006): board size, the number of board meetings held per year, and the proportion of independent directors. Control variables include firm size (the natural logarithm of total assets), investment opportunity (Tobin's Q), financial leverage (total debt ratio), operating performance (net profit to total assets), profitability (earnings per share), and cash holdings.

2.3. Estimation Method

Five empirical models are estimated using static panel data regression to test, respectively: (1) the effect of managerial overconfidence on internal financing; (2) the effect of internal financing on investment efficiency; (3) the direct effect of managerial overconfidence on investment efficiency; (4) the mediating role of internal financing in the relationship between managerial overconfidence and investment efficiency; and (5) the effect of corporate governance on investment efficiency. For each model, the Chow, Hausman, and Lagrange Multiplier tests are used to select among the common effect model (CEM), fixed effect model (FEM), and random effect model (REM). Where heteroskedasticity is detected, the Driscoll-Kraay estimator is applied to obtain robust standard errors. Multicollinearity is assessed using pairwise correlations among independent variables, with a threshold of 0.8.

3. RESULTS AND DISCUSSIONS

3.1. *Managerial Overconfidence and Internal Financing*

Consistent with pecking-order theory, managerial overconfidence is positively and significantly associated with the use of internal financing. CEOs who display overconfidence-related characteristics are more likely to rely on retained earnings rather than external debt or equity, consistent with their tendency to perceive external financing as costly and to prefer financing sources that are easier to control without outside intervention (Malmendier et al., 2011). This result is consistent with evidence from Chinese listed firms (Ying et al., 2019) and suggests the same behavioral pattern extends to Indonesian family firms.

3.2. *Internal Financing and Investment Efficiency*

Internal financing has a significant positive effect on investment efficiency. Firms that fund investment primarily from retained earnings are not subject to the disciplining pressure—or the agency costs—associated with external debt or equity issuance, and avoid the higher cost of capital that often accompanies external financing during periods of tight credit. This finding indicates that, for the average family firm in the sample, internal financing functions as a stabilizing source of investment funding rather than a source of unchecked managerial discretion.

3.3. *Managerial Overconfidence and Investment Efficiency: Direct and Moderated Effects*

Managerial overconfidence has no statistically significant direct effect on investment efficiency. This contrasts with studies that find a direct negative relationship between overconfidence and efficient investment (e.g., Heaton, 2002), and suggests that, in this sample, overconfidence alone does not automatically translate into overinvestment or underinvestment.

However, when internal financing is introduced as a moderating rather than mediating variable, managerial overconfidence is associated with a significant negative effect on investment efficiency, conditional on the level of internal financing used. This indicates that the relationship between managerial overconfidence and investment efficiency is not stable on its own, but depends on how much internal financing an overconfident manager chooses to deploy: at higher levels of internal financing, the overconfidence-investment relationship turns unfavorable. This nuance is consistent with the view that internal financing does not simply transmit managerial bias into investment outcomes (mediation), but instead conditions the strength of that relationship (moderation).

3.4. *Corporate Governance and Investment Efficiency*

Corporate governance, captured through boardroom characteristics, is negatively associated with investment efficiency. Specifically, larger board size is associated with lower investment efficiency, consistent with the view that an excessively large board of directors may introduce coordination costs and conflicting interests that impair investment decision-making. The proportion of independent directors is also negatively associated with investment efficiency in this sample, a result that diverges from the conventional expectation that board independence improves monitoring quality, and may reflect the comparatively early stage of governance-practice adoption among Indonesian listed family firms (Asian Development Bank, 2017).

3.5. *CEO Characteristics and Investment Behavior*

Among the CEO-level proxies for managerial overconfidence, CEO educational attainment is negatively associated with overinvestment, suggesting that more highly educated chief executives make more conservative and disciplined investment decisions. CEO gender is significantly associated with underinvestment: firms led by male CEOs are less prone to underinvestment than those led by female CEOs, consistent with prior evidence that male executives tend to exhibit a higher risk tolerance in investment decision-making.

4. CONCLUSION

This study examines the effects of managerial overconfidence, internal financing, and corporate governance on investment efficiency using a panel of 153 non-financial family firms listed on the Indonesia Stock Exchange between 2009 and 2018. The findings show that managerial overconfidence is positively associated with the use of internal financing, and that internal financing in turn improves investment efficiency. Managerial overconfidence has no significant direct effect on investment efficiency, but exerts a significant negative effect when internal financing is

treated as a moderating variable, indicating that internal financing conditions, rather than transmits, the overconfidence-investment relationship. Corporate governance, proxied by boardroom characteristics, is negatively associated with investment efficiency.

These results suggest that overconfident managers' preference for internal funds need not worsen investment efficiency, and may in fact help family firms avoid the higher financing costs and external scrutiny associated with debt and equity issuance, particularly during periods of tight credit. At the same time, the findings indicate that board size and director independence, in their current configuration among Indonesian family firms, are not yet functioning as effective efficiency-enhancing governance mechanisms. Family firms may benefit from calibrating board size to firm needs, maintaining a measured proportion of independent directors, and using internal financing as a deliberate complement to—rather than a substitute for—prudent investment discipline. Future research could employ alternative overconfidence proxies, use a balanced panel, compare family and non-family or state-owned firms, and examine industry-level heterogeneity to extend the generalizability of these findings.

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