International Management Accounting Information System

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Abstract

This paper traces the benefits of international management accounting information system, its contribution to standardization and harmonization by purposing and tasking for business management. In this review, the goal is to describe and summarize how the accounting information system can help management decisions and influence the business environment in a global scale. The unified, standardized management accounting information system will lead to new types of analysis and data, furthermore with the possible integration of new indicators from the business practice of certain countries. Prior researches have raised substantial doubt regarding whether a global accounting information system would result in comparable accounting around the world. According to the business practice it is obvious that the usage of international accounting system leads to a reduction of the information asymmetry between the owners and the managers. The methodology of this study showed that both businesses earnings and stock returns effect on the management turnover. The businesses with lower labour productivity compared to their industry peers have greater incentives to adopt international management accounting system. So the increase in the sensitivity of turnover to accounting performance post-adoption is primarily driven by heightened turnover sensitivity to accounting losses. This study provides evidence that international management information system adoption leads to more value relevant accounting measures. The results of applied regression model support that the greater demand for more informative and conservative accounting earnings due to performance evaluations at more widely held by businesses stimulating to adopt international management accounting system. The empirical results could be the author’s suggestions for business management.

Keywords: management information system, value based management, international accounting standards, Hungary.

Introduction

The goal of business management is to provide a set of tools that can be used to meet the requirements of each application. Since accounting applications do not have uniform security and reliability requirements, it is not possible to devise a single accounting protocol and set of security
services that will meet all needs. Business management requires that resource consumption be measured, rated, assigned, and communicated between appropriate parties.

Managers of businesses use accounting information to set goals for their organizations, to evaluate their progress toward those goals, and to take corrective action if necessary. International accounting information system renders its services to a wide variety of users: investors, government agencies, the public, and management of enterprises, to mention but a few. Many accountants work in business firms as managerial accountants, internal auditors, income tax specialists, systems experts, controllers, management consultants, financial vice presidents, and chief executives.

Accounting is, therefore, a service to management, a special-purpose tool which must be used but not misused. Like any special-purpose tool, if it is neglected or not used it will surely go rusty and fail to provide the good service for which it was designed. However, all tools have their limitations and it is well to point out at this early stage some fundamental limitations inherent in any system of accounting.

Accounting is different from other business functions in that it is not only a function but also an industry. The accounting industry sells accounting and other advisory services to other businesses and is itself a major employer of graduate labour. Accounting can be and is used within business to evaluate and shape alternative strategies such as making a component of buying it in from a supplier, thus shaping business plans and activities. At the same time it is itself a function of the type of activity that a business engages in and of the strategies a business adopts.

With increasing globalization of the marketplace, international investors need access to financial information based on harmonized accounting standards and procedures. Investors constantly face economic choices that require a comparison of financial information. Without harmonization in the underlying methodology of financial reports, real economic differences cannot be separated from alternative accounting standards and procedures. Harmonization is used as a reconciliation of different points of view, which is more practical than uniformity, which may impose one country’s accounting point of view on all others. Organizations, private or public, need information to coordinate its various investments in different sectors of the economy. With the growth of international business transactions by private and public entities, the need to coordinate different investment decisions has increased. A suitable accounting information system can help multinational enterprises accomplish their managerial functions on a global basis. Further, standardization the manner in which reports are prepared can greatly enhance the value of accounting systems to their users and increase transparency to investors and regulators.

Since in case such multinational companies like Daimler Chrysler owning more than 900 subsidiaries, operating in 5 continents in more than 60 counties, the published financial results according to international accounting system is 1.5 times of the one according to German accounting rules. If earning after taxation (EAT) – deducted actual tax burdens - according to US GAAP (Generally Accepted Accounting Principles) is taken as 100 percent, due to differences between national accounting rules, EAT would be 25% more in UK, 3% less in France, 23% less in Germany and 34% less in Japan[1].

The purpose of the use of international accounting information system is that similar accounting transactions are treated the same by companies around the world, resulting in globally comparable financial statements. However, using the unified accounting information system consistently by firms we will find that they are changeable, because they are depend on the varying economic, political, and cultural conditions in one state. Accountants, auditors and information scientists around the globe are planning to harmonize accounting information systems with the goal of creating one set of high-quality accounting rules to be applied around the world. We call this harmonized accounting information system as international standards in the next chapters.

International Financial Reporting Standards (IFRS) are accounting principles, rules, methods ('standards') issued by the International Accounting Standards Board (IASB), an independent
organisation based in London, U.K. They purport to be a set of standards that ideally would apply equally to financial reporting by public companies worldwide. Between 1973 and 2000, international standards were issued by IASB’s predecessor organisation, the International Accounting Committee (IASC), a body established in 1973 by the professional accountancy bodies in Australia, Canada, France, Germany, Japan, Mexico, Netherlands, United Kingdom and Ireland, and the United States. During that period, the IASC’s principles were described as ‘International Accounting Standards’ (IAS). Since April 2001, this rule-making function has been taken over by a newly-reconstituted IASB. From this time on the IASB describes its rules under the new label ‘IFRS’, though it continue to recognise (accept as legitimate) the prior rules (IAS) issued by the old standard-setter (IASC). The IASB is better-funded, better-staffed and more independent than its predecessor, the IASC. Nevertheless, there has been substantial continuity across time in its viewpoint and in its accounting standards.

Widespread international adoption of IFRS offers equity investors the next potential advantages by Ball et al.[3]:

1. IFRS promise more accurate, comprehensive and timely financial statement information, relative to the national standards they replace for public financial reporting in most of the countries adopting them, Continental Europe included.

2. Small investors are less likely than investment professionals to be able to anticipate financial statement information from other sources improving financial reporting quality allows them to compete better with professionals, and hence reduces the risk they are trading with a better-informed professional.

3. IFRS eliminate many of the adjustments analysts historically have made in order to make companies’ financials more comparable internationally.

4. The reducing of the cost of processing financial information most likely increases the efficiency which the stock market incorporates it in prices.

5. IFRS offer increased comparability and hence reduced information costs and information risk to investors.

In countries whose culture is characterized as small power distance and weak uncertainty avoidance, one would expect a greater tendency to use accounting measures as an indicator of the results of the manager’s decisions. Thus, the profit of a profit centre is more likely to be used as a measure of manager performance than to indicate the effectiveness of policies and procedures prescribed for the manager. Likewise, cost is more likely to serve as an indicator for the results of decisions made by a cost centre manager.

For example, in the US and Taiwan found that managers in many Taiwanese firms did not have the full range of general management skills because the boss virtually all of the decisions. Taiwan’s strong uncertainty-avoidance and long-term orientation are consistent with this tendency toward centralization.

Germany’s strong uncertainty-avoidance culture also suggests a tendency toward centralization. Evidence of such a tendency is provided by an automobile industry expert, „Of the top 100 managers - at Volkswagen -, 50 are not used to making their own decisions or thinking on their own.”[17].
There is a significant body of evidence that identifiable differences in the dominant culture of countries do exist and that they are associated with differences in the typical accounting practices of countries.

There are divergent views on how comparability should be achieved. Some believe that comparability is best achieved by limiting the application of judgment and selection amongst possible choices. Others believe that comparability may be achieved through disclosure of the judgments that were made and how they impact the financial results. The more comparability is mandated, the more rules will be required to enforce it. Striving to obtain complete comparability, under detailed rules-based regimes, often defeats the purpose because the real comparability is lost through the many bright lines and exceptions created by the rules themselves.

The World is rich in well-tested, highly advanced management accounting and controlling concepts. However, each management accounting tradition has thus far been developed and applied more or less in a specific national context. A huge potential to shape the management accounting and controlling practice globally remains unused and unexploited. I therefore propose a cooperation initiative that addresses all over the World controlling and management-accounting associations, as far as possible with the support of the new Management Union. Its mission:

- to bring the major players in the controlling and management accounting scene in the World together for such a pan-European initiative,

- to establish a unified standard for management accounting and controlling by combing the strengths of the different approaches,

- to take the lead in defining international management accounting standards,

- to create enough momentum to attract non-European parties to join the initiative in a second step the development of a new proven ‘best practice’ in creating controlling, management accounting and analytical data to support managerial decision making based on an international management accounting performance concept is at best still in its early stage. What I completely lack so far is analytical and management accounting concepts based on the international performance-philosophy supporting by management in detailed day-to-day decision making.

According to the business practice it is obvious that the usage of international accounting principles leads to a reduction of the information asymmetry between the owners and the managers. By this information asymmetry are growing the costs of equities and are less accurate the economical and financial forecasts. This requires the development and review of the national accounting rules, the separate validation of the tax and accounting regulation, the repeal of the subordinate role of accounting, issuing international standards with the help of practical and theoretical accounting experts.

My research recorded the following notes according to international management accounting system:

➢ One aspect is that businesses span today – also at midsized companies – across many countries and are increasingly international. Therefore companies need controlling and management accounting concepts standardized across their local operations in order to create a common internal global ‘language’ in decision making and performance management. As a consequence, the development of new management accounting best practices and concepts has to move to an international level.
The second aspect is that traditional management accounting concepts are falling short to support today’s managerial decisions and to support the valuation of many of today’s corporate assets. The main reason for this is that the foundation of these management accounting concepts and instruments (focusing mainly on cost accounting) have been created 80–100 years ago in an era, were the main value creation process of most companies was mass-manufacturing. For the value creation activities of today – in R&D, marketing, strategy management etc., we still lack concepts and instruments in management accounting and decision support that apply the same rigor and strength like the traditional product costing and margin accounting concepts that supported well for decades the mass-manufacturing model. We have to move to the next level in management accounting and controlling.

The third aspect is that management accounting cannot be standardized in the same way like financial accounting. Nevertheless companies do not want to ‘reinvent the wheel’ all the time, when they have to find new solutions in management accounting and controlling. What is needed is a set of agreed ‘best practice standards’ for how to conceive management accounting and decision support systems in a specific managerial context and for supporting specific managerial decisions.

This study examines the impact of the adoption of international accounting standards on the management performance of businesses listed on the Budapest Stock Exchange. The research work also seeks to identify the financial attributes of enterprises that national rules employed by the requirements of the Hungarian National Economic Ministry. Finally, the paper investigates whether international accounting standards reduces the level of earnings management and employee layoff and enhances the value relevance of CEO turnover.

Previous related literature review

International accounting literature provides evidence that accounting quality has economic consequences, such as costs of capital[18], efficiency of capital allocation[7] and international capital mobility[13].

Prior researches[3,19] have raised substantial doubt regarding whether a global accounting standard would result in comparable accounting around the world. But differences in accounting practices across countries can result in similar economic transactions being recorded differently. This lack comparability complicates cross-border financial analysis and investment.

Epstein[11] compared characteristics of accounting amounts for companies that adopted IFRS to a matched sample of companies that did not, and found that the former evidenced less earnings management, more timely loss recognition, and more value relevance of accounting amount than did the latter. He found, that IFRS adopters had a higher frequency of large negative net income and generally exhibited higher accounting quality in the post-adoption period than they did in the pre-adoption period. The results suggested an improvement in accounting quality associated with using IFRS.

Chatterjee[2] assigned that first time mandatory adopters experience statistically significant increases in market liquidity and value after IFRS reporting becomes mandatory. The effects were found to range in magnitude from 3 % to 6 % for market liquidity and from 2 % to 4 % for company by market capitalization to the value of its assets by their replacement value.

Daske[9] also found that the capital market benefits were present only in countries with strict enforcement and in countries where the institutional environment provides strong incentives for transparent filings. In the order IFRS adoption countries, market liquidity and value remained largely unchanged in the year of the mandate. In addition, the effects of mandatory adoption were stronger in countries that had larger differences between national GAAP and IFRS, or without a pre-existing convergence strategy toward IFRS reporting.
The increased transparency promised by IFRS also could cause a similar increase in the efficiency of contracting between firms and lenders. In particular, timelier loss recognition in the financial statements triggers debt covenants violations more quickly after firms experience economic losses that decrease the value of outstanding debt\cite{2,4}.

Accounting theory argues that financial reporting reduces information asymmetry by disclosing relevant and timely information\cite{12}. Because there is considerable variation in accounting quality and economic efficiency across countries, international accounting systems provide an interesting setting to examine the economic consequences of financial reporting. The EU’s movement to IFRS may provide new insights as firms from different legal and accounting systems adopt a single accounting standard at the same time. Improvement in the information environment following change to IFRS is contingent on at least two factors. First, improvement is based upon the premise that change to IFRS constitutes change to a General Accepted Accounting Principles (GAAP) that induces higher quality financial reporting. Second, the accounting standards are a complementary component of the country’s overall institutional system and they are also determined by businesses’ incentives for financial reporting\cite{1}.

La Porta\cite{16} provided the first investigation of the legal system’s effect on a country’s financial system. He found that common law countries have better accounting systems and better protection of investors than code law countries. Other factors associated with financial reporting quality include the tax system\cite{8}, ownership structure\cite{6,15}, the political system\cite{14}, capital’s structure and capital market development\cite{22}. Therefore, controlling for these institutional and firm-level factors becomes an important task in the empirical research design. As a result of the interdependence between accounting standards and the country’s institutional setting and firms’ incentives, the economic consequences of changing accounting systems may vary across countries. Few papers have examined how these factors affect the economic consequences of changing accounting standards. For example, Pincus\cite{20} measured that accrual anomaly is more prevalent in common law countries. Maskus\cite{1} explored that accounting quality is associated with tax reporting incentives. Exploration of the interaction between these factors and the accounting standards can provide insights into differences in the economic consequences of changing accounting principles across countries.

**Methodology**

This study examines the impact of the adoption of international accounting standards on the management performance of businesses listed on the Budapest Stock Exchange in Hungary. The research work also seeks to identify the financial attributes of enterprises that national rules employed by the requirements of the Hungarian National Economic Ministry.

Finally, the paper investigates whether international accounting standards reduces the level of earnings management and enhances the value relevance of CEO turnover.

My research is based on a qualitative comparative approach. In order to identify the results of my scientific research about the evaluation of the accounting standards in Hungary I have elaborated the following hypotheses:

\textbf{H1:} Businesses with lower labour productivity compared to their industry peers have greater incentives to adopt international accounting standards.

\textbf{H2:} The sensitivity of CEO turnover to accounting earnings increases after the adoption of international accounting standards.

\textbf{H3:} Standards user enterprises’ employee layoffs are more response to accounting performance post-adoption.
The purpose of this study was the measuring the differences between the national rules and the international methods, the valuing and analyzing their effects on the business decisions. This survey contains information on how local, national accounting rules differ from IFRS on incorporating recognition, measurement, and disclosure rules.

To analyze business adoption decision my sample consists of Budapest Exchange Trade (BET) companies who compulsory adopted international financial reporting standards from 2005. My final sample comprises 65 IFRS adopting and 260 local (Hungarian) accounting rules user firms. For the chosen of the national accounting rules user enterprises I introduced mathematic-statistic methods. An alternative approach it to create a matched sample of local rules businesses based on criteria such as year and industry. It is chosen to incorporate all local rules firms due to methodological concerns about the matched-pairs research design. Financial data are from published accounting statements in BET and Hungarian Business Information database. In my sample the businesses are classified into those following IFRS and those following national accounting rules. For the IFRS adopting enterprises the adoption year is treated as event year 0. To analyze enterprises’ adoption decision, I required data on stock returns, accounting earnings, total assets, market capitalization, leverage, growth, foreign sales one year prior to event year 0, and closely held shares for event year 0. Close_Held is measured in event year 0.

The adoption decision models are expanded relying Nobes[4] researches and test if the demand from internal performance evaluations is a factor in businesses decisions to adopt international accounting standards.

It is estimated in the following logistic regression model (1) after the prior literature[23];

\[
\text{Prob} \{ \text{Adopt}=1 \} = \text{Logit} \left( a_0 + a_1 \text{Close}_0 + a_2 \text{Labor}_0 - + a_3 \text{RET}_0 + a_4 \text{ROA}_0 + \\
+ a_5 \text{Size}_0 + a_6 \text{Lev}_0 + a_7 \text{Growth}_0 + a_8 \text{Foreign} \right).
\]

(1)

Where:

Close Held: Percentage of closely held shares at the end of event year (event year of 2008 for the management turnover and employee layoffs analyses)

Labour Prod: Labour productivity (sales per employee) minus the median labour productivity

RET: Annual raw stock return

ROA: Return on Assets, accounting earnings is defined as net income before extraordinary items.

Size: Natural logarithm of market capitalization

Lev: Leverage, defined as long-term debt divided by total assets

Growth: Sales growth, current year’s sales change divided by prior year’s sales

Foreign Sales: Foreign sales divided by total sales.

The dependent variable Adopt is equal to 1 for adopting firms and 0 otherwise. All the independent variables are measured around event year 0. This model includes year and industry dummy variables.

I included lagged variables on businesses performance (RET, ROA), firm size (Size), leverage (Lev), growth (Growth) on the right-hand side of the regression model and I expected the coefficients on firm size, leverage and growth to be positive. I also included foreign sales as a percentage of enterprise total sales (Foreign_Sales). I expected these variables to have positive signs.
The regression results are reported in Table 1. Table 1 reports the logistic reports to model business decisions to adopt IFRS. In Table 1 the coefficients estimates, standard errors, and the marginal effects are reported in columns (1) to (3), respectively. The Close_Held has a negative coefficient, -0.00445, and significant at the 0.05 level.

The percentage of closely held shares can also vary with business' incentives to access the capital market as more closely held business may have lower demand for external capital. This is the reason why the research controls for various factors related to business financing needs in the regression model.

The coefficient on Labor_Prod is -0.00005 negative as expected and significant at the 0.05 level. The marginal effect indicates that a one standard deviation increase in labour productivity reduces the likelihood of adoption by 1.08 percent. Regression has reasonable predictive power with a Pseudo R² of 32 percentages.

It was expected that the coefficients on the percentage of closely held shares (Close_Held) and labour productivity (industry-adjusted sales per employee, Labor_Prod) variables to be negative, because prior researches suggested that these variables associated with disclosure incentives have predictive power for the adoption decision[1,4,5,21]. The control variables signed that larger businesses, those with higher leverage, with more substantial foreign sales are more likely to adopt international standards. I found that Close_Held are consistent with compensation contracting demands affecting business decisions to adopt international accounting standards.

The marginal effect suggest that a one standard deviation increase in the percentage of closely held shares decreases the adoption likelihood by 0.64 percent, or 5 percent of unconditional adoption probability of 20 percent (65/325). This supports a greater demand for more informative and conservative accounting earnings due to management performance evaluations at more widely held by businesses stimulating to adopt international accounting standards.

I analyzed CEO turnover-to-performance sensitivities separately for the adopting standards and the national rules user samples using model (2):

\[
\text{Prob}\{\text{CEO\_Turnover}_t = 1\} = \text{Logit}\left(a_0 + a_1 \text{DROA}_{t-1} + a_2 \text{DRET}_{t-1} + a_3 \text{Post} + \right. \\
+ \left. a_4 \text{Post}\_\text{DROA}_{t-1} + a_5 \text{Post}\_\text{DRET}_{t-1} + \sum b_j \text{Control variable } j \right).
\]

Where:

CEO_Turnover: 1 if there is a CEO turnover in event year t; 0 otherwise.
DROA: 1 if ROA of event year t-1 is negative and 0 otherwise.
DRET: 1 if annual stock return of event year t-1 is less than 20% and 0 otherwise.
Post: 1 of a firm-year observation is post-event year 0, and 0 for pre-event year 0 observations (event year 0 itself is removed).

The dependent variable, CEO_Turnover, is an indicator equal to 1 there is a CEO turnover in year t and 0 otherwise. Post is an indicator variable, equal to 1 if the firm-year is post-event year 0, and 0 otherwise (event year 0 itself is removed from the analysis). The study includes the explanatory variables from the earlier adoption decision regression (except for ROA and RET) to control for business incentives to adopt international accounting standards and their potential impact on CEO turnover. These variables are measured around year t. The results for model (2) are reported in Table 2.

I expected a positive coefficient on Post*DROA for the adopting sample and negative for local accounting rules businesses.
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The insignificant coefficient on Post*DRET\textsubscript{t-1} is inconsistent with an overall increase in the performance sensitivities of CEO turnover at the adopting firms that might result from concurrent organizational changes other than accounting changes.

In my management turnover test the indicator variable DROA equal 1 and the stock return 17 percent (below 20 percent). But the accounting earnings are timelier, less managed, and more conservative after the adoption of international accounting standards. Also they are more effective tools for businesses internal performance evaluations and governance as I found in my research too.

The next model (3) is an analysis of layoff-to-performance sensitivities separately for the adopting standards and local rules user samples.

\[
\text{Prob}[\text{Layoff}_t = 1] = \text{Logit}(a_0 + a_1\text{DROA}_{t-1} + a_2\text{DRET}_{t-1} + a_3\text{Post} + a_4\text{Post}^*\text{DROA}_{t-1} + a_5\text{Post}^*\text{DRET}_{t-1} + \sum b_j \text{Control variable}_j)
\] (3)

The dependent variable, Layoff\textsubscript{t}, is an indicator, equal to 1 if there is a reduction of a business employee headcount of more than 5 percent in year \(t\), and 0 otherwise. The explanatory variables on the right-hand side are the same as those in model (2) on management turnover, except for the addition of several control variables. Since the change in employee headcount can reflect contemporaneous changes in a businesses overall scale of operations, the study includes sales growth (Growth), change in foreign sales (∆Foreign Sales), and an indicator variable for fixed assets disposal (Fix_Disposal), for year \(t\).

The results for model (3) are reported in Table 3.

Results

My research paper investigates the effects of international accounting system on business decisions, management performance and economic environment. The results showed that businesses with lower labour productivity compared to their industry peers have greater incentives to adopt international accounting standards. As hypothesis 1 predicted that businesses face a better need for informative measures of enterprises performance to facilitate internal performance evaluation, therefore a higher probability of international standards.

Controlling for the effects of macro-economic conditions and employee layoffs by including the market return in Hungary it was pointed that the coefficients on market returns had been insignificant in the various regressions. Analyzing the changes in labour productivity at the adopting businesses the tests did not show a significant decreasing in the productivity over the last 5 years. It could be that businesses’ labour productivity is persistently low, not necessarily deteriorating continuously, in the several years leading up to the adoption. Meanwhile, there is a significant increase in labour productivity over event years.

I measured earnings and stock performances with indicator variables of negative Return on Assets (ROA) and stock returns, respectively. The indicators with continuous measures of ROA and stock returns were replaced. The inferences on employee layoffs are unaffected. However, the results on turnover are sensitive to this change in variable specification. This suggests that the increase in the sensitivity of turnover to accounting performance post-adoptions is primarily driven by heightened turnover sensitivity to accounting losses (hypothesis 2). Both the business earnings and stock returns affected management turnover. The prior studies suggested that variables associated with disclosure incentives have predictive power for the adoption decision and showed that both earnings and stock returns affect management turnover (see, for example, Easton[10]).
Hypothesis 3 is certified in my tests that the employee layoff sensitivity to poor accounting performance increased after the adoption of international accounting information system. The adopting firms’ employee layoffs are more responsive to accounting performance in the post-adoption period. With respect to the control variables, the study founded that businesses with higher labour productivity, that are larger, with greater contemporaneous and lagged sales growth, and less frequent layoffs. On the other hand, businesses with higher leverage and divestitures have more frequent employee layoffs. Continental European countries are known for their strong employment protection laws and powerful labour unions[5]. Companies with more substantial foreign sales are better likely to adopt international accounting information system.

Discussion

In this review, the goal is to describe and summarize how the international management accounting information system can promote management decisions and influence the economic environment in a global scale. The unified, standardized business information system will lead to new types of analysis and data, furthermore with the possible integration of new indicators from the business practice of certain countries.

My paper investigates the effects of international accounting system on business decisions, management performance and economic environment. The sensitivity of CEO turnover to accounting earnings increased after the adoption of international accounting system. The employee layoffs are more responsive to poor accounting performance post-adoption. The firms with higher leverage and divestitures have more frequent employee layoffs. Companies with more substantial foreign sales are better likely to adopt international accounting information system.

I can advise for international management researchers to employ these methods and measure their effects on practical management functions.

References

Journal paper:
International Management Accounting Information System


Books:

Chapters in Book:
Table 1. Logistic analysis of accounting standards adoption decision

<table>
<thead>
<tr>
<th>Analysis</th>
<th>Estimate</th>
<th>Standard Error</th>
<th>Marginal effects*</th>
</tr>
</thead>
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<td>0.0026**</td>
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(Source: Author’s own construction)

**, *** Indicate that a coefficient is significantly different from zero at the 10 percent, 5 percent, 1 percent levels, respectively (one-sided tests for coefficients with predictions and two-sided tests for those without a prediction).

*Marginal effects measure the changes in the predicted probability from a one standard deviation increase from the mean for a continuous variable and form 0 to 1 for an indicator variable with the other variables measured at the mean.
Table 2. CEO turnover-to-performance sensitivity analysis

<table>
<thead>
<tr>
<th>Analysis</th>
<th>Standards adopter enterprises</th>
<th>Local rules user enterprises</th>
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(Source: Author’s own construction)

*, **, *** Indicate that a coefficient is significantly different from zero at the 10 percent, 5 percent, 1 percent levels, respectively (one-sided tests for coefficients with predictions and two-sided tests for those without a prediction).
Table 3. Employee Layoff-to-Performance Sensitivity Analysis

<table>
<thead>
<tr>
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</tr>
<tr>
<td>DROA(_t-1)</td>
<td>0.2805*</td>
<td>0.1838</td>
<td>0.5126***</td>
<td>0.0844</td>
</tr>
<tr>
<td>DRET(_t-1)</td>
<td>0.2016**</td>
<td>0.1050</td>
<td>0.1885**</td>
<td>0.0592</td>
</tr>
<tr>
<td>Post(_t)</td>
<td>0.0269</td>
<td>0.1162</td>
<td>0.0386</td>
<td>0.0432</td>
</tr>
<tr>
<td>Post(_t),*DROA(_t-1)</td>
<td>0.5345**</td>
<td>0.2628</td>
<td>0.0034</td>
<td>0.0973</td>
</tr>
<tr>
<td>Post(_t),*DRET(_t-1)</td>
<td>0.1968</td>
<td>0.1403</td>
<td>0.0783</td>
<td>0.0682</td>
</tr>
<tr>
<td>Close_Held(_t)</td>
<td>0.0033*</td>
<td>0.1985</td>
<td>0.0009</td>
<td>0.0765</td>
</tr>
<tr>
<td>Labour_Prod(_t-1)</td>
<td>-0.0006</td>
<td>0.0004</td>
<td>-0.0001**</td>
<td>0.0001</td>
</tr>
<tr>
<td>Size(_t-1)</td>
<td>-0.0177</td>
<td>0.0289</td>
<td>-0.0274**</td>
<td>0.0131</td>
</tr>
<tr>
<td>Lev(_t-1)</td>
<td>0.3978</td>
<td>0.3831</td>
<td>0.3193**</td>
<td>0.1353</td>
</tr>
<tr>
<td>Growth(_t-1)</td>
<td>-0.1266</td>
<td>0.2115</td>
<td>-0.3034***</td>
<td>0.0863</td>
</tr>
<tr>
<td>Foreign_Sales(_{t-1})</td>
<td>-0.0563</td>
<td>0.1546</td>
<td>0.0354</td>
<td>0.0630</td>
</tr>
<tr>
<td>ΔForeign_Sales(_t)</td>
<td>-0.2631</td>
<td>0.6219</td>
<td>-0.3361</td>
<td>0.2683</td>
</tr>
</tbody>
</table>

(Source: Author’s own construction)

*The estimation results.

**,***Indicate that a coefficient is significantly different from zero at the 10 percent, 5 percent, 1 percent levels, respectively (one-sided tests for coefficients with predictions and two-sided tests for those without a prediction).