Industry Difference in Stock Price Reactions to Earnings Announcements During the Post-Pandemic Economic Recovery: Evidence from Ordinary Least Squares Regressions

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Abstract. 2024 is a key node of global economic recovery and restructuring in the post-pandemic period, during which industries exhibit significantly different recovery traces and risk uncertainty. Earnings announcements, which provide actual corporate information, play an important role in resolving market uncertainty. This study uses a sample of Nasdaq-listed firms to examine whether stock price reactions to earnings announcements is different across industries during this recovery period. Firms are classified into three groups: recovery-sensitive, online-economy, and neutral benchmark, and market reactions are measured by cumulative abnormal returns in earnings announcement windows. The empirical results show that the stock price reaction of firms in recovery-sensitive industries are significantly stronger than those in the benchmark group, while there are no statistically significant differences for firms in online-economy industries. Mechanism analyses further indicate that the observed industry effect is mainly driven by the difference in risk exposure. The significance of industry variables disappears after controlling the historical stock return volatility. These findings suggest that uncertainty is the key driver of short-term asset price fluctuations during this macroeconomic recovery period.

Keywords: Pandemic, Recovery-Sensitive, Online-Economy, Cumulative Abnormal Return, Risk Exposure

1 Introduction

As a milestone of post-pandemic economic recovery, the global economy has remarkable differences between recovery patterns across industries in 2024. Recovery sensitive industries such as tourism and catering are facing uncertainty of demand, while online economy industries may follow different paths. Against this background, earnings announcements—the primary source of asset pricing and risk evaluation information—often trigger stock price movements, which reflect the interaction between industry features and the macroeconomic environment. Therefore, examining whether and how stock price reactions to earnings announcements differ across industries is

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important for understanding the mechanism of information pricing during the post-pandemic period.

Since the seminal work of Ball and Brown established that earnings information has significant informational content, scholars continuously examined how they affect stock prices [1]. Atiase et al. further incorporate firm size effects into this research structure, laying the foundation for combining event study with regression analysis [2]. Further studies have extended this line of research by shifting attention to the underlying mechanisms and focusing on two aspects: information processing mechanisms and the regulating role of macroeconomic environment.

At the level of information processing mechanisms, existing studies focus on the micro-level paths of markets reactions. From the perspective of investor attention, Chapman shows that behavioral factors and information shape market responses together, amplifying the price reactions and frequency of trading activity in the short run [3]. Following this, relevant studies analyze data with high frequency and discover immediate price jumps after earnings announcements, indicating that the information is incorporated into prices faster and also suggesting that factors related to industries still influence the adjustment process [4].

At the level of macroeconomic environment, existing research has confirmed its moderating effect on micro-level pricing. Bai et al. provide evidence from Chinese market to show that economic policy uncertainty can increase investor sensitivity to negative earnings information [5]. Kale further indicates that investors' reactions of financial information systematically change and industry exposure becomes an important explanatory variable during economic crises [6]. Additionally, Ugras and Ritter find that financial announcements in high volatility environments often trigger stronger and more long-term price reactions, suggesting that macroeconomic uncertainty plays a significant role in shaping the effects of financial announcements [7].

Taking together, while the existing literature has explained the effects of earnings announcements from multiple perspectives, scholars pay relatively little attention to the post-pandemic economic recovery as a macroeconomic period and use industry types as the key variable. To fill this gap, this study employs data from 2024 to 2025 and classifies firms into three industry groups to empirically examine different pricing mechanisms during the post-pandemic economic recovery period using OLS regression models. This paper aims to find out the underlying logic behind observed industry differences from a risk and uncertainty perspective and provide both theoretical and empirical insights into information efficiency and industry restructuring.

2 Method

2.1 Data Sources and Sample Construction

This study selects a sample of 30 Nasdaq-listed companies (Table 1) and examines seven earnings announcements from April 2024 to October 2025 for each company. Earnings announcement dates are obtained from the U.S. Securities and Exchange Commission database, stock and market returns are collected from the Wind database, while firm-level characteristics are acquired from the latest financial statements.

Table 1. The stock tickers of 30 Sample Firms.

Recovery-Sensitive	Online-Economy	Neutral Benchmark
Ticker	Ticker	Ticker
DAL	MSFT	PG
UAL	AMZN	KO
AAL	GOOGL	WMT
LUV	META	COST
MAR	CRM	JNJ
HLT	NFLX	PFE
CCL	ZM	UNH
RCL	NVDA	XOM
LYV	ADBE	JPM
MGM	PYPL	NEE

2.2 Variable Definition and Measurement

The dependent variable in this study is the abnormal changes of stock price around earnings announcements, measured by cumulative abnormal returns (CAR). Following the market model, expected returns are estimated by regressing firm-level stock returns on market returns using historical data from the estimation windows. Abnormal returns are defined as the difference between actual returns and expected returns during the event window, and CAR is calculated as the cumulative sum of daily abnormal returns over the event window. The calculation is formally expressed as follows:

$$CAR_i = \sum_{t=-7}^{7} \left(R_{it} - \hat{\alpha}_{it} - \hat{\beta}_{it} R_{mt}\right) \quad (1)$$

In this specification, R_{it} and R_{mt} respectively denote the daily stock return of firm i and the return of the Nasdaq Composite Index on day t. The parameters $\hat{\alpha}_i$ and $\hat{\beta}_i$ are estimated from the market model using return data from the period between the previous earnings announcement window and the current one. The event window is defined as seven trading days before and after the official earnings announcement date. This relatively wide window is chosen to capture potential information leakage prior to the announcement and to fully account for delayed investor information processing and continuous price adjustment in the post-pandemic period with relatively high market uncertainty [8].

The main explanatory variable in this study is firm type, which is introduced in the form of industry dummy variables. Following the research framework on industry heterogeneity during the COVID-19 period, the sample is classified into three categories: (1) recovery-sensitive industries, such as tourism, catering, and aviation; (2) online-economy industries, including e-commerce, cloud computing, and remote work–related sectors; and (3) a neutral benchmark group, which includes firms outside the first two categories [9].

To control firm-level fundamentals that may affect stock price reactions, this study follows the existing literature and includes a set of firm control variables in the regression models [2,5]. Specifically, firm size ($Size_i$) is included to restrict scale effects; return on equity (ROE_i) is used to control for differences in profitability; and financial leverage (Lev_i) is incorporated to capture the potential influence of capital structure.

In addition, following the findings of Ugras et al. that financial announcements induce stronger price adjustments in high-volatility environments, this study further include historical stock return volatility to control firm-level risk [7]. Volatility is defined as the standard deviation of daily stock returns between two earnings announcement windows. This specification is intended to isolate the influence of risk differences during the recovery period, therefore more precisely identify the independent effect of industry type on stock price reactions to earnings announcements.

2.3 Empirical Methodology

This paper uses ordinary least squares (OLS) to estimate regression models that examine whether different industries have different stock price reactions during earnings announcement windows. The baseline regression model is set as follows:

$$CAR_i = \alpha + \beta_1 Rec_i + \beta_2 Onl_i + \beta_3 Size_i + \beta_4 ROE_i + \beta_5 Lev_i + \varepsilon_i \quad (2)$$

In this model, CAR_i represents the cumulative abnormal return during the earnings announcement window. Rec_i and Onl_i are dummy variables that respectively indicated recovery-sensitive industries and online-economy industries. ε_i represents the error term. Others are control variables. This model allows the study to test whether there are different stock price reactions in different industries around earnings announcements after controlling firm characteristics.

To test whether the result of baseline model change after controlling the firm risk characteristics, this study further introduces historical stock return volatility into the model. The extended regression model is set as follows:

$$CAR_i = \alpha + \beta_1 Rec_i + \beta_2 Onl_i + \beta_3 Size_i + \beta_4 ROE_i + \beta_5 Lev_i + \beta_6 Vol_i + \varepsilon_i \quad (3)$$

In this model, Vol_i represents historical stock return volatility, and the definitions of all other variables are consistent with the baseline model. By comparing the regression results between two models, this study aims to explore whether the observed industry effects on stock price reactions can be attributed to differences in firm risk characteristics.

Moreover, existing studies suggest that industries exhibit significantly different risk exposure when facing external shocks [10]. Considering that, this paper further introduces historical stock return volatility as the dependent variable to examine the internal relationship between industry type and firm risk to test the potential transmission mechanism through which industry effects influence stock price reactions.

3 Results and Discussion

3.1 Descriptive Statistics

To ensure the reliability of the estimation, this paper exclude observations with R^2 less than 20% in the market model from the analysis. The final sample consists of 99 earnings announcement events, including 36 events in the recovery-sensitive group, 33 events in the online-economy group, and 30 events in the neutral benchmark group, which is balanced enough to meet the requirement for group comparative analysis.

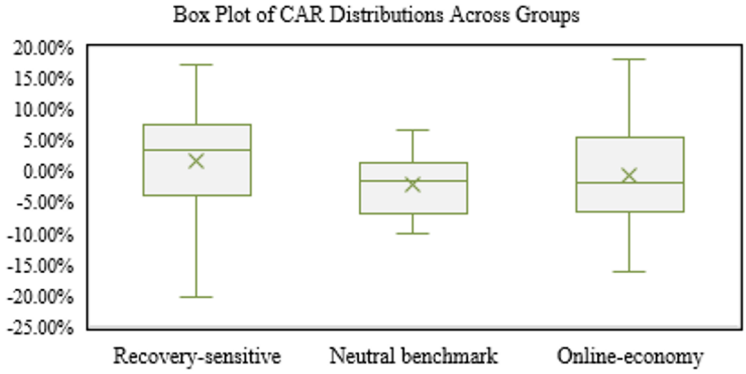


Fig. 1. Box plot of CAR distributions across groups.

As shown in Figure 1, while the mean of CAR across three groups are generally close to zero, their distributions are significantly different. The range of the box and the extreme value of recovery-sensitive industries are wider than the other two groups, and its standard deviation is larger, which reflects higher market disagreement and uncertainty during the economic recovery period. In contrast, the distributions of stock price reactions for online-economy and neutral groups are more concentrated, indicating relatively milder market responses.

Table 2. Descriptive statistics of control variables across groups

	Recovery-sensitive		Online-economy		Neutral benchmark	
Variable	Mean	SD	Mean	SD	Mean	SD
Ln (Size)	5.95	0.70	9.12	1.70	8.21	0.90
ROE	9.35%	48.38%	27.50%	20.74%	15.64%	17.22%
Leverage	94.35%	20.20%	41.82%	15.08%	71.85%	16.72%
Volatility	2.56%	1.27%	2.01%	0.84%	1.59%	0.63%

The group descriptive statistics reported in Table 2 indicate the structural differences in firm fundamentals across industry groups. Specifically, historical stock return volatility is significantly different across groups: the recovery-sensitive group shows a sharply higher average volatility than both the online-economy and benchmark groups. This characteristic indicates that high-risk exposure is an internal feature of recovery-sensitive industries, and it also provides empirical reasons for introducing volatility into the regression models to isolate the influence of risk in subsequent analyses.

3.2 Regression Results

Based on the previous analysis, this study first estimates the baseline regression model, and the corresponding results are reported in Table 3.

Table 3. Regression results for baseline model

Variable	Coefficient	t-value	Statistic	Value
α	-0.0806	-1.05	Observations（N）	99
Rec_i	0.0721	2.10**	R^2	0.056
Onl_i	0.0070	0.23	Adjusted R^2	0.004
$Size_i$	0.0085	1.29	F-statistic	1.076
ROE_i	0.0066	0.24	Prob > F	0.379
LA_i	-0.0252	-0.47		

**indicates statistical significance at the 5% level

Table 3 reports the baseline regression results without the risk control variables. Overall, the model has a relatively low R^2 (0.056), which is consistent with the typical characteristics of earnings announcement effects and supports the view that short-term stock price reactions are mainly driven by random noise [1].

In terms of industry effects, the regression coefficient of recovery-sensitive industries is significantly positive ($p < 0.05$), indicating that these firms have a significantly stronger stock price reaction during the earnings announcement windows. This suggests that the market pays higher attention and risk premiums to industries in recovery period. In contrast, the coefficient of online-economy industries is not statistically significant, indicating that their earnings announcement effects are not different from those of the neutral industry group. The reason might be that the growth future of digital transformation has already been fully priced by the market after its explosive growth during the pandemic.

As the industry differences observed in the baseline model is probably because of the different risk exposure levels, this study introduces historical stock return volatility as a control variable, and the extended regression results are reported in Table 4.

Table 4. Regression results for extended model

Variable	Coefficient	t-value	Statistic	Value
α	-0.1747	-2.19**	Observations（N）	99
Rec_i	0.04277	1.25	R^2	0.146
Onl_i	0.0064	0.21	Adjusted R^2	0.089
$Size_i$	0.0115	1.80*	F-statistic	2.568
ROE_i	-0.0044	-0.16	Prob > F	0.024
LA_i	0.0156	0.29		
Vol_i	2.6551	3.09***		

*, **, *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively

The results show that the regression coefficient of historical stock return volatility is significantly positive ($p < 0.01$), and the R^2 sharply increases (0.146). Another key change is that the coefficient of recovery-sensitive industries becomes insignificant, indicating that the reaction observed in the baseline model is probably driven by higher risk exposure, not solely by industry premiums.

To further confirm this transmission mechanism, this paper provides a regression with historical stock return volatility as the dependent variable. The model is set as follows, and the regression results are reported in Table 5.

$$Vol_i = \alpha + \beta_1 Rec_i + \beta_2 Onl_i + \varepsilon_i \quad (4)$$

Table 5. Regression results of stock historical volatility on firm type

Variable	Coefficient	t-value	Statistic	Value
α	0.016	5.72***	R^2	0.105
Rec_i	0.010	3.02***	Adjusted R^2	0.087
Onl_i	0.004	1.35	F-statistic	5.661
			Prob > F	0.004

***indicates statistical significance at the 1% level

The results indicate a significant positive coefficient of recovery-sensitive industries ($p<0.01$), while the volatility levels of online-economy industries are not significantly different compared with the neutral group. This suggests that firms in recovery-sensitive industries face systematically higher stock return volatility during the post-pandemic economic recovery period.

3.3 Discussion

Based on the empirical results above, the earnings announcement effects during the post-pandemic recovery period indicate significant industry difference. However, the underlying drivers of these effects are differences in firm risk characteristics. The baseline regression shows that recovery-sensitive industries exhibit significantly stronger price reactions, but the industry effect disappears once historical stock return volatility is introduced into the model. This "mediating effect" contrasts with traditional literature that suggests industry characteristics directly drive valuations, strongly supporting the view that the market's overreaction to recovery-sensitive industries is essentially risk premiums for their high operational uncertainty.

The different performances of the two industries can be explained from the perspective of expectations. On the one hand, recovery-sensitive industries are transitioning from depression to recovery, with significant disagreement in market's expectations of their future cash flows. In such a high-volatility environment, earnings announcements, as authoritative sources of information, can sharply adjust investor predictions, leading to dramatic price adjustments. On the other hand, the regression results for online-economy industries show that their market responses are similar with the neutral benchmark

group. This suggests that, following strong growth during the pandemic, the growth of the digital economy has become normal by 2024. The market's expectations of their business model and ability to make profit have become relatively full and stable, making earnings announcements less likely to trigger strong abnormal price movements.

To sum up, this study reveals an important pricing pattern in post-pandemic capital markets: the different reactions across industries under macroeconomic shocks is mainly driven by differences in their risk exposure. This finding provides insights for understanding market efficiency of major macroeconomic events—when analyzing asset price behavior in the crisis period. Both investors and researchers should not focus solely on the surface of industries' characteristics but also take a deeper look at the difference of risk and uncertainty levels behind these industries.

4 Conclusion

This study focuses on the unique macroeconomic window of post-pandemic economic recovery, using data from Nasdaq-listed companies to examine the difference of market reactions of earnings announcements across different industry types and their underlying transmission mechanisms. The main findings are as follows:

First, there is an unbalanced market reaction across industries. The empirical results show that recovery-sensitive industries exhibit significantly stronger stock price reactions during the earnings announcement window compared with the neutral benchmark group. In contrast, the market response for online-economy industries is not significantly different from neutral group.

Second, the industry differences observed are essentially driven by differences in risk pricing. Mechanism analysis shows that the industry effects observed in the baseline model are caused by systematic differences in historical stock return volatility. The uncertainty of macro demand during the recovery significantly enlarges the risk exposure of recovery-sensitive industries. It is this high risk that leads to strong dramatic belief revisions and price adjustments after earnings announcements. Once risk variables are controlled, industry labels no longer have explanatory power.

Third, this study clarifies the information pricing mechanism under macroeconomic shocks. From a risk perspective, this paper complements the existing literature by highlighting that the level of uncertainty is the key driver of short-term asset price fluctuations during the economic recovery period after macroeconomic shocks. The strong market reactions to recovery-sensitive assets are form of risk premiums for their high-uncertainty environment.

This study has certain limitations. Due to restrictions in sample size and the study window, it primarily focuses on short-term market reactions around earnings announcements, without dealing with medium- or long-term price adjustment process. Future research could expand the sample size and study period, and incorporate behavioral factors or multidimensional risk indicators, to more comprehensively capture the information pricing mechanism of earnings announcements during different economic periods.

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