Accrual Intensity and Firm Valuation

Does Earnings Quality Affect Tobin's Q?

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Table of Contents

Abstract 5
1. Introduction 6
2. Literature Review 7
  2.1. Earnings Quality & Accrual Properties 8
    2.1.1. Decomposition of Earnings 8
    2.1.2. Persistence and Predictability 8
    2.1.3. Reliability and Estimation Risk 9
    2.1.4. Measuring Accrual Quality 10
  2.2. Accrual Anomaly and Market Pricing 11
    2.2.1. The Accrual Anomaly: Sloan (1996) 11
    2.2.2. Explanations for the Accrual Anomaly 12
    2.2.3. Empirical Testing Approaches 12
  2.3. Firm Valuation and Tobin's Q 13
    2.3.1. Firm Valuation Framework 13
    2.3.2. Tobin's Q as a Valuation Measure 14
  2.4. Recent Literature 14
  2.5. Earnings Quality Across Market Conditions 19
3. Empirical Design 19
  3.1. Research Objective 19
  3.2. Sample and Scope 20
  3.3. Valuation Measure 23
  3.4. Earnings Quality Measure 23
  3.5. Econometric Approach 23
  3.6. Hypothesis Development 25
  3.7. Expected Results 25
  3.8. Identification and Endogeneity Considerations 26
4. Empirical Results 28
  4.1. Descriptive Statistics 28
  4.2. Baseline Regression Results 31
  4.3. Non-Parametric Check 34
  4.4. Economic Significance 35
  4.5. Cross-Sectional Heterogeneity 37
  4.6. Time-Varying Analysis 37
  4.7. Causality and Identification Strengthening 41

4.8. Robustness Tests 42
4.9. Extended Robustness Checks 42
4.9.1. Industry Fixed Effects 44
4.9.2. Alternative Tobin's Q Definition 45
4.9.3. Winsorisation Sensitivity 45
4.10. Additional Analysis: Accrual Magnitude 47
5. Discussion 49
6. Limitations and Identification Challenges 52
7. Conclusion 52
8. References 56
Appendix 56

List of Tables

Table 1 – Contribution to Literature: Gap Addressed, Key Finding, and Theoretical Channel 18
Table 2 – Descriptive Statistics 29
Table 3a – Correlation Matrix of Key Variables 30
Table 3b – Baseline Regression Results 32
Table 4 – Accrual Quintile Analysis: Mean Tobin's Q by Accrual Group 33
Table 5 – Economic Significance of Accrual Intensity 35
Table 6 – Accrual Intensity and Firm Valuation: Cross-Sectional Evidence 35
Table 7 – Time-Varying Evidence on the Pricing of Accruals Across Economic Regimes 38
Table 8 – Robustness Tests 42
Table 9a – Industry Fixed Effects: Baseline vs. Sector + Year FE 43
Table 9b – Alternative Tobin's Q: Baseline vs. (MV + TA − BV Equity) / TA 45
Table 9c – Winsorisation Sensitivity: 1st/99th vs. 5th/95th Percentile 46
Table 10 – Additional Analysis: Absolute Accruals vs. Signed Accruals 48

Appendix B: Extended Robustness Checks: Full Results

Table A1 – Cross-Sectional Heterogeneity: Full Results (Appendix) 57
Table A2 – Extended Robustness Checks: Full Results (Appendix) 58

Abstract

While prior literature has extensively examined the relationship between accrual-based earnings quality and stock returns, less attention has been given to whether earnings quality is reflected in firm valuation levels. Hence, this study raises a critical question: does accrual intensity affect firm valuation measured by Tobin's Q?
To answer this question, this analysis employs a panel dataset of S&P 500 non-financial firms, between 2015 and 2023, to estimate an OLS regression with firm and year fixed effects, and standard errors clustered at firm level. The main finding was a negative and significant relationship between accrual intensity and Tobin's Q (a negative coefficient on accruals of -3.919 at the 1% significance level). Economically, a one standard deviation increase in accruals is associated with a 7.9% decrease in firm valuation. Yet, this effect is not uniform across firms, it is stronger in growth firms than value firms, with a statistically validated difference. Moreover, the effect also varies across economic regimes, with the strongest and most precisely estimated effect observed during the stable period (2015–2019). In addition, results remain robust to alternative winsorization thresholds and an alternative Tobin's Q definition. Overall, this study's findings are consistent with rational risk pricing. Earnings quality represents not merely an accounting characteristic, but a key determinant of firm valuation, one with direct market consequences.

1. Introduction

The reliability of accounting information remains a central concern in capital markets, particularly as investors rely on reported earnings to assess firm value. Financial reporting constitute the primary communication channel, as it reduces information asymmetry. Earnings are widely used for valuation, performance assessment and investment decisions, however earnings are not purely cash-based, they include accruals, which rely on estimation, making them not fully credible, and therefore, not entirely reflecting true performance.

While the cash flow component of earnings is more objective and verifiable, the accrual component is based on estimates, being less persistent and subject to judgment and timing adjustments. Accrual accounting is designed to better align revenues and expenses with the periods in which economic activity occurs. Yet, it also reduces reliability, as it introduces measurement error and reduces persistence. This characteristics create uncertainty about firm performance and investors may discount earnings to compensate for additional information risk, or just misinterpret them. This creates ambiguity in how firms should be valued. Prior literature, especially *Sloan (1996)*, focuses on returns predictability and its anomaly explanation, however less attention is given to firm valuation (Tobin's Q). Therefore, a new question is raised - Do accruals affect firm valuation itself?

Hence, the purpose of this study is to evaluate whether accrual intensity is associated with firm valuation, with the utilization of Tobin's Q as a valuation proxy, as it is a forward-looking metric that reflects market expectations. To address this, a panel dataset of U.S. S&P 500 firms in the period of time between 2015 and 2023 is employed, with the regression framework incorporating firm fixed effects and year fixed effects. Fixed effects are important to control for firm characteristics and macro shocks, enabling this framework to isolate the effect of accruals on valuation. Therefore, this approach aims to provide a consistent empirical framework for examining the relationship between accrual intensity and firm valuation.

The empirical results show a negative and statistically significant relationship between accrual intensity and Tobin's Q ($\beta = -3.919$, $p < 0.001$). A one standard deviation increase

in accrual intensity is associated with a 7.9% decrease in firm valuation, a reduction of approximately 0.19 in Tobin's Q relative to the sample mean of 2.377. The findings are robust to alternative winsorization thresholds and an alternative Tobin's Q definition.

It is possible to identify three ways that this paper adds to existing literature. First, it turns the research attention from stock return predictability to firm valuation to check if accrual intensity is associated with Tobin's Q rather than stock returns in the future. This makes the accrual anomaly topic go beyond just returns to provide direct proof that the market values earnings quality in real time. Secondly, it detects that the accrual discount is not evenly spread over all types of firms, but it is only very much present in the case of growth firms that also have a high information asymmetry that leads to valuation, almost solely, being based on expectations, as assets in these cases are quite difficult to ascertain. This variation in cross sections is in line with the pricing of risk by reason and, at the same time, it illustrates one of the channels which earnings quality uses to impact valuation. Thirdly, it captures the fact that the way accruals are priced varies across economic regimes, with the most persistent and precisely estimated effect observed during stable periods, consistent with a structural information risk channel rather than a purely cyclical one, a clear difference which was neither recognized nor closely looked at in any earlier valuation-related work.

2. Literature Review

Literature is divided into three main strands, regarding the implications of earnings quality for market outcomes. First, the conceptual foundations of earnings quality and the properties of accruals are examined, as discussed in *Dechow (1994)*, where the author debates the informativeness of earnings and cash flows, and in *Dechow & Dichev (2002)*, where both authors measure accrual quality. Furthermore, in *Sloan (1996)*, a relation between accrual anomaly and market pricing is examined, where he provides empirical evidence that accruals predict future returns. While all these dimensions were analyzed by prior research, less attention has been given to the relationship between earnings quality and firm valuation. As a result, a third strand examines this relationship, where valuation is reflected in expectations about future cash flows and discount rates, with Tobin's Q commonly used as a forward-looking valuation measure. Accordingly,

information quality may influence firm valuation through its impact on expected cash flows and required returns.

Section 2.4 extends this foundation by reviewing more recent literature that bridges accrual properties with information risk and valuation implications in the modern accounting environment. Section 2.5 then examines how earnings quality behaves across different market conditions, which provides the time-varying dimension that motivates the regime analysis in Section 4.6. Finally, Section 2.6 synthesises the three contributions of this study relative to the existing literature, mapping each to the specific gap it addresses and the theoretical channel through which it operates.

2.1. Earnings Quality & Accrual Properties

This subsection focuses on conceptual foundations of earnings quality and the role of accruals, beginning with the decomposition of earnings and definition of earnings quality, and why accruals are central to the assessment of earnings quality. It then examines persistence and measurement issues, and clarifies the importance of accrual intensity as a proxy for earnings quality.

2.1.1. Decomposition of Earnings

As discussed in *Dechow (1994)*, reported earnings can be decomposed into two distinct components with different economic properties. While the cash flow component captures the realized cash flows from operating activities, the accrual component corrects timing mismatches between cash flows and the occurrence of economic activity. Thus, the matching principle plays an important role in accrual accounting, as mentioned in *Dechow & Dichev (2002)*, by recognizing expenses in the same period as the revenues they help produce, leading to performance measurement improvement, as well as avoidance of distortions from pure cash accounting.

2.1.2. Persistence and Predictability

Building on the decomposition established in Section 2.1.1, a central dimension of earnings quality is earnings persistence, as more persistent earnings are typically viewed as more informative about future performance. Hence, earnings persistence refers to the extent to which current earnings can depict future earnings. However, *Sloan (1996)* argues that both earnings components show different persistence levels, as cash flows

appear to be more persistent over time with a greater ability to map into future cash flows. Also, *Sloan (1996)* and *Dechow & Dichev (2002)* both discuss that accruals have a higher tendency to reverse in subsequent periods, being more sensitive to accounting judgements, making cash flows less subject to estimation error, and reflecting economic outcomes better than accruals. As a consequence, persistence becomes key for firm valuation, as valuation depends on expected future cash flows. Lower persistence increases uncertainty about the sustainability of earnings, reduces forecasting ability, and may raise the required return, thereby lowering valuation relevance (*Francis et al., 2005*).

2.1.3. Reliability and Estimation Risk

The persistence differences identified by Sloan (1996) and Dechow & Dichev (2002) arise partly because accruals are subject to estimation risk. Earnings should reflect the underlying economic performance of the firm, particularly from operating activities. However, if earnings rely to much on estimation, largely driven by its accrual component, reliability decreases, leading to greater uncertainty. *Dechow & Dichev (2002)* emphasize that financial reporting requires managerial judgment in several accounting decisions. While some components, such as cash flows, are observable and involve little estimation, other components, particularly accruals, require estimates about future cash flows or timing adjustments, which introduces potential measurement error. Considering that accounting must recognize economic activity before the related cash flows occur, managers must estimate the amount and timing of future cash flows associated with that activity, since the cash outcome has not yet been realized. For this reason, accruals frequently involve estimation and measurement, possibly leading to measurement noise. *Dechow (1994)* argues that this is often observable, for example, in the account receivables, which involve estimation about timing and value that customers pay, in bad debt provisions which are associated with estimation about future defaults, or even in depreciation involving estimates of useful life of assets.

Dechow, Ge & Schrand (2010) discuss that earnings quality depends, in part, on how credible accounting numbers are to represent the actual economic activity, yet when earnings contain measurement error or estimation noise, they become less reliable. This lower reliability implies that earnings provide weaker information about the firm's true

performance and therefore, greater measurement risk in accruals can reduce overall earnings quality.

2.1.4. Measuring Accrual Quality

Measuring earnings quality can be challenging, given that it is an unobservable characteristic, so researchers rely on empirical proxies, such as accruals *(Dechow, Ge & Schrand, 2010)*. As previously mentioned, earnings quality relates to persistence, reliability, and predictability, characteristics that cannot be directly measured, as each property captures a distinct dimension of information risk and is therefore reflected in a different category of accrual proxy. Instead, researchers examine properties of accruals. Literature, then, proposes different approaches for measuring accrual quality.

The most widely used measure is total accruals, as earnings can be decomposed in two different components, cash flows and accruals. Accordingly, accruals represent accounting adjustments required to align earnings with economic activity, however, these adjustments rely on estimation, and therefore, a larger accrual component implies greater reliance on accounting estimates rather than realized cash flows. As a result, firms with higher accrual intensity are often interpreted as having lower earnings quality *(Sloan, 1996)*, because total accruals aggregate both normal and discretionary components, they capture the net earnings quality signal available to outside investors *(Dechow & Dichev, 2002)*.

Consequently, a more structural measure was proposed by *Dechow & Dichev (2002)*, motivated by the principle that accruals exist to anticipate future cash flows. Lets take, for example, revenues and expenses. Revenues recorded today lead to cash collected later, and expenses recognized today result in cash paid later, therefore “good” accruals should correctly predict future cash flows. In turn, *Dechow & Dichev (2002)* propose the examination of the relationship between working capital accruals and cash flows, by regressing accruals on past, current and future cash flows. The idea behind this analysis is that accurate accrual estimates generate a strong relationship and noisy accrual estimates cause a weak relationship.

Although models like *Dechow & Dichev (2002)* provide a detailed measure of accrual quality, they require more data and complex estimation. Simpler measures, such as total accruals, remain widely used in empirical research, since they provide a practical way to capture variation in earnings quality across firms. This simplicity is especially valuable in large panel datasets, where the efficiency gain from scaling outweighs the loss of decomposition detail. Furthermore, firms differentiate in size, making raw accrual values not comparable across firms, thus it is necessary to scale accruals by total assets, which allows for standardized accruals, cross-sectional comparison and expresses accrual intensity relative to firm size. Once accrual variation is measured, literature examines how financial markets respond to this information, particularly whether accrual intensity affects stock returns or valuation.

2.2. Accrual Anomaly and Market Pricing

This subsection centers on how financial markets respond to accrual information. Having identified accounting properties of earnings in the previous section, the focus now shifts to the market pricing of those properties. The question then becomes, do investors correctly interpret the accrual component of earnings? Investors should treat earnings components differently when forming expectations about future performance, as accruals and cash flows have different persistence properties. If investors fail to distinguish between these components, earnings information may be mispriced. This issue motivated a large literature examining the market pricing of accruals.

However, the interpretation of the accrual anomaly remains debated in the literature. Two competing explanations have emerged: one rooted in investor mispricing, the other in rational risk compensation. In this context, this study shifts the focus from return predictability to firm valuation, examining whether the effect of accruals is already incorporated into market prices.

2.2.1. The Accrual Anomaly: Sloan (1996)

As previously mentioned, earnings consist of a cash flow and an accrual component, and these components show different persistence properties. Cash flows represent realized economic outcomes, while accruals represent accounting adjustments linked to expectations about future cash flows. Therefore, accruals are less persistent and tend to reverse over time, since they rely on estimation. In turn, investors may fail to recognize this persistence difference, if they treat both components in a similar manner, accrual-based earnings could be overvalued. As a result, *Sloan (1996)* introduces an empirical test, where firms are sorted into portfolios based on accrual levels, leading to results showing that firms with high levels of accruals tend to generate significantly lower future returns, while firms with low accrual intensity produce higher future returns. These results imply that prices initially overvalue accrual-based earnings, however, when accruals reverse, market prices also correct downward. This pattern is known as accrual anomaly, suggesting markets may not fully incorporate information about accrual persistence.

2.2.2. Explanations for the Accrual Anomaly

Sloan's findings produced two main interpretations in the literature. One is linked to the core idea that investors may misinterpret accrual-based earnings, since investors may assume that all earnings components are equally persistent, as accrual-based earnings appear similar to cash-based earnings. However, since accruals reverse, earnings performance of high-accrual firms tend to decline, given that investors do not initially understand persistence difference, and so prices are, at the outset, too high, leading to a later correction. When accruals subsequently reverse, prices adjust downward, generating lower future returns. This perspective is consistent with limitations in investor attention and difficulty in assessing accounting information *(Hirshleifer et al., 2004)*.

On the other hand, an alternative interpretation relates to the debate on whether accrual firms differ systematically in their risk characteristics. Possible explanations to this discussion include greater information uncertainty, lower earnings reliability, or higher volatility of operating performance. Then, lower future returns reflect risk compensation, not mispricing *(Francis et al., 2005)*.

2.2.3. Empirical Testing Approaches

In the literature, it is a common approach to sort firms into portfolios based on accrual levels as an empirical testing method. The typical structure follows the incorporation of

the lowest accrual firms and the highest accrual firms in separate portfolios, and then compare future stock returns across portfolios. If the accrual anomaly exists, high-accrual portfolios should earn lower future returns than low-accrual portfolios *(Sloan, 1996)*.

Another common approach involves estimating regressions in which future stock returns depend on accrual levels and control variables, with the main purpose of testing whether accruals predict future returns after controlling for other factors *(Dechow, Ge & Schrand, 2010)*.

Lastly, there is also an asset pricing framework, that consists of testing whether the anomaly persists after controlling for market risk, size and value factors. This strategy checks whether the anomaly is explained by risk factors *(Francis et al., 2005)*.

As indicated above, most empirical tests focus on return predictability, and therefore examine stock returns rather than valuation levels. This leaves open the question of whether accrual intensity is also reflected in firm valuation measures, such as Tobin's Q.

2.3. Firm Valuation and Tobin's Q

Beyond the use of different empirical methods, the literature also examines the determinants of firm valuation, where firm value reflects market expectations about future performance. Tobin's Q, is commonly used in the literature as a measure of firm valuation, as it is a forward-looking valuation metric. Likewise, financial information quality may influence valuation because it affects expectations and uncertainty. This highlights the importance of understanding how financial information quality is reflected in firm valuation.

Through the information risk channel, whereby lower earnings quality raises investor uncertainty, increases the required return, and depresses the present value of future cash flows, earnings quality is directly linked to Tobin's Q.

2.3.1. Firm Valuation Framework

Firm value reflects the present value of expected future cash flows, discounted at a rate that reflects risk and the information environment. Typical determinants discussed in literature include profitability, growth opportunities, investment opportunities, and operational performance *(Francis et al., 2005)*.

Additionally, there is also a fundamental component that influences valuation. This component constitutes the required rate of return, or the cost of capital. The discount rate reflects risk, uncertainty and information environment, where a higher perceived risk leads investors to demand higher returns, which results in a lower firm value *(Lambert, Leuz & Verrecchia, 2007)*.

Moreover, accounting information and its quality also plays an important role in measuring firm value, as financial reporting provides information about firm performance, and the quality of this information influences investor expectations. Consequently, lower information quality cause greater uncertainty and ultimately a higher required return *(Dechow, Ge & Schrand, 2010)*.

As a result, valuation needs a measurable proxy, so Tobin's Q is widely used in the literature. It captures the relationship between market value and the firm's asset base, and because it reflects market expectations about future performance, it is considered a forward-looking valuation metric.

2.3.2. Tobin's Q as a Valuation Measure

Building on the valuation framework outlined above, Tobin's Q reflects how markets value a firm relative to its asset base. Therefore, if Tobin's Q is higher than 1, it implies that the market value exceeds the asset value, pointing that the market expects strong future performance, growth opportunities, or valuable intangible assets. If Tobin's Q is lower than 1, then it indicates that the market value is lower the asset value, suggesting that the market expects weak future performance or inefficient use of assets. Thus, this interpretation direct us to the key idea that Tobin's Q captures investor’s expectations about the firm's future profitability and growth, making it an extremely relevant measure for valuation. Also, empirical studies widely use it, since it expresses a forward-looking measure, incorporates market expectations, allows comparison across firms, and is common in corporate finance and accounting literature. The hypothesis this study tests is if accrual intensity reflects earnings quality, it should therefore be negatively associated with Tobin's Q.

2.4. Recent Literature

Early literature on earnings quality, such as *Sloan (1996)* and *Dechow & Dichev (2002)*, focused mainly in establishing fundamental distinction between accruals and cash flow components of earnings. While these components contribute to reported income, they show different economic characteristics, particularly the fact that accruals demonstrate to be less persistent than cash flows, raising concerns regarding the credibility of the reported information and their susceptibility to managerial discretion. More recent literature extends this by shifting from return predictability to a combination of information risk, pricing mechanisms and valuation implications.

Francis et al. (2005) and *Lambert, Leuz & Verrecchia (2007)* argue that earnings quality affects information risk through a discounting mechanism. Lower earnings quality cause more uncertainty and investors require a higher rate of return to compensate for the risk, which reduces the present value of expected cash flows, ultimately leading to a lower firm valuation. This is where Tobin's Q becomes relevant, as it captures this valuation effect by translating poor earnings quality into lower market valuations relative to the firm's asset base.

Aside from the acrual and firm valuation implications, recent papers investigate why accruals affect market outcomes. *Hirshleifer, Hou & Teoh (2004)* attribute this to investors misunderstanding accrual persistence, while *Core et al. (2008)* propose rational risk compensation as an alternative. Since literature does not fully resolve mispricing and risk association, both these explanations are empirically plausible. Crucially, both mechanisms have different implications when examined through Tobin's Q rather than returns. Under mispricing, the valuation effect should correct over time as investors learn, whereas under rational pricing, the discount should be persistent and structural, embedded in the cost of capital permanently.

In today's context, firms are evolving from traditional to modern standards, whereas managers have to apply different strategies to comply with the company's continuing development. *Lev & Gu (2016)* argues that the rise of R&D, software and brand is evident, and accounting struggles to capture all of them, which implies that there is more reliance on estimates and accrual adjustments, and therefore, earnings become less precise and more uncertain. Moreover, *Bushman et al. (2016)* points that transparency varies across firms and disclosure quality matters. If the information has quality, it

reduces uncertainty, however, if the information quality is poor, it amplifies the accrual risk. Furthermore, *Dechow, Ge & Schrand (2010)* examines earnings quality as multi-dimension. Earnings quality does not involve only one determinant, it also includes persistence, predictability and reliability. They also give importance to the fact that accruals are just a proxy, and not a perfect measure. Overall, modern economy exhibits more uncertainty, and accounting is limited by its reliance on accruals. This information environment affects interpretation, making earnings quality becoming more important for valuation.

In sum, literature shows that accruals affect returns, cost of capital and information risk, however there is little direct evidence on valuation levels (Tobin's Q), as most studies focus on future returns, not current valuation. This study shifts from prediction to pricing and examines whether earnings quality is already incorporated. It links accounting quality directly to valuation, not just future returns. Therefore, earnings quality is not only predictive, it is valuation-relevant information.

2.5. Earnings Quality Across Market Conditions

Earnings quality is not static but varies significantly across different market conditions, reflecting shifts in managerial incentives, economic uncertainty, and the informational environment faced by investors. Economic conditions are not constant, markets move through expansions, contractions and shocks, therefore uncertainty is time-varying. Firm valuation depends on expected future cash flows and the discount rate, which are both functions of expectations and depend on information and the macroeconomic environment. If uncertainty increases, investors rely more on the available information, making the value of this information increase. Because earnings represent a key information source, the importance of its quality is not constant and depends on the environment. In other words, the pricing relevance of earnings quality is conditional on the level of economic uncertainty *(Dechow, Ge & Schrand, 2010)*.

Accruals depend mainly on estimation, which introduce uncertainty into reported earnings. This uncertainty encourages investors to apply a higher discount rate, leading

to a lower firm valuation. In a high-uncertainty type of environment, future performance becomes harder to forecast and dispersion of expectations increases, which contribute to more disagreement between analysts and forecast errors. Although accruals depend on assumptions about future cash flows, when uncertainty is high, those assumptions become less reliable, reducing their precision. As a result, accruals contain more noise and measurement error, reducing their utility for valuation. Investors face a higher information asymmetry than managers, as they have less information access *(Lambert, Leuz & Verrecchia, 2007)*. Accruals worsen this, as they are harder to verify. As a result, investors react by increasing the required return and discounting unreliable earnings more aggressively, not because of "more risk", but less trust in reported numbers, which, later, implies stronger negative pricing of accruals *(Francis et al., 2005)*.

Financial markets are periodically exposed to large-scale macroeconomic shocks that disrupt economic stability and asset valuations. Relevant examples for this analysis include the Global Financial Crisis, the COVID-19 pandemic, and episodes of aggressive monetary tightening by central banks. In these periods, volatility increases, cash flow predictability declines and the economic outlook deteriorates, causing firms to experience demand shocks and cost uncertainty. Because expected cash flows become more uncertain, discount rates tend to increase, leading to a lower firm valuation. As investors rely more on accounting data, they need signals to reduce uncertainty, however if earnings quality is low, then these signals become weak, and firms with high accruals appear less credible and face stronger discounting *(Bushman et al., 2016)*. This effect is particularly pronounced for firms with high levels of intangible assets, as this type of assets are harder to value and cannot be easily used as collateral *(Lev & Gu, 2016)*. In such cases, a higher information asymmetry and lower redeployability of assets give a stronger sensitivity to risk premium. Similarly, growth firms are also affected, as their value depends on cash flow in the future, causing an increase in the discount rates and a havier discounted future cash flow, triggering a disproportionate decline in valuation. However, this theoretical prediction is not always confirmed empirically, as broad market risk during acute shocks may dominate firm-specific information signals, compressing the accrual-specific discount during crisis periods.

Overall, earnings quality are not static, they depend on the macroeconomic environment. The dataset in this analysis covers the time period between 2015 and 2023, thus including stable economic periods, the COVID shock and a tightening cycle. This variation provides a relevant setting to examine how earnings quality evolves across different economic regimes. The estimated relationship in this study captures an average effect across different market conditions, yet the evidence suggests it is most persistent during stable periods, consistent with a structural information risk channel.

In sum, earnings quality not only is priced, but its importance is endogenously linked to market conditions.

2.6. Contribution to Existing Literature

Building on the gaps identified across Sections 2.1. to 2.4., this study makes three empirical contributions. Table 1 maps each contribution to the specific gap it addresses, the key quantitative finding, and the closest prior study it extends. All three contributions operate through the information risk channel, linking accrual intensity directly to firm valuation (Tobin's Q) rather than future stock returns, which is where most prior work stops. This framing guides the empirical design in Section 3.

Table 1 – Contribution to Literature: Gap Addressed, Key Finding, and Theoretical Channel

#	Contribution	Gap in Prior Literature	Key Finding (This Study)	Closest Prior Work
1	**Accrual Intensity & Firm Valuation (Tobin's Q)**	Sloan (1996) and Dechow et al. (1995) document the accrual anomaly in returns. Direct panel-FE evidence linking accrual intensity to Tobin's Q is absent.	$\beta = -3.919$ ($p < 0.01$). One-SD increase in accruals reduces Tobin's Q by 7.9%. Robust to firm FE, year FE, and clustered SE.	Sloan (1996); Dechow et al. (1995)
	Proposed mechanism:			*Information risk / earnings quality discount*

2	**Cross-Sectional Heterogeneity: Growth vs. Value**	No study tests whether the accrual–valuation discount differs between growth and value firms using an annual B/M split on Tobin's Q.	Growth firms: β = −4.254; Value firms: β = −0.928. Discount 4.6× larger for growth. Difference strongly significant (z = −2.835, p = 0.005).	Fama & French (1992); LaFond & Watts (2008)
	Proposed mechanism:			*Information asymmetry amplified by intangibles*
3	**Time-Varying Accrual Pricing Across Economic Regimes**	Existing studies treat the accrual–valuation link as stationary. No decomposition across pre-COVID, COVID, and tightening regimes exists.	Discount economically large: Stable -3.774; COVID −0.868; Tightening −2.698. Only significant in the stable period, consistent with a structural, not cyclical, channel.	Hirshleifer et al. (2012); Kravet & Shevlin (2010)
	Proposed mechanism:			*Structural information risk; not purely macro-driven*

Notes: This table maps each of the three empirical contributions to the gap it fills, the key quantitative finding, and the closest prior study. All results are based on S&P 500 non-financial firms, 2015–2023 (N = 4355 firm-years, 499 firms). Coefficients from OLS panel regressions with firm and year fixed effects and firm-level clustered standard errors.

3. Empirical Design

This section, supported by the conceptual framework provided in Section 2, presents the empirical methodology that will be used to investigate whether there is any linkage between accrual intensity and firm valuation. Firstly, the research objective is stated as well as the sample and data setup. Next, major variables are introduced, followed by the econometric method, formulation of hypotheses, and implementation of the identification strategy.

3.1. Research Objective

While prior literature has examined accrual properties and earnings quality, other studies investigate market pricing of accruals through stock returns, although less attention has been given to how accrual intensity is reflected in firm valuation levels. Therefore, this study empirically examines whether variation in accrual-based earnings quality is associated with differences in firm valuation, where valuation is measured using Tobin's Q. This study addresses this gap using a panel fixed effects design, which improves on

prior cross-sectional approaches by absorbing time-invariant firm heterogeneity and isolating within-firm variation in accrual intensity over time. Beyond the baseline relationship, the design is extended to test two additional dimensions identified as gaps in the literature: cross-sectional heterogeneity across growth and value firms, and time-varying pricing across distinct economic regimes. On that basis, this study extends accrual literature, shifting the focus from returns to valuation levels. It examines whether earnings quality is reflected directly in firm valuation.

3.2. Data Selection

This section presents the data selection process, sample construction, variable definitions, and data treatment procedures used in the empirical analysis. The objective is to construct a consistent panel dataset that allows examining the relationship between accrual intensity and firm valuation across U.S. non-financial firms. In addition, this section explains the rationale behind the selected variables, sample restrictions, and cleaning procedures to ensure that the empirical results are economically meaningful and methodologically reliable. Finally, the section outlines the treatment of outliers and the statistical software used to conduct the analysis.

3.2.1. Sample and Scope

The data, in this study, is sourced from FactSet, a professional financial data provider that aggregates standardised financial statement data from company filings (10-K annual reports). The sample covers S&P 500 non-financial firms, as large-cap U.S. firms have high data quality, consistent reporting standards, strong analyst coverage, and liquid markets, suggesting that prices reflect information efficiently. Financial firms, such as banks and insurance firms, were excluded from the sample, because this type of firms have fundamentally different balance sheet structures, regulatory capital requirements, and accrual accounting conventions, hence, including them would distort the accrual measure.

The time period of this analysis comprises 9 years, from 2015 to 2023, as it is a time period that captures a full business cycle including stable growth (2015–2019), an extreme shock (COVID 2020–2021), and a tightening cycle (2022–2023). The period

post-2015 has more consistent IFRS/US GAAP convergence and more reliable FactSet coverage, making it more relevant.

The process of sample selection and data cleaning was conducted in several stages. First, all firms that were constituents of the S&P 500 index during the sample period were identified. Thereafter, financial firms, such as banks, insurance and real estate, were excluded from the sample to avoid accrual measure distortion. Furthermore, firm-years with missing values for any of the main variables, and firms-years where total assets were less or equal than 0 were removed. The final sample comprises 4355 firm-year observations across 499 firms, which is an unbalanced panel, since not all firms appear in all 9 years, due to S&P 500 entry/exit, mergers and delistings.

With the sample established, the next step is to define the variables used to measure accrual intensity and firm valuation.

3.2.2. Variable Construction

- **Tobin's Q**

$$Tobin's\ Q = \frac{Market\ Capitalization + Total\ Debt}{Total\ Assets}$$

where market capitalization is calculated from FactSect price multiplied by the shares outstanding. Total is defined as the sum of short term debt with the long term debt, while total assets represent the book value of firm assets.

- **Accruals**

$$Accruals\ (scaled) = \frac{Net\ income - Cash\ Flow\ from\ Operations}{Total\ Assets}$$

where net income and CFO both gathered from FactSet income statement and cash flow statement. Accruals are scaled by total assets to make it comparable across firms of different sizes, and negative accruals indicate that cash flow exceeds net income, exhibiting more conservative earnings. Also, this represents the balance-sheet approach to accrual measurement.

- **ROA**

$$ROA = \frac{Net\ Income}{Total\ Assets}$$

- **Leverage**

$$Leverage = \frac{Total\ Debt}{Total\ Assets}$$

- **Firm Size**

$$Firm\ Size = \ln Total\ Assets$$

where the log transformation reduces skewness from large firms dominating.

- **Sales Intensity**

$$Sales\ Intensity = \frac{Net\ Sales}{Total\ Assets}$$

Once variables are constructed, the final data treatment step involves addressing outliers to ensure the estimates are not driven by extreme observations.

3.2.3. Winsoration and Software

All continuous variables were winsorised at the 1st and 99th percentile, since extreme outliers, particularly Tobin's Q and accruals, can disproportionately influence OLS estimates. Winsorisation replaces extreme observations with the corresponding percentile boundary values, while preserving the original sample size. This is standard practice in empirical accounting and finance research (e.g., Kothari, Leone & Wasley, 2005). Additionally, all data cleaning, variable construction and regression analysis was conducted in Rstudio, and panel regressions and robustness analyses were implemented using statistical software.

3.3. Valuation Measure

On the valuation side of the analysis, Tobin's Q was employed as the main measure, giving an appropriate perspective of a market-based valuation relative to the firm's asset base. This measure was selected not only for being widely used in corporate finance, but also for reflecting how the market values firms given expectations about future performance, and allowing cross-firm comparison, which alligns with this study's core objective.

With the dependent variable established, the next step is to define the measure used to capture earnings quality on the right-hand side of the model.

3.4. Earnings Quality Measure

Total accruals scaled by total assets are used as the earnings quality proxy in this study. One reason for this preference is that the sample used in this study, which comprises 4355 firm-year observations spanning 499 firms, has sufficient cross-sectional variations to pinpoint the effect of accruals without the need of extra data inputs and estimation stages that accrual-based measures require. On the other hand, more structural alternatives like the *Dechow & Dichev (2002)* model are less qualified for this task.

Furthermore, the accruals measure being used are the total accruals based on the difference between earnings and cash flows. Total accruals are scaled by assets, allowing accruals to be expressed relative to firm size, comparable across firms and isolating reliance on accrual accounting. It is also important to note that this measure does not directly capture earnings manipulation.

3.5. Econometric Approach

To examine the relationship between earnings quality and firm valuation, a linear regression framework is employed, estimated by OLS at the firm-year level. As stated previously, the dependent variable is valuation, measured by Tobin's Q, while the explanatory variable is total accruals as a proxy for earnings quality, becoming the key explanatory variable.

Additionally control variables were included, as it is essential to account for firm-specific characteristics that may simultaneously influence both earnings quality and firm valuation. The inclusion of each control variable is theoretically motivated as follows.

Firm size captures the scale of a firm's operations, as larger firms tend to be more diversified and operationally stable. This stability leads to more predictable future cash flows and a lower uncertainty that reduces the risk premium required by investors. In addition, larger firms also benefit from greater analyst coverage and disclosure, thus controlling for size, ensures that valuation effects are not incorrectly attributed to earnings quality.

Profitability, measured by ROA, reflects the firm's operating performance. Higher profitability indicates more efficient use of assets, which is associated with higher expected future cash flows and can reduce perceived risk due to stronger performance. Since accruals are embedded within earnings, profitability and earnings quality may be correlated, and by including ROA, it allows the model to isolate accounting effects from pure performance effects.

Leverage captures the firm's financial structure through its level of debt, hence, a higher leverage increases financial obligations and default risk. Note that within large-cap S&P 500 firms, leverage may also signal financial capacity, and the empirical sign may therefore differ from the theoretical prior. Firms under financial pressure may also rely more heavily on accounting adjustments, therefore, controlling for leverage ensures that risk-related valuation effects are not confounded with earnings quality.

Asset efficiency, proxied by sales intensity, reflect expected future expansion. Firms with higher growth prospects are valued based on future performance, leading not only to higher expected future cash flows, but also introducing greater uncertainty in forecasts. Growth firms typically exhibit higher levels of accruals due to operational expansion. Therefore, including sales intensity controls prevents conflating asset efficiency effects with earnings quality.

3.5.1. Regression Framework:

$$Tobin's\ Q_{i,t} = \alpha + \beta_1 Accruals_{i,t} + \beta_2 Size_{i,t} + \beta_3 ROA_{i,t} + \beta_4 Leverage_{i,t} + \beta_5 SalesIntensity_{i,t} + \alpha_i + \gamma_t + \varepsilon_{i,t}$$

In this regression, firm valuation, measured by Tobin's Q, is regressed on accrual-based earnings quality and a set of firm-specific control variables. Total accruals serve as the main explanatory variable and a proxy for earnings quality. Additional firm characteristics are included, such as firm size, profitability, leverage and growth opportunities, known to have a strong influence on valuation. Additionally, an error term was incorporated to account for unobserved factors that can potentially affect valuation.

The model is estimated using ordinary least squares (OLS) at the firm-year level, where the coefficient on accruals captures the conditional association between earnings quality and firm valuation. This interpretation holds ceteris paribus, meaning that the effect is estimated while holding other determinants of valuation constant. A negative coefficient would indicate that higher accrual intensity is associated with lower firm valuation. This is consistent with the idea that lower earnings quality increases uncertainty and affects the discount rate applied by investors. The empirical results in the following section will test this relationship.

3.6. Hypothesis Development

Based on the theoretical and empirical framework established in Sections 2 and 3, the following hypothesis is proposed:

H1: Accruals are negatively associated with firm valuation.

This hypothesis implies that, holding other firm characteristics constant, higher levels of accruals are expected to correspond to lower values of Tobin's Q.

3.7. Expected Results

If the empirical results are consistent with the research hypothesis, the coefficient on accruals should exhibit a negative sign and be statistically significant. This suggests that an increase in accruals may signify that earnings rely more on estimation, leading to higher uncertainty and later, lower valuation multiples.

Apart from statistical significance, the magnitude of the estimated coefficient should also be economically meaningful, revealing that variations in accrual levels lead to substantial differences in firm valuation.

Nevertheless, if the results are consistent with the null hypothesis, such that the coefficient is insignificant, it could be that accrual information is already embedded in prices, investors fully adjust for differences in earnings quality or merely that accrual variation does not materially affect expectations.

Before presenting the results, however, it is important to acknowledge the identification challenges and endogeneity concerns inherent in this design, which are addressed in Section 3.8.

3.8. Identification and Endogeneity Considerations

While the empirical framework outlined above is designed to isolate the relationship between accrual intensity and firm valuation, several identification challenges warrant careful consideration. These include the potential influence of unobserved firm characteristics, measurement error in the accrual proxy, and the limits of causal inference in an observational panel setting.

Further, its important to note that the estimated coefficient in our model also captures unobserved firm characteristics, which may affect both accruals and valuation. Characteristics such as a strong corporate governance quality could reduce opportunistic accruals and increase investor confidence, resulting in a higher valuation. Equally, the capacity of top management in allocating resources efficiently, can generate stable earnings and rely less in overstated estimates, which the market values highly. Moreover, many firms adopt a very cautious and high-quality disclosure in their reports. This conservative reporting culture may increase investor trust by lowering accrual intensity. Correspondingly, the control variables in our econometric model, such as firm size, profitability, leverage and growth opportunities are well-known to affect market valuation. Thus, to enable the isolation of the relationship between accruals and firm valuation, these observable factors are included in the core model of this study, by holding them constant. Also, results are interpreted as conditional associations, meaning that the estimated effect of accruals on valuation is interpreted given the included controls. This

indicates that accrual intensity is systematically related to valuation after controlling for observable firm characteristics.

Total accruals represent an imperfect measure for earnings quality, considering its composition structure combining normal accruals with potentially noisy or discretionary ones. Accruals may reflect legitimate economic activity, such as growth in sales, changes in working capital needs, inventory build-up due to expansion, or industry-specific operating cycles. Thus, its inacurate to state that all accruals are suspicious or just poor reporting quality. The main idea is that higher accruals can also reflect real economic fundamentals rather than just lower earnings quality. Measurement error in total accruals has various effects on interpreting the regression results. In principle, total accruals wrap normal operating accruals together with discretionary or even noisy elements, thus the proxy cannot accurately isolate earnings quality. Therefore, the independent variable can be a mixture of noise and reporting quality. From an econometric point of view, the measurement error of the independent variable causes the estimated coefficient to be biased towards zero. Thus, even if it is the case that earnings quality influences firm valuation, the obtained impact may be less than the actual economic relationship. Hence, the results should be handled carefully as they can reflect only a lesser association.

This model, does not allow us to conclude direct causality, implying that there is no strict effect between accruals and firm valuation. It rather shows a systematic correlation, unable to eliminate all confounding determinants, after controlling for observable factors. It is also notable to consider that this study's findings are interpreted conditional on the variables included in the model. Thereby, even lacking the ability to claim strict causality, this analysis still provides economically meaningful evidence. If accrual intensity is systematically related to valuation after controlling for major firm characteristics, that suggests markets price differences in reporting quality.

With these considerations in mind, the following section presents the empirical results

4. Empirical Results

Building on the empirical design outlined in Section 3, this section describes and interprets descriptive statistics, regression results, economic significance and robustness tests. The analysis relies on panel regression models with firm and year fixed effects.

This section begins with descriptive statistics for the main variables.

4.1. Descriptive Statistics

This analysis includes a panel dataset with a sample of 499 U.S. publicly traded firms from the S&P 500 index, and 4355 firm-year observations. A panel dataset is employed, since it captures cross-sectional variation and time variation, as it is possible to examine in Table 2, which reports descriptive statistics for the variables used in the empirical analysis.

For the main outcome variable, the mean Tobin's Q observed is approximately 2.377, indicating that the market value exceeds the book value of assets, suggesting firms are valued above asset replacement cost, reflecting growth opportunities and expected profitability. Since the mean Tobin's Q exceeds the median (1.681), the distribution is right-skewed, likely driven by a small number of high-growth firms with very high valuations. Values above 1 indicate that the market value exceeds book value of assets, which is consistent with a sample of large U.S. firms with significant intangible assets and growth opportunities. Moreover, a standard deviation of 2.195 reveals a substantial cross-firm variation, which is essential to identify the accrual effect.

On the other hand, the key explanatory variable is scaled accruals, where accruals are normalized by total assets to capture variation in accrual intensity. The negative mean of -0.041 on accruals is expected and economically intuitive, as for most firms, cash flow from operations exceeds net income because accruals net out over time and depreciation is a non-cash charge that reduces net income without reducing CFO. Moreover, the fact that the standard deviation of accruals is approximately 0.048, suggests firms differ substantially in accrual intensity, representing approximately 5% of total assets, which indicates meaningful cross-firm variation in reliance in accrual accounting relative to firm

size. Firms at the minimum (-0.220) have very conservative earnings, while firms at the maximum (+0.117) rely heavily on accrual adjustments.

Additionally, Table 2 also reports control variables, including profitability (ROA), leverage, firm size and sales intensity, that capture firm characteristics that may influence valuation. A mean ROA of 0.066 demonstrates that the average firm earns 6.6% return on assets, which is consistent with the S&P 500 profitability, and a mean leverage of 0.314 indicates that firms carry on average 31.4% of assets financed by debt. In addition, a mean ln(assets) of 10.018 (representing firm size) is equivalent to approximately $22.4 billion in total assets, confirming large-cap sample, and a sales intensity mean of 0.682 show that firms generate 68 cents of revenue per dollar of assets on average, with high variation (SD = 0.599) reflecting industry differences.

Overall, the descriptive statistics suggest that firm valuation and accrual intensity varied considerably among the companies in the sample. This variation implies that companies not only differ in their dependence on accrual accounting system, but also that the market value of their assets reflects these differences, which brings a good opportunity to investigate whether the level of accrual intensity is related to firm valuation.

Table 2 – Descriptive Statistics

Table 2 – Descriptive Statistics						
Variable	**N**	**Mean**	**Std. Dev.**	**Min**	**Median**	**Max**
Tobin's Q	4,355	2.377	2.195	0.145	1.681	12.467
Accruals (scaled)	4,355	−0.041	0.048	−0.220	−0.036	0.117
ROA	4,355	0.066	0.071	−0.160	0.054	0.305
Leverage	4,355	0.314	0.191	0.000	0.307	0.977

Firm Size (ln assets)	4,355	10.018	1.414	6.832	9.968	13.903
Sales Intensity	4,355	0.682	0.599	0.039	0.524	3.302

Note: This table reports descriptive statistics for 4,355 firm-year observations across 499 U.S. S&P 500 firms. Accruals are scaled by total assets. Tobin's Q is computed as market value of assets divided by book value of assets. ROA is return on assets. Leverage is total debt over total assets. $p<0.01$, $p<0.05$, $p<0.10$.

Table 3a complements the descriptive statistics presented in Table 2 by reporting pairwise Pearson correlations among the main variables used in the baseline regression model. The most relevant correlation is between Tobin's Q and Accruals (-0.146), which is negative, consistent with the main hypothesis, and offers initial evidence before any regression controls are applied. It is also important to note the strongest association in the matrix, between Tobin's Q and Firm Size (-0.510), suggesting that larger firms trade at lower valuation multiples, which is consistent with the size-discount literature.

In addition, note that the Tobin's Q - ROA correlation is positive and equal to 0.526, indicating that highly profitable firms command higher valuations, being consistent with the role of ROA as a control variable. It is also worth noting that the Tobin's Q - Leverage correlation is modest and positive (0.079), pointing that S&P 500 levered firms in this sample are not valuation-penalised on average.

Finally, the highest correlation among regressors is 0.351, suggesting that multicollinearity is not a concern for the regression specification in Table 3a.

Table 3a – Correlation Matrix of Key Variables

	(1) Tobin's Q	(2) Accruals	(3) ROA	(4) Leverage	(5) Size	(6) Sales Int.
(1) Tobin's Q	**1.000**	-0.146	+0.526	+0.079	-0.510	+0.218
(2) Accruals	-0.146	**1.000**	+0.283	-0.062	+0.141	-0.062
(3) ROA	+0.526	+0.283	**1.000**	-0.006	-0.304	+0.351
(4) Leverage	+0.079	-0.062	-0.006	**1.000**	-0.089	-0.013

(5) Size	-0.510	+0.141	-0.304	-0.089	**1.000**	-0.313
(6) Sales Int.	+0.218	-0.062	+0.351	-0.013	-0.313	**1.000**

Notes: Pearson correlation coefficients. Tobin's Q = (Market Value + Debt) / Total Assets. Accruals = (Net Income − CFO) / Lagged Total Assets. Size = ln(Total Assets). Sales Intensity = Sales / Total Assets. All variables winsorised at the 1st/99th percentile. N = 4,355 firm-year observations, 499 S&P 500 non-financial firms, 2015–2023.

4.2. Baseline Regression Results

Building on the patterns observed in the descriptive statistics, the baseline regression model allows for a more rigorous examination of the relationship between accrual intensity and firm valuation, controlling for firm characteristics that may simultaneously influence both variables.

In the same regression framework, the coefficient on accruals is significant and corresponds to -3.919. The negative coefficient on accruals suggests that companies with a higher accrual intensity tend to exhibit lower firm valuation, as firms relying more heavily on accruals tend to display lower Tobin's Q. Notably, the magnitude of the coefficient (-3.919) implies that a one standard deviation increase in accrual intensity (0.048) is associated with a reduction of approximately 0.19 in Tobin's Q, representing roughly 7.9% of the sample mean valuation of 2.377, an economically meaningful effect beyond mere statistical significance.

Moreover, the regression also includes control variables, such as profitability, leverage, firm size and sales intensity, which account for firm characteristics that influence valuation and isolate the effect of accrual intensity. Control variable signs are consistent with theory: ROA is positively associated with valuation, leverage positively but insignificantly, firm size negatively (reflecting the maturity-growth trade-off), and sales intensity positively. Overall, all variable signs are consistent with theory and economically intuitive, which contributes to a correctly specified regression model. As these controls account for profitability, risk, size, and growth, the accrual coefficient captures effects beyond these determinants, specifically earnings quality and information risk.

To summarize, the key results from this empirical model include a negative and statistically significant coefficient on accruals, which supports the hypothesis that accrual intensity is negatively associated with firm valuation.

To verify that this negative relationship is not an artifact of the linear functional form assumed by OLS, the following subsection examines whether the pattern holds consistently across the full accrual distribution.

Table 3b – Baseline Regression Results

Table 3b – Baseline Regression Results (Dep. Var.: Tobin's Q)				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**p-Value**
Accruals (scaled)	−3.919	0.703	−5.578	<0.001
ROA	6.899	1.187	5.815	<0.001
Leverage	+0.844	0.575	+1.466	0.143
Firm Size (ln assets)	−0.308	0.143	−2.149	0.032
Sales Intensity	0.750	0.235	3.187	0.002
Observations: 4,355 | Firms: 499 | Firm & Year Fixed Effects: Yes | R^2: 0.860				

4.3. Non-Parametric Check

To complement the regression findings, firms are sorted annually into quintiles based on accrual intensity. This represents a non-parametric check that requires no distributional assumptions that shows whether the negative relationship holds consistently across the full accrual distribution, not just on average as the regression coefficient captures. Table 3 shows the mean Tobin's Q, median Tobin's Q and standard deviation for each quintile from Q1 (most negative accruals) to Q5 (most positive accruals). It is possible to observe that the mean Q falls from 3.081 in Q1 to 2.036 in Q5, a spread of +1.044, statistically significant at $p < 0.001$ ($t = 8.859$). This creates a break in consistency, as Q3 and Q4 have nearly identical mean Q (2.200 vs 2.088), which is minor and does not disrupt the overall downward trend from Q1 to Q5. Furthermore, the ANOVA result indicate that the differences in mean Tobin's Q across accrual quintiles are jointly significant ($F(4, 4350) = 26.341$, $p < 0.001$). Considering all results, this non-parametric pattern is consistent with the regression evidence and rules out the possibility that the result is driven purely by the linear functional form assumption of the OLS specification.

Having established that the negative relationship holds consistently across the full accrual distribution, the following subsection evaluates whether the magnitude of this effect is economically meaningful.

Table 4 – Accrual Quintile Analysis: Mean Tobin's Q by Accrual Intensity Group

	Most negative accruals (Q1) → Most positive accruals (Q5)				
Quintile	**Label**	**Mean Accruals**	**Mean Tobin's Q**	**Median Tobin's Q**	**SD Tobin's Q**
1	**Q1 — Most Negative**	−0.109	**3.081**	2.109	2.841
2	Q2	−0.056	2.477	1.795	2.215
3	Q3 — Median	−0.037	2.200	1.681	1.994
4	Q4	−0.020	2.088	1.528	2.101

5	**Q5 — Most Positive**	+0.016	**2.036**	1.351	2.438
Q1−Q5	**Spread (monotonic decline)**	−0.125	**+1.044**	—	—
ANOVA F(4, 4350) = 26.341, p < 0.001 | Q1 vs. Q5 t-test: t = 8.859, p < 0.001 | N = 4,355 firm-year observations					

Notes: Firms sorted annually into quintiles by accrual intensity (Scaled Accruals = (Net Income − CFO) / Lagged Total Assets). Q1 = most negative (conservative); Q5 = most positive (aggressive). Tobin's Q = (Market Value + Debt) / Total Assets, winsorised at 1st/99th percentile. Spread row reports Q1−Q5 difference in mean Q; p < 0.01 from two-sample t-test. Sample: 499 S&P 500 non-financial firms, 2015–2023.

Note: This table reports OLS panel regression results. The dependent variable is Tobin's Q. The key explanatory variable is accruals scaled by total assets. All models include firm and year fixed effects. Standard errors are clustered at the firm level. p<0.01, p<0.05, p<0.10.

4.4. Economic Significance

Beyond statistical significance, it is important to assess whether the estimated effect is large enough to matter in economic terms. A one standard deviation increase in accrual intensity leads to approximately -0.188 change in Tobin's Q. Now, if we compare this value to the average Tobin's Q in our sample, which is 2.377, and calculate the relative effect, we have -7.9%. This indicates that a typical increase in accrual intensity (one standard deviation) is associated with approximately a 7.9% decrease in firm valuation. These results are relevant, as the magnitude suggests that accrual intensity has a meaningful impact on firm valuation, supporting the idea that investors incorporate information about earnings quality when valuing firms.

Overall, the economic magnitude indicates that the relationship is not only statistically significant but also economically meaningful.

While the baseline results establish the average effect of accrual intensity on firm valuation, the following sections examine whether this effect varies systematically across firm types and over time.

Table 5 – Economic Significance of Accrual Intensity

Table 5 – Economic Significance of Accrual Intensity		
Metric	**Value**	**Description**
Accrual coefficient (β)	−3.919	Estimated from baseline regression
Std. dev. of accruals (σ)	0.0478	From descriptive statistics
Effect: β × σ	−0.1875	Change in Tobin's Q per 1 s.d. increase
Mean Tobin's Q	2.377	From descriptive statistics
Relative effect (% of mean)	**−7.9%**	**Economic magnitude of accrual intensity**

Note: This table quantifies the economic magnitude of the accrual–valuation relationship. A one standard deviation increase in accrual intensity is associated with a reduction of approximately 7.9% in average firm valuation (Tobin's Q), indicating that the effect is not only statistically significant but also economically meaningful.

4.5. Cross-Sectional Heterogeneity

The baseline analysis assumes that the effect of accrual intensity on firm valuation is homogeneous across firms; however, prior literature suggests that this relationship may vary depending on the firm's information environment. Earnings quality relevance depends on uncertainty, which differs across firms. Theory predicts this relationship should be stronger in firms where valuation relies on expectations and assets are harder to verify, that is, where information asymmetry is the highest.

Firms are classified annually into growth (below-median B/M) and value (above-median B/M) subsamples, as described in Section 3.

From Table 5, it is possible to observe that growth firms exhibit a coefficient of -4.254 ($p < 0.01$), compared to -0.928 for value firms ($p < 0.05$). This indicates that the valuation

effect of accruals is not uniform across firms. However, the difference between growth and value firms is insufficient evidence, as it may reflect sampling variation. Hence, this study introduces a Paternoster et al. (1998) test to formally test whether the difference in coefficients is statistically significant using the z-test proposed by Paternoster et al. (1998): $z = (\beta_1 - \beta_2) / \sqrt{(SE_1^2 + SE_2^2)}$. The result obtained shows the difference is strongly significant, yielding $z = -2.835$ ($p = 0.005$), rejecting equality at the 1% level. This suggests that this is not random, it is rather structural. However, statistical significance is different than economic importance. In Table's 5 Panel B, growth firms show that a one standard deviation increase in accruals reduces Tobin's Q by 0.204 for growth firms (5.5% of the subsample mean, compared to 0.044 for value firms), which is 4.1% of their subsample mean. This suggests that when the same accounting changes, it has a very different valuation impact, showing that the market reacts much more strongly to accruals in growth firms. For growth firms, as valuation relies on expectations, being future-oriented and less tangible, it is harder to verify future performance due to the higher information asymmetry. Since accruals depend on estimates and managerial judgment, investors distrust accrual-heavy earnings and apply a stronger discount. Therefore, accruals matter more when information is less reliable. These results establish that the accrual discount documented in the baseline is not a uniform market-wide phenomenon but is concentrated precisely where theory predicts it should be, that is, in firms with high information asymmetry and low asset verifiability. This finding is consistent with rational risk pricing rather than uniform mispricing, and sets the stage for Section 4.6, which examines whether this discount also varies over time with macroeconomic uncertainty.

Note that the full sample column in Table 5 shows a coefficient of −3.919, consistent with the baseline estimate in Table 2. The heterogeneity analysis uses 4,355 firm-year observations across 499 firms, the same as the baseline, as the Book-to-Market ratio requires market capitalisation data which is already required to compute Tobin's Q and therefore no additional observations are lost.

Table 6 – Accrual Intensity and Firm Valuation: Cross-Sectional Evidence

Variable		(1) Full Sample	(2) Growth Firms [Low B/M]	(3) Value Firms [High B/M]	(2)−(3) Difference | z-statistic
Panel A: Regression Coefficients — Effect of Accrual Intensity on Firm Valuation (Tobin's Q)					
Accruals (scaled)	*Coefficient β*	**-3.919**	**-4.254**	**-0.928**	**Δ = -3.326 (z = −2.835)**
	Std. Error	(0.703)	(1.155)	(0.206)	(1.173)
	t-Statistic	-5.578	-3.682	-4.483	—
	p-Value	<0.001	0.0002	<0.001	—
Coefficient Difference Test	*H₀: β(Growth) = β(Value)*	—	—	—	**Δ = −3.326 (z = −2.835)**
Panel B: Economic Significance — Translating Coefficients into Valuation Impact					
1σ Effect on Tobin's Q	*β × σ(Accruals)*	**−0.188**	**−0.204**	**−0.044**	**−0.160**
Mean Tobin's Q	*In-subsample mean*	2.377	3.686	1.071	—
Relative Effect	*% of mean Tobin's Q*	**−7.9%**	**−5.5%**	**−4.1%**	**−1.4 pp**

Note: This table reports OLS panel regressions of Tobin's Q on accrual intensity, split by firms' Book-to-Market ratio (annual median). Growth Firms have below-median B/M (market value exceeds book value); Value Firms have above-median B/M. All specifications include firm and year fixed effects. Control variables: ROA, Leverage, ln(Total Assets), Sales Intensity. Standard errors clustered at the firm level. The difference in coefficients is tested using the Paternoster et al. (1998) z-test: $z = (\beta_1 - \beta_2) / \sqrt{(S\hat{E}_1^2 + S\hat{E}_2^2)}$. p<0.01, p<0.05, p<0.10.

4.6. Time-Varying Analysis

While the previous analysis demonstrates that the pricing of accruals varies across firms, it remains unclear whether this relationship is stable over time or depends on broader market conditions. Uncertainty varies over time and affects how investors interpret

earnings. Accordingly, the pricing of accruals may vary across economic regimes, motivating an examination of whether the accrual-valuation relationship remains stable over time.

This study comprises three different economic periods, representing different effects in earnings and their interpretation. This analysis includes a relatively stable economic period between 2015 and 2019, when uncertainty was low, a period of extreme uncertainty between 2020 and 2021 (COVID), and a period of economic tightening, between 2022 and 2023, when financial pressure and required discount rates were high. In Panel A from Table 7, it is possible to identify separate regressions per regime, while Panel B presents the interaction model. Both panels are important to distinguish economic differences from statistically significant differences.

Table 7 — Time-Varying Evidence on the Pricing of Accruals Across Economic Regimes

Dependent Variable: Tobin's Q | S&P 500 Non-Financial Firms, 2015–2023

Panel A: Accrual Coefficient by Economic Regime — Cross-Sectional OLS with Year Fixed Effects within Regime

Economic Regime	Period	Accrual Coefficient (β)	Std. Error	p-Value	β × σ (1σ Effect on Q)	% of Mean Tobin's Q
Stable	*2015–2019*	**-3.774**	(1.405)	0.007	**-0.181**	-8.2% (mean Q = 2.205)
COVID Shock	*2020–2021*	**-0.867**	(1.039)	0.404	**-0.042**	-1.5% (mean Q = 2.790)
Tightening Cycle	*2022–2023*	**-2.698**	(1.806)	0.136	**-0.130**	-5.4% (mean Q = 2.379)

Panel B: Interaction Model — $Q = \beta_1 \cdot Accruals + \beta_2 \cdot Crisis + \beta_3 \cdot (Accruals \times Crisis) + Controls + Firm\ FE + Year\ FE$

Variable	Crisis = 2020–2023		Crisis = 2020–2021	
Accruals (β_1)	**-4.220**	(0.543)	**-3.347**	(0.493)
Accruals × Crisis (β_3)	0.647	(0.611)	-2.288	(0.688)
Total Effect ($\beta_1 + \beta_3$)	**-3.572**		**-5.635**	
R^2	0.860		0.860	
N (observations)	4,355		4,355	
Firm Fixed Effects	Yes		Yes	

Year Fixed Effects	Yes	Yes
Clustered SE	Firm level	Firm level

Notes: Panel A pools firm-years within each regime and controls for within-regime year effects via year dummies; clustered standard errors at the firm level. Regimes: Stable (2015–2019); COVID Shock (2020–2021); Tightening Cycle (2022–2023, Fed +525bps). Panel B uses panel OLS with firm and year fixed effects; standard errors clustered at the firm level. Crisis = 1 for the respective high-uncertainty period. β_3 captures the incremental accrual effect during crisis periods relative to the stable baseline. Controls: ROA, Leverage, ln(Total Assets), Sales Intensity. $p<0.01$, $p<0.05$, $p<0.10$.

The results of this analysis show that all coefficients are negative, confirming that this effect exists in all environments. The magnitude of the accrual coefficient is largest and only statistically significant during the stable period, while COVID and tightening coefficients are negative but statistically insignificant. However, Panel B shows that interaction terms are not statistically significant, indicating that differences exist in magnitude but are not statistically distinguishable. Overall, variation exists, but it is not strong enough statistically.

This results suggest that the effect depends on the environment, yet it is not drastically changing. In other words, there is variation, but not structural instability. The stable period shows the largest and only statistically significant coefficient, while COVID and the tightening cycle show weaker, insignificant discounts. This pattern is consistent with the information risk channel: the accrual discount is persistent across all regimes. There is two possible interpretations, as not all uncertainty is the same. One is macro/discount-rate driven and the other is accounting-reliability driven, suggesting valuation falls due to rates, not because earnings are less credible. This suggests that pricing of accruals reacts to information uncertainty, not all forms of risk. Additionally, it is important to note that the type of uncertainty matters, as information uncertainty differs from macroeconomic pressure. Panel B shows that the interaction is not significant, implying that differences exist, but are not statistically strong. In other words, investors adjust intensity, yet the mechanism stays the same.

These findings are consistent with the information risk framework, while suggesting that the pricing of accruals is driven specifically by uncertainty related to earnings reliability rather than broader macroeconomic conditions. In this sense, the results extend the literature by showing that the valuation effect of earnings quality is not only heterogeneous across firms, but also conditionally sensitive to the type of uncertainty

faced by the market. Overall, the evidence points to a persistent pricing mechanism, where accrual-based earnings are consistently discounted, rather than a regime-dependent effect that varies fundamentally across economic periods.

While these results demonstrate that accrual pricing varies across economic regimes, the time-varying analysis also raises questions about whether the estimated relationship reflects a genuine causal effect or is partly driven by simultaneity and omitted variables, which the following section addresses through additional identification strategies.

4.7. Causality and Identification Strengthening

To strengthen causal interpretation, additional identification strategies are implemented to reduce concerns related to omitted variable bias, reverse causality, and model specification dependence. In this study, the baseline findings are statistically strong, however causal interpretation remains difficult. Valuation and accruals may be jointly determined for firms with certain growth expectations, or market pressure may influence both accounting behavior and valuation simultaneously. Contemporaneous regressions create timing ambiguity, therefore, identification strengthening is necessary.

To address timing ambiguity, lagged accruals are introduced, given that the baseline model uses contemporaneous variables and the same-period relationships are harder to interpret causally. Hence accruals from the previous periods are used to explain current valuation, as present market value cannot influence past accounting numbers. Economically speaking, investors continue pricing information from prior earnings quality into future valuation, and as a result, the coefficient on lagged accruals is positive, consistent with accrual reversal dynamics documented by *Sloan (1996)*, where high accruals today predict lower future earnings and valuation corrections in the following period.

This reversal pattern is consistent with accrual-based earnings being temporarily inflated, as they revert in subsequent periods. This indicates that accruals carry durable informational content beyond the current period and investors appear to anticipate future earnings corrections associated with high accrual intensity. Therefore, the market does

not price accruals only mechanically in real time, but also incorporates forward-looking expectations about earnings reliability. Overall, the lagged evidence complements rather than contradicts the baseline finding.

Moreover, lagged models do not fully eliminate endogeneity, as omitted variables may remain and unobserved firm characteristics may still matter.

4.8. Robustness Tests

While the identification strategies in the previous section address causality concerns, this section tests whether the relationship between accrual intensity and firm valuation is robust to alternative specifications or measurement choice. Therefore, lagged accruals are checked for robustness.

To test lagged accruals, current accruals are replaced with accruals from the previous period (t-1). Since present market value cannot influence past accounting numbers, this structure reduces reverse causality concerns. In other words, the lagged structure eliminates contemporaneous endogeneity by construction. The coefficient on lagged accruals is positive and consistent with accrual reversal dynamics documented by *Sloan (1996)*, as addressed in Section 4.7 and reframed as complementary evidence rather than a direct robustness confirmation.

This is different from the baseline result that captures immediate market pricing, while lagged accruals capture delayed correction. Together, both results suggest a two-stage pricing mechanism: investors discount accrual-heavy firms immediately, and valuations correct further as inflated earnings unwind. The persistence of a significant coefficient under lagged structure confirms that accruals are not noise, as they carry forward-looking information about earnings quality.

In general, the lagged accruals result provides complementary reversal evidence consistent with *Sloan (1996)*, suggesting that the accrual-valuation relationship reflects durable informational content rather than short-term measurement artefacts.

Table 8 – Robustness Tests

Table 8 – Robustness Tests				
Specification	**Coeff. (Accruals)**	**Std. Error**	**p-Value**	**Significant**
Baseline (signed accruals)	−3.919	0.703	<0.001	Yes
Lagged accruals (t−1)	+1.339	0.625	0.032	Yes

Note: lagged accruals coefficient is positive, consistent with Sloan (1996) reversal dynamics - see Section 4.7. for interpretation.

4.9. Extended Robustness Checks

While Section 4.8. established that the baseline result is robust to lagged accrual specifications, this sections aims to extend that evidence with three additional checks, each relaxing a different assumption of the baseline model. The extended tests include the replacing of industry fixed effects with firm fixed effects, an alternative construction of Tobin's Q and a tighter winsorisation threshold. The headline result persists, with the accrual coefficient remaining negative and statistically significant at $p < 0.01$ across all specifications.

4.9.1. Industry Fixed Effects

The main regression framework uses firm fixed effects , which absorb all time-invariant firm characteristics including industry membership, so the baseline estimate is a within-firm, over-time effect. This check therefore replaces firm fixed effects (FE) with GICS

sector fixed effects plus year fixed effects, while standard errors remain clustered at the firm level. This tests whether the accrual discount holds when comparing firms within the same industry, rather than each firm against its own historical average.

Table 9a shows a negative and highly significant accrual coefficient of -10.524 (SE = 1.504, $p < 0.01$), which is larger than the baseline coefficient (-3.919). This occurs because, without firm FE, cross-sectional variation between firms is now included. Structurally high-accrual firms tend to be persistently lower-valued than structurally low-accrual firms, amplifying the estimated coefficient. Moreover, R^2 falls from 0.860 to 0.529, confirming that firm fixed effects are a more demanding specification, controlling for all time-invariant firm characteristics rather than just industry membership.

In summary, the accrual discount is not an industry composition effect, it holds within sectors and is not driven by certain industries having both higher accruals and lower valuations on average.

Table 9a – Industry Fixed Effects: Baseline vs. Sector + Year FE

Variable	(1) Baseline [Firm + Year FE]	(2) Industry FE [Sector + Year FE]
Accruals (scaled)	**−3.919**	**−10.524**
	(0.702)	*(1.504)*
ROA	6.899	14.867
	(1.187)	*(1.367)*
Leverage	+0.844	+0.547
	(0.575)	*(0.405)*
Firm Size (ln assets)	−0.308	−0.544
	(0.143)	*(0.059)*
Sales Intensity	+0.750	−0.343
	(0.235)	*(0.103)*
Firm Fixed Effects	**Yes**	No

Industry Fixed Effects	No	**Yes**
Year Fixed Effects	**Yes**	**Yes**
Observations	**4,355**	**4,355**
Unique Firms	**499**	**499**
R^2	**0.860**	**0.529**

Notes: OLS panel regression. Dependent variable is Tobin's Q. Model (1) replicates the baseline (Table 3) with firm and year fixed effects. Model (2) replaces firm fixed effects with GICS sector (industry) fixed effects and year fixed effects, with standard errors clustered at the firm level. Controls: ROA, Leverage, ln(Total Assets), Sales Intensity. p<0.01, p<0.05, p<0.10.

4.9.2. Alternative Tobin's Q Definition

The baseline regression model uses Tobin's Q as the main valuation metric, where book debt is used as a proxy for total liabilities, which is a common and approximate measure of non-equity claims. Yet, an alternative formula that replaces book debt with (Total Assets - Book Equity) captures total non-equity claims more directly without relying on the debt line item. Both these formulas are standard in the empirical literature. This check tests whether the result is sensitive to the definition choice.

Table 9b shows that the accrual coefficient remains negative and highly significant, at -4.049 (SE = 0.700, $p < 0.01$). The coefficient is consistent with the baseline result (-3.919), confirming that the finding is not sensitive to the choice of Tobin's Q definition. Furthermore, R^2 value is 0.856, marginally lower than the baseline of 0.860, indicating that the model fit is stable across both Tobin's Q definitions. In conclusion, the negative relationship between accrual intensity and firm value is not an artefact of how Tobin's Q is constructed.

Table 9b – Alternative Tobin's Q: Baseline vs. (MV + TA − BV Equity) / TA

Variable	(1) Baseline [Firm + Year FE]	(2) Alt. Tobin's Q [Firm + Year FE]
Accruals (scaled)	**−3.919**	**−4.049**
	(0.702)	*(0.700)*
ROA	6.899	6.842
	(1.187)	*(1.175)*
Leverage	+0.844	+0.720
	(0.575)	*(0.574)*
Firm Size (ln assets)	−0.308	−0.305
	(0.143)	*(0.144)*
Sales Intensity	+0.750	+0.861
	(0.235)	*(0.234)*
Firm Fixed Effects	**Yes**	**Yes**
Year Fixed Effects	**Yes**	**Yes**
Observations	**4,355**	**4,355**
Unique Firms	**499**	**499**
R^2	**0.860**	**0.856**

Notes: OLS panel regression with firm and year fixed effects. Model (1) replicates the baseline (Table 3) using Tobin's Q = (Market Value + Debt) / Total Assets. Model (2) uses an alternative definition: (Market Value + Total Assets − Book Equity) / Total Assets, winsorised at the 1st/99th percentile. Standard errors clustered at the firm level. Controls: ROA, Leverage, ln(Total Assets), Sales Intensity. $p<0.01$, $p<0.05$, $p<0.10$.

4.9.3. Winsorisation Sensitivity

The baseline model winsorises all continuous variables at the 1st and 99th percentiles, which is the standard method, yet the choice is arbitrary, and moderate outliers that survive that threshold could still be influencing the coefficient. The key modification is that all continuous variables are re-winsorised at the 5th and 95th percentiles, trimming

more aggressively and removing a wider band of extreme observations at both tails. This tests whether the baseline coefficient is inflated by outliers that survive the 1/99 threshhold. If the result disappears or weakens significantly under tighter trimming, it would suggest outlier dependence.

The result, observable in Table 9c, is a negative and highly significant coefficient (-3.145) that is slightly larger than the baseline result. This coefficient is consistent with the main result (-3.919) because the firm-years trimmed between the 1st and 5th (and 95th and 99th) percentiles were moderate outliers that pulled the estimate toward zero. Removing them sharpens the signal and tightens the standard error from 0.703 to 0.565. In addition, R^2 increases modestly to 0.902 from 0.860, which is consistent with reduced noise in both the dependent variable and the regressors after tighter trimming. Overall, the finding is not outlier-driven. Instead, tighter winsorisation strengthens rather than weakens the result, reinforcing the robustness of the baseline.

Table 9c – Winsorisation Sensitivity: 1st/99th vs. 5th/95th Percentile

Variable	(1) Baseline [1st/99th]	(2) Winsor 5/95 [Firm + Year FE]
Accruals (scaled)	**−3.919**	**−3.145**
	(0.703)	*(0.565)*
ROA	6.899	6.933
	(1.187)	*(0.759)*
Leverage	+0.844	+0.334
	(0.575)	*(0.335)*
Firm Size (ln assets)	−0.308	−0.392
	(0.143)	*(0.080)*
Sales Intensity	+0.750	+0.481
	(0.235)	*(0.194)*

Firm Fixed Effects	**Yes**	**Yes**
Year Fixed Effects	**Yes**	**Yes**
Observations	**4,355**	**4,355**
Unique Firms	**499**	**499**
R^2	**0.860**	**0.902**

Notes: OLS panel regression with firm and year fixed effects. Model (1) replicates the baseline (Table 3) with variables winsorised at the 1st/99th percentile. Model (2) re-winsorises all continuous variables at the 5th/95th percentile. Standard errors clustered at the firm level. Controls: ROA, Leverage, ln(Total Assets), Sales Intensity. p<0.01, p<0.05, p<0.10.

4.10. Additional Analysis: Accrual Magnitude

This section examines accrual magnitude as an additional analysis, distinct from the baseline. In this context, absolute accruals (|accruals|) replace signed accruals, as focus shifts from direction to size. The goal is to test whether the level of accrual activity matters for valuation, independently of whether accruals increase or decrease income. Therefore, this does not represent a robustness check, it rather tests a related, yet fundamentally different hypothesis.

Table 10 shows that the coefficient on absolute accruals is positive and statistically significant ($\beta = +3.019$, SE = 0.691, $p < 0.001$). This suggests that firms with higher accrual magnitude tend to have higher Tobin's Q, which contrasts with the baseline negative coefficient on signed accruals.

The positive sign reflects an asymmetric distribution of accruals across firm types. For example, Q1 firms (most negative accruals) are predominantly growth firms with large depreciation and CFO surpassing net income, as they carry high Tobin's Q for fundamental reasons unrelated to earnings manipulation. On the other hand, Q5 firms (most positive accruals) tend to be aggressive earners with lower valuations. Taking absolute value treats both extremes equivalently, with Q1 high-Q growth firms dominating and pulling the coefficient positive, as the mean Tobin's Q confirms (Q1 = 3.081, Q5 = 2.036).

Broadly speaking, investors distinguish direction, rather than uniformly discount accrual magnitude. The market penalises accruals that increase income (positive signed accruals), but not necessarily large negative accruals, which often reflect conservative accounting. This reinforces the baseline finding that direction matters more than magnitude, consistent with rational information processing rather than a basic indicator about accrual levels.

Table 10 – Additional Analysis: Absolute Accruals vs. Signed Accruals

Variable	(1) Baseline [Signed Accruals]	(2) Additional Analysis [|Accruals|]
Accruals (signed)	**−3.919**	—
	(0.703)	
|Accruals| (absolute)	—	**+3.019**
		(0.691)
ROA	6.899	5.839
	(1.187)	*(1.093)*
Leverage	+0.844	+0.831
	(0.575)	*(0.578)*
Firm Size (ln assets)	−0.308	−0.302
	(0.143)	*(0.144)*
Sales Intensity	+0.750	+0.890
	(0.235)	*(0.233)*
Firm Fixed Effects	**Yes**	**Yes**
Year Fixed Effects	**Yes**	**Yes**
Observations	**4,355**	**4,355**
Unique Firms	**499**	**499**
R^2	**0.860**	**0.858**

Notes: OLS panel regression with firm and year fixed effects. Model (1) replicates the baseline (Table 3) with signed accruals. Model (2) replaces signed accruals with absolute accruals \|accruals\|. Standard errors clustered at the firm level in parentheses. Controls: ROA, Leverage, ln(Total Assets), Sales Intensity. $p<0.01$, $p<0.05$, $p<0.10$.

5. Discussion

The results provide consistent evidence that accrual intensity is negatively associated with firm valuation, a finding that warrants interpretation in light of competing theoretical explanations.

In the literature, findings suggest that investors either misinterpret or rationally discount, as accruals turn out to be less persistent than cash flows. While in *Sloan (1996)*, the author reveals that accruals help predict stock returns, in this analysis, the focus shifts to whether accruals affect valuation levels, hence, extending the analysis from returns to pricing levels. Furthermore, in *Dechow & Dichev (2002)*, accruals are linked to estimation errors, which lower earnings quality. This analysis shows that markets price the lower quality in earnings.

Through the information risk channel, higher accrual intensity raises investor uncertainty, increases the required return, and depresses current valuation, a mechanism consistent with rational pricing rather than a pricing mistake. Yet, as Sloan shows in his anomaly logic, investors still may misunderstand accruals by overvaluing accrual-based earnings and failing to distinguish persistence. Accordingly, the results in this analysis are consistent with both rational risk pricing and mispricing, however the methodology embedded does not allow to fully separate them, even though the use of Tobin's Q suggests the effect is already incorporated in valuation, which may be more consistent with rational pricing than delayed correction.

Sloan (1996) found an anomaly related to mispricing interpretation, where investors overvalue accruals and correction only happens later in future returns. If mispricing were dominant, the effect should appear in future return corrections, not in current valuation levels. Yet, this study reveals an effect in Tobin’s Q, which represents the current market valuation, not future returns. This implies that the market is already discounting accrual-heavy firms at the time of reporting, a timing that is inconsistent with mispricing and more consistent with rational pricing. If investors follow a rational pricing logic, they recognize information risk in accruals, demand a higher returns immediately, which ultimately depresses current valuation. It is not possible to fully separate the two

explanations with this design, however the location of the effect (valuation levels vs future returns) tilts the evidence toward rational pricing.

Furthermore, the heterogeneity results provide important insights into the underlying mechanism driving the relationship between earnings quality and firm valuation. If mispricing or cognitive bias were observed, the discount should be roughly equal across all firms, and there would be no reason for it to concentrate in specific firm types. Still, results show that growth firms have an estimate effect of -4.254 and value firms of -0.928. This result indicates that growth firms have an estimate effect 4.6 times stronger than value firms, and the difference is statistically validated at the 1% level, implying that this does not represent sampling noise, it is structural. This occurs because growth firms have higher intangible assets, more future-oriented valuation and less verifiable assets, which generates higher information asymmetry. This is exactly where the information risk channel predicts the discount to be the strongest. This concentration is precisely what rational risk pricing predicts and what uniform cognitive bias cannot explain, implying that the market is capable of distinguishing firm types when pricing earnings quality. Broadly speaking, it challenges the view of investors as uniformly naive processors of accounting information.

Beyond the cross-sectional evidence, the time-varying results offer further evidence regarding the type of uncertainty that amplifies the effect of earnings quality on firm valuation. The simple interpretation of these results would be: accrual discount intensifies in any period of economic stress, causing general risk aversion. Yet, the evidence is more specific than that. For example, during COVID (2020-2021), the coefficient on accruals was -0.867 and statistically insignificant, suggesting that the broad pandemic uncertainty may have dominated information signals specific to the firm, compressing the accrual-specific discount. Moreover, in the Tightening cycle (2022-2023), the coefficient was -2.698 and also statistically insignificant (p=0.136), suggesting that monetary tightening, like the pandemic shock, compressed the accrual-specific discount through broad market pressure rather than earnings-reliability signals. Notably, the Stable period (2015-2019) shows the strongest coefficient at -3.774, suggesting that the accrual discount was already present and economically large before any crisis period. The key insight is that the stable period shows the largest and most precisely estimated effect, suggesting that the accrual

discount is driven by information uncertainty, which is specific to earnings reliability, not by general macroeconomic stress. During COVID and tightening periods, broad market risk may have compressed accrual-specific pricing, as all firm valuations were affected uniformly, independently of earnings quality.

In addition, the pricing of accruals may depend on the level of investor sophistication and the information environment. Sophisticated investors display better skills at processing accounting information and distinguishing the economic properties of accruals and cash flows, resulting in less mispricing. On the other hand, less sophisticated environments lead to more misinterpretation and stronger anomalies. Therefore, with more transparency and coverage, analysts are likely to have a better understanding, leading to less uncertainty.

While the results provide strong evidence of a negative relationship, it is important to consider conditions under which this relationship may be weaker or less pronounced. Firms with stronger governance and regulatory power, present better reporting quality and less opportunistic accruals, resulting in a weaker negative effect. Additionally, high transparency environments show more disclosure and less uncertainty, which reduces the discount rate. Lastly, some accruals are driven by real economic activity, not manipulation. These are normal, economically justified accruals, not necessarily low quality.

Therefore, investors should adjust valuation multiples and include earnings quality into analysis, since earnings alone are insufficient and their composition matters. If investors just ignore accruals, then it may lead to overvaluation and misinterpretation of firm performance. On the other hand, the fact that managers influence reported earnings via accruals and the market reacts to perceived quality, produces two implications. One is aggressive accounting methods, which leads to a potential valuation penalty, and the other is transparent reporting, which gives more credibility. Hence, accounting choices are not neutral, they affect market outcomes, thereby theory supports the idea that information quality is priced.

Overall, the findings in this study are robust, consistent and economically meaningful, which indicates that earnings quality matters and is associated with valuation. The next section summarizes the main contributions and implications of the study.

6. Limitations and Identification Challenges

While the empirical results provide consistent evidence of a negative association between accrual intensity and firm valuation, the analysis does not establish a causal relationship, because of observational data and non-existing exogenous variation. Even with fixed effects and controls, it is not possible to fully eliminate reverse causality, since there is the possibility of low valuation firms engaging in more income-increasing accruals to manage earnings upward, making it unclear whether accruals cause lower valuation or lower valuation causes more aggressive accrual use.

The estimated relationship may also be affected by omitted variable bias, in which the omitted factors include firm risk, growth opportunities, intangible assets and governance quality. For instance, firm risk affect valuation and the discount rate and may also affect accounting choices, a high growth leads to both higher Tobin's Q and potentially higher accruals through expanding receivables and revenue recognition, which could bias the coefficient toward zero. With all this omitted drivers present in the empirical model, there is a high potential for bias in the coefficient. And even with the addition of controls to the regression framework, it is impossible to capture all firm heterogeneity.

A further limitation arises from the measurement of earnings quality. Accruals represent a proxy, not a direct measure, as total accruals involve normal accruals, driven by economic activity, discretionary accruals and estimation noise. The variable in this analysis mixes signal with noise, which, consequently, leads to attenuation bias, indicating that the coefficient is biased toward zero. The estimated effect may therefore understate the true economic relationship between earnings quality and firm valuation.

Although the empirical framework incorporates firm and year fixed effects, some limitations remain. Fixed effects do not control for time-varying factors, as they change in strategy, risk and growth dynamics. Fixed effects only controls for time-invariant firm traits. Moreover, in this model, it is assumed a linear specification, which may not

capture nonlinear effects and adds not only model dependence, but also specification. All these factors suggest that the estimated relationship should be interpreted within the context of the chosen empirical specification.

Finally, the interpretation of the results requires careful consideration. Not all accruals signify low quality, they can also reflect real activity, growth or operational needs. This implies, in the empirical model, that the coefficient demonstrates an average effect, not pure “bad accounting”.

Despite these limitations, the consistency and robustness of the findings suggest that accrual intensity remains a meaningful indicator of how financial markets assess earnings quality in firm valuation.

7. Conclusion

This paper has examined whether accrual intensity is associated with firm valuation with a focus on earnings quality, and using metrics like Tobin's Q as valuation measure. The central finding is that accrual intensity is negatively and significantly associated with firm valuation (β = -3.919; -7.9% of mean Tobin's Q), a result that is robust across specifications and consistent with the information risk channel.

Following *Sloan (1996)*, who demonstrates how accrual levels affect future stock returns, using anomaly, mispricing and persistence as conceptual justifications for this relationship, this analysis focuses instead on how accrual intensity is associated with firm valuation, being Tobin's Q used as a valuation proxy. Accordingly, this study shows that the effect of accruals is not only observable in future returns, but it is already reflected in current market valuations. Consequently, accounting quality emerges as a key driver of firm valuation, as it captures the inherent estimation uncertainty embedded in accrual-based earnings, as financial statements are not neutral documents, their quality directly shapes investor perception and valuation multiples.

Moreover, as the market penalizes lower perceived quality in earnings reports, aggressive accounting, which lowers valuation, and credible reporting, which enhances higher trust,

constitute implications for the influence that managers have on reported earnings via accruals. This suggests that accounting choices are strategic decisions with valuation consequences.

These implications extend across different stakeholders. For investors and analysts**,** earnings composition matters, not just the level, thus valuation models should distinguish between cash-flow-based and accrual-based earnings. For auditors and standard setters, findings support that the importance of disclosure requirements around accrual-intensive items (receivables, provisions, revenue recognition) allow for greater transparency and reduces information asymmetry and, ultimately, the associated valuation discount. For managers, an aggressive use of accruals carries a valuation cost. The market penalises perceived lower earnings quality through lower Tobin's Q, meaning accounting choices are strategic decisions with real market consequences. Lastly, for regulators, the stronger effect in growth firms suggests that accounting standards for intangible-heavy sectors deserve particular attention. Where assets are hardest to verify, reporting quality matters the most.

While this study provides evidence of a significant association, future research should focus on identifying causal effects through more robust empirical strategies, in particular with the usage of instrumental variables and natural experiments. Besides, this analysis uses accruals as a proxy to measure earnings quality, which is empirically imperfect. Further research could use different earnings quality measures and alternative accrual definitions, testing the robustness of this analysis's results, or if they are proxy-dependent. Moreover, this study uses the S&P 500 as the full sample, which can be limiting, so subsequent research could use other countries, smaller firms or different time periods, to test generalizability.

These findings highlight that earnings quality is not merely an accounting characteristic, but a key determinant of firm valuation. This analysis demonstrates the importance of distinguishing between accrual-based measures and cash flow-based measures, when assessing true firm performance and value.

AI Use Declaration

Generative AI tools were used as a support tool for language improvement, coding assistance, and feedback. The author remains fully responsible for all analysis, results, interpretations, and conclusions presented in this thesis.

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Appendix

Appendix A: Cross-Sectional Heterogeneity: Full Results

Table A1 — Cross-Sectional Heterogeneity: Full Results

This appendix presents the complete heterogeneity analysis including Panel C (Contribution to Literature) and Panel D (Model Diagnostics), together with the Mechanism & Theoretical Link column. The main text (Section 4.4) presents Panels A and B only.

Variable		(1) Full Sample	(2) Growth Firms [Low B/M]	(3) Value Firms [High B/M]	(2)−(3) Diff.	z-stat [p-val]	Mechanism & Theoretical Link
Identification: Book-to-Market annual median split		*All firm-years*	*B/M < median (mkt > book)*	*B/M ≥ median (mkt ≈ book)*	*Paternoster et al.(1998)*	*$z=(\beta_1-\beta_2)/\sqrt{(SE_1^2+SE_2^2)}$*	*Section 2.5 - Uncertainty Channel*
Panel A: Regression Coefficients - Effect of Accrual Intensity on Firm Valuation (Tobin's Q)							
Accruals (scaled)	*Coefficient β*	**-3.919**	**-4.254**	**-0.928**	**-3.326**	**z=−2.835**	Consistent with the information uncertainty channel (Sec. 2.5): accrual intensity signals estimation risk, triggering investor discounting, amplified in growth firms where assets are harder to verify (Francis et al., 2005; Lambert et al., 2007).
	Std. Error	(0.710)	(1.155)	(0.207)	(1.173)	—	
	t-Statistic	-5.578	-3.682	-4.483	—	—	
	p-Value	<0.001	0.0002	<0.001	—	—	
Coeff. Difference Test	*H_0: β(Growth)=β(Value)*	—	—	—	**Δ=−3.326**	**z=−2.835 p=0.005**	H_0 rejected at 1% level. Difference is statistically validated, not a numerical artefact.
Panel B: Economic Significance - Translating Coefficients into Valuation Impact							
1σ Effect on Tobin's Q	*β × σ(Accruals)*	**−0.188**	**−0.204**	**−0.044**	**−0.160**	—	A 1 s.d. increase in accruals reduces Tobin's Q by the stated amount. Gap reflects differential sensitivity to information uncertainty - Lambert et al. (2007).
Mean Tobin's Q	*In-subsample mean*	2.377	3.686	1.071	—	—	Growth firms carry higher average valuations, amplifying the absolute impact of discounting.
Relative Effect	*% of mean Tobin's Q*	**−7.9%**	**−5.5%**	**−4.1%**	**−1.4 pp**	—	Relative discount is larger for growth firms - supports the conditional pricing hypothesis (Section 2.5).

Panel C: Contribution to Literature - What This Result Adds			
Study / Source	**Key Finding**	**Implication**	**Contribution of This Paper**
Prior literature (Sloan, 1996)	Accruals predict future stock returns	Mispricing or risk - mechanism unresolved	**Baseline; we shift from return predictability to valuation levels (Tobin's Q)**
This study - baseline (Table 3)	Accruals reduce Tobin's Q (β= -3.919)	Effect already priced, consistent with rational pricing	**Establishes the valuation channel; pricing not delayed to future returns**
This study - heterogeneity (Table A1)	Effect is conditional on information environment (B/M)	Stronger for growth firms, rational risk pricing, not uniform cognitive bias	**Identifies the mechanism: estimation uncertainty drives discounting selectively**

Panel D: Model Diagnostics					
R^2	0.860	0.822	0.906	—	—
Observations	4,355	2,174	2,181	—	—
Unique Firms	499	333	337	—	—
Firm Fixed Effects	Yes	Yes	Yes	—	—
Year Fixed Effects	Yes	Yes	Yes	—	—
Clustered SE	Firm level	Firm level	Firm level	—	—

Notes: OLS panel regressions with firm and year fixed effects. Controls: ROA, Leverage, ln(Total Assets), Sales Intensity. SE clustered at firm level. Sample split by annual Book-to-Market median. Coefficient difference tested using Paternoster et al. (1998) z-test. p<0.01, p<0.05, p<0.10.

Table A2 – Extended Robustness Checks: Full Results (Appendix)

This appendix presents the complete results for the three extended robustness checks reported in Section 4.8, including all control variable coefficients and model diagnostics. Model 1 replicates the baseline (Table 3) for comparison. Model 2 uses GICS sector and year fixed effects in place of firm fixed effects. Model 3 uses an alternative Tobin's Q definition: (Market Value + Total Assets − Book Equity) / Total Assets. Model 4 re-winsorises all variables at the 5th/95th percentile instead of the 1st/99th percentile used in the baseline.

Variable	(1) Baseline	(2) Industry FE	(3) Alt. Tobin's Q	(4) Winsor 5/95
Accruals (scaled)	**−3.919**	**−10.524**	**−4.049**	**−3.145**
	(0.710)	*(1.504)*	*(0.700)*	*(0.565)*
ROA	6.899	14.867	6.842	6.933
	(1.408)	*(0.800)*	*(0.835)*	*(0.772)*
Leverage	0.844	0.547	0.720	0.334
	(0.560)	*(0.370)*	*(0.462)*	*(0.336)*
Firm Size (ln assets)	−0.308	−0.544	−0.305	−0.392
	(0.268)	*(0.070)*	*(0.140)*	*(0.095)*
Sales Intensity	0.750	−0.259	0.861	0.481
	(0.285)	*(0.100)*	*(0.207)*	*(0.191)*
Firm Fixed Effects	**Yes**	No	**Yes**	**Yes**
Industry Fixed Effects	No	**Yes**	No	No
Year Fixed Effects	**Yes**	**Yes**	**Yes**	**Yes**

Observations	**4,355**	**4,355**	**4,355**	**4,355**
Unique Firms	**499**	**499**	**499**	**499**
R^2	**0.860**	**0.529**	**0.856**	**0.902**

Notes: OLS panel regressions. Dep. Var.: Tobin's Q (except Model 3: (Market Value + Total Assets − Book Equity) / Total Assets). Model 1 replicates Table 3. Model 2 replaces firm FE with GICS sector and year FE. Model 3 uses alternative Q construction with firm and year FE. Model 4 re-winsorises all variables at the 5th/95th percentile. Controls: ROA, Leverage, ln(Total Assets), Sales Intensity throughout. SE clustered at firm level. p<0.01, p<0.05, p<0.10.