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The Effect of Product Market Competition on Conditional and Unconditional Conservative Accounting Procedures

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Abstract

Through a cross-sectional analysis, this paper explores the influence of Product Market Competition (PMC) structure on conditional and unconditional accounting conservatism. The study utilizes financial data from the Tehran Stock Exchange from 2012 to 2019. Conditional and unconditional conservatism are measured using Basu's (1997) and Beaver and Ryan's (2000) models, respectively. Additionally, the Herfindahl–Hirschman index (HHI) is employed to introduce exogenous variations in PMC, allowing an assessment of how increased competition in market valuation impacts accounting conservatism in manufacturing companies. Despite previous findings by Dhaliwal et al. (2014) suggesting a positive association between intense PMC and conditional conservatism, the results of this study demonstrate that PMC does not affect the implementation of conditional conservatism. Furthermore, this investigation reveals that PMC has no bearing on applying unconditional conservatism in financial reporting. This aligns with the theory of unconditional conservatism, indicating that companies employ it based on their financial policies. The outcomes of this research contribute to the existing literature on conservatism.

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1. Introduction

This paper delves into the influence of Product Market Competition (PMC) on conditional and unconditional accounting conservatism, specifically focusing on asymmetric timely loss recognition. This concept involves recognizing economic losses more promptly than gains in earnings. Several perspectives underpin the rationale for this study. One perspective posits that PMC has a favorable impact on conditional conservatism. This suggests that firms may opt for timely loss recognition to enhance their competitive position in the face of potential new entrants and existing competitors. In industries with fewer competitors, timely loss recognition can offer advantages, deterring new entrants. Similarly, firms facing substantial competition from existing rivals in their industry may opt for accelerated loss recognition to discourage overproduction by these rivals or encourage them to reduce production levels (Clinch and Verrecchia, 1997).

An alternative perspective posits that competition can mitigate conflicts of interest between managers and shareholders. According to this viewpoint, competing firms serve as a benchmark, facilitating a more robust evaluation of managerial performance. Intense competition also curtails managerial slack, compelling managers to enhance overall firm efficiency. In line with the implications of this perspective, Product Market Competition (PMC) diminishes managerial slack, enhances the monitoring process, and bolsters the equilibrium between managers' and shareholders' interests. As a result, managers are more inclined to refrain from disclosing losses to avert potential managerial dismissals during their tenure. This reduced the need for conditional conservatism as a monitoring mechanism. Furthermore, conservatism fosters timely recognition of losses, providing both shareholders and managers with insights into the causes of losses. Cumulatively, these investigations reduce the likelihood of managerial dismissal or turnover and eliminate projects with a negative net present value.

Additional studies have contributed further arguments regarding the relationship between competition and conservatism. Monopolistic firms, as opposed to those in competitive industries, face heightened political costs, as Watts and Zimmerman (1986) documented. Consequently, dominant firms in less competitive sectors have a stronger incentive to implement more timely loss recognition, effectively sidestepping regulatory scrutiny. Moreover, the empirical association between competition and conditional conservatism can be influenced by monopoly rents, giving rise to errors-in-variables issues in assessments of conditional conservatism (Ball and Shiva Kumar, 2006; Roychowdhury and Watts, 2007). One of the noteworthy advantages of embracing conditional conservatism lies in the reduction of competitive pressures and threats. In contrast, a prominent drawback of this policy is the potential decrease in investors' and shareholders' future performance expectations for firms, leading to a corresponding decline in the market value of the firm's equities.

This paper aligns with the existing literature to construct the provided measures. The central measure of conditional accounting conservatism relies on Basu's (1997) model, which quantifies the asymmetric timeliness in recognizing economic losses in accounting income, emphasizing quicker recognition of economic losses relative to economic gains in the current-period reported earnings. In addition, the measurement of unconditional conservatism is determined by the market-to-book ratio, following Beaver and Ryan's (2000) approach. Lastly, the Herfindahl–Hirschman index (HHI) is employed as a fitted proxy for PMC.

The paper is closely related to three recent studies investigating the multifaceted aspects of PMC and its effects on accounting and information environments. Specifically, Dhaliwal et al. (2014) and Hui et al. (2012) delve into the influence of a firm's significant customers and suppliers on the demand for conditional conservatism. Our comprehensive consideration of a firm's industry competitiveness sets our study apart. Although our PMC measurement index is akin to Dhaliwal et al. (2014), our research distinguishes itself in its broader scope.

Concerning the objective of wealth maximization for shareholders, an enduring question revolves around whether shareholder wealth is enhanced by adopting a higher degree of conservatism (which reduces competitive pressures and threats) or diminished (due to elevated capital market expectations regarding the entity's future performance). Moreover, the level of conservatism is influenced by the extent to which competitive pressures and threats increase or decrease.

As an emerging market, the escalating competition within the Iranian business environment prompts an exploration of the expected implications of competition within this particular context. It's worth noting that the charter of the Iranian National Audit Organization outlines accounting standard setting as one of its core objectives. Additionally, considering the primary goals of the IACPA establishment, this organization is mandated to support the government in the oversight of financial activities in manufacturing, commercial, and service entities while also ensuring the reliability of these entities' financial statements to safeguard the interests of the general public, capital owners, and other stakeholders. Hence, this demonstrates a keen interest in addressing topics related to establishing compatible standards that align with these objectives.

Most previous research has examined the relationship between firms' value and conditional and unconditional accounting conservatism. In the domestic literature and developed markets, notable works like Asadi and Bayat (2015) have explored these aspects. In contrast, studies in developed markets, such as Dhaliwal et al. (2014), have predominantly concentrated on the association between Product Market Competition (PMC) and conditional conservatism. However, the current study delves into the effects of various competition aspects on both types of accounting conservatism. The remainder of this paper is structured as follows: Section 2 provides an overview of the relevant literature and outlines the paper's hypotheses. Section 3 elaborates on the data and the empirical methodologies employed. Section 4 presents our findings, Section 5 provides a detailed discussion of the results, and Section 6 concludes and summarizes the paper.

2. Theoretical Framework and Hypothesis Development

Early research on Product Market Competition (PMC) primarily emphasized its impact on prices and economic efficiency, as seen in the seminal contributions of scholars such as Chamberlain (1933), Robinson (1933), Fellner (1949), Alchian (1950), and Stigler (1958). In recent years, researchers have extended their focus to examine how competition influences corporate investment decisions (Indrarini Laksmana and Ya-wen Yang, 2015) and its impact on R&D investment and stock returns (Gu, 2016). This study delves into the intricate relationship between PMC and a firm's choice regarding accounting conservatism, aiming to provide insights into the multiple channels through which PMC can affect both conditional and unconditional conservatism. Traditionally, accounting conservatism has been defined as the practice of refraining from recognizing gains until all losses have been acknowledged. This foundational concept has its roots in Bliss's work from 1924. Accounting conservatism can be categorized into two primary types. The first type, often referred to as "exposure conservatism," is also known as news conservatism, conditional conservatism, and asymmetric timely recognition of losses and gains. This form of conservatism significantly impacts the income statement. The second type of conservatism is labeled "ex-ante conservatism." It operates independently of external news and is commonly referred to as unconditional conservatism. Exemplified by the application of specific accounting standards, this type of conservatism has a profound impact on the balance sheet and serves to reduce income regardless of current economic events. Accounting conservatism is a multifaceted concept, subject to various interpretations and viewpoints.

There are several views of accounting conservatism.

The primary definition associated with accounting conservatism emphasizes the significance of implementing conservative practices in financial reporting. Additionally, it underscores the advantages of this approach for businesses. To elucidate this definition, accounting scholars offer the following perspectives:

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1. The Contractual view of conservatism pertains to contracts between firms and managers and between firms and external stakeholders.
2. The litigation view highlights the objective of minimizing shareholders' obligations.
3. The Consistency concept is relevant to the application of conservatism.
4. The interplay between reported earnings and taxation (tax concept of accounting conservatism).
5. The balance between reported earnings and potential costs (in the context of political cost and accounting conservatism).
6. The connection between PMC and reported information (product market competition view).

Watts (2003) suggests that the foundation of conservative reporting is rooted in economic considerations, which encompass the first four views of conservative reporting discussed earlier.

Several studies have delved into the elements of accounting conservatism in financial reporting. Beaver and Ryan (2005) offer models that measure the interplay between the two types of conservatism, conditional and unconditional conservatism, alongside other factors, investigating how they influence the asymmetric response of earnings to positive and negative share returns, shaping conservatism. Gassen et al. (2006) assert that two attributes of earnings, income smoothing and conditional conservatism, are fundamentally distinct, as they yield different distributions of results. Specifically, an increased emphasis on funding amplifies conditional conservatism, while a heightened focus on dividends leads to income smoothing. Moreover, Setayesh et al. (2013) report no statistically significant relationship between the negative coefficient of accumulated accruals (non-operational) and forecasted profit across various industries.

In alternative perspectives, Ball et al. (2000) propose that the legal framework of countries exerts an influence on the degree of conservatism in accounting reports, with common-law accounting systems demonstrating significantly higher conservatism compared to code-law accounting systems. Ahmed et al. (2002) contend that companies grappling with more pronounced conflicts regarding dividend policies tend to employ a higher degree of conservative accounting in their financial reports. In a subsequent study (2007), Ahmed discovered that governance mechanisms also impact the utilization of conservative accounting procedures.

Alternative perspectives include Porter (1980), who presents a market-centered approach where firms formulate strategies while considering competitive forces that influence their respective industries. In contrast to Hui et al. (2012), who examine the influence of a firm's major customers and suppliers on the demand for conditional conservatism, our study distinctively focuses on the competitiveness within a firm's industry. When considering prior research, we can categorize the factors influencing accounting conservatism into two main inquiries: first, market-level factors that encompass legal systems and the institutional environment, and second, firm-level factors, such as the firm's own demand for conservative reporting (unconditional conservatism). Consequently, it becomes evident that studies like Porter (1980), Ball et al. (2000), Ball et al. (2003), Guay and Verrecchia (2007), Lafond and Watts (2008, 2003), and Hui et al. (2012) primarily address the impact of market-level factors on accounting conservatism. Conversely, research by Ahmed et al. (2002), Ahmed (2007), and Beekes et al. (2004) focuses on the influence of firm-level factors on accounting conservatism.

The recent inquiry into accounting conservatism delves into the following empirical discoveries:

Empirical data from Cheng and Kung (2016) suggests that government-mandated corporate social

responsibility policies might effectively promote conservative financial reporting. Kim and Zhang (2015) discovered that conditional conservatism is linked to a reduced likelihood of future stock price crashes for firms. Within domestic literature, Asadi and Bayat (2015) scrutinized the correlation between conditional and unconditional conservatism in financial reporting and a firm's value. The empirical evidence implies that conditional and unconditional conservatism is positively associated with a firm's value. In other words, the more conservative practices managers employ, the higher the value of their companies. Furthermore, Mashayekh and Kazemi (2015) assert that the quality of accounting information, particularly in terms of conservatism, has remained relatively unchanged in the period both before and after the development of national standards. Furthermore, Etemadi and Montazeri (2013) propose that, in both static and dynamic analyses, there exists a positive association between PMC and capital structure. This suggests that companies operating in competitive environments tend to carry more debt in their capital structures.

The definition of a market encompasses a regular gathering of people to purchase and sell provisions, livestock, and other commodities. For instance, international stock markets deal with international telecommunications, so they do not require a physical residence. A competitive market is one where a multitude of informed stock buyers and sellers engage in transactions without any party exerting influence over share prices. In a competitive market, firms must choose efficient methods to achieve higher quality and lower prices. This ensures economic resources are used efficiently, resulting in gains for all economic sectors. Cupian and Muhamad Abduh (2017) affirm that the Islamic banking industry in Indonesia operates with a higher degree of market power, leading to a less competitive market. Islamic banks earn revenues in a monopolistic competition environment over the tested period. Their study's results also suggest a negative but insignificant relationship between concentration and competition, indicating that, in recent years, the market power of leading firms in the Indonesian Islamic banking industry has diminished. Gu (2016) observes that a standard real options model predicts a strong positive interaction effect between research and development (R&D) investment and PMC (Profit Margin Changes). He also observes that R&D-intensive firms tend to exhibit higher risk and earn higher expected returns than R&D-weak firms, especially within competitive industries. Louati and Boujelbene (2015) assert that heightened competition in the Islamic banking sector enhances overall banking stability.

One of the most justifiable aspects of applying accounting conservatism is PMC (Profit Margin Changes). Financial reporting must adhere to Generally Accepted Accounting Principles (GAAP) and accounting standards. Furthermore, disclosing some information is voluntary; as a result, financial reporters may include creative or conservative information selected from among accepted accounting procedures. Financial information providers can choose between these procedures to respond to different situations, such as intense competition or financing intentions. This paper addresses how variations in PMC affect the application of accounting procedures, whether conservative or creative. Four reasons outlined below suggest that PMC positively influences accounting conservatism. Dhaliwal et al. (2014) discovered that intense competition in the market enhances the information environment for all parties, including beneficiaries and firms. Additionally, intense competition exposes firms to the risk of liquidation and removal from competitive markets.

Hence, firms endeavor to establish effective contracts associated with a demand for accounting conservatism (Watts 2003). Ahmed et al. (2002) demonstrate that an increase in debt results in a greater demand for accounting conservatism, as it reduces capital expenditures arising from liabilities. Consequently, firms in competitive industries are more inclined to opt for conservative procedures. In highly competitive environments, if management decisions do not align with shareholders' interests, the firm faces the risk of being removed from the market (Ball and Shiva Kumar, 2005). Therefore, applying accounting conservatism serves to deter managers from investing in projects with

negative net present value. This timely recognition of losses keeps shareholders informed about the suitability of their invested projects. Furthermore, accounting conservatism is a deterrent to the premature recognition of positive news. These constraints prevent managers from overestimating a firm's profit and assets, reducing potential issues in competitive markets. Lastly, another important aspect suggests that firms operating in monopoly markets tend to adopt a higher level of conservatism due to political and regulatory costs.

Companies aim to escape competition from both existing rivals and the potential threat posed by new entrants in their industry. To achieve this, the timely disclosure of unfavorable news prompts uninformed competitors to scale back their production. Consequently, the revelation and acknowledgement of bad news create a competitive disadvantage for newcomers. In simpler terms, unanticipated bad news is viewed by unaware competitors as a sign of reduced future demand.

Competition typically manifests in two distinct forms: the first involves competition to deter potential newcomers from entering the market, where listed firms in the industry collaborate to block potential entrants. The second form revolves around competition among the existing industry players, where companies within the same sector vie against each other. Companies resort to conservative accounting practices to mitigate competitive threats regardless of the form.

Darrough and Stoughton (1990), Feltham and Xie (1992), and Evans and Sridhar (2002) propose that the information disclosed in financial statements is accessible to all users, including competitors. This information undergoes evaluation by the market and significantly influences stock prices, future expectations regarding a company's performance, product pricing, and sales volume. When companies emphasize positive news and attempt to mitigate negative news, it substantially impacts future expectations. As a result, stock prices increase, satisfying stakeholders. However, this strategy can lead to the entry of new competitors into the industry. Conversely, if companies downplay good news and emphasize bad news, stock prices decrease, reducing the threat of new competitors entering the market. When new competitors enter, the industry may need to allocate some of its sales volume to accommodate them. Consequently, firms must strike a balance between these potential threats and benefits. Thus, the question arises: should companies maximize the wealth of stakeholders by employing creative accounting (resulting in an increase in stock price and the threat of new competitor entry) or conservative accounting (leading to a decrease in stock price and a reduced threat of new competitors entering the market)?

In addressing this question, Darrough and Stoughton (1990) present an incomplete information model that suggests the selective disclosure of good news while emphasizing the necessity to reveal certain bad news. This approach aligns with the principles of accounting conservatism, which mandate the presentation of both favorable and unfavorable information. However, accounting standards tend to emphasize recognizing good news more than bad news.

Furthermore, Darrough (1993) demonstrates that companies are more inclined to report adverse news related to primary costs in competitive markets where product substitutability is higher. When firms disclose elevated primary costs in highly competitive environments, the market adjusts product prices and sales volume. On the one hand, this encourages firms in the industry to increase prices, while on the other, it convinces consumers to accept higher prices, ultimately leading to increased shareholder satisfaction. Additionally, all publicly listed companies in a given market aim to overstate primary costs or reduce sales prices. This strategic choice enables them to maximize shareholder profits, resulting in an overstatement of primary costs and reduced sales prices. Consequently, the ratio of sales to gross profit or primary cost decreases. It is also anticipated that in competitive markets or those with a higher degree of product substitutability, the ratio of sales to primary cost (gross income) will be lower than in other markets.

In addition to these two aspects, the political costs argument suggests that monopolistic firms opt

for more prompt recognition of losses over earnings to evade the risks and penalties associated with regulatory scrutiny. In essence, in industries with less competition, companies are more inclined to employ conservative accounting practices in their financial reports. Furthermore, the political costs perspective implies that leaders in monopoly industries are more likely to implement higher conditional conservatism, as they are at greater risk of facing regulatory scrutiny. Lara et al. (2009) have noted an increase in conditional conservatism following regulatory changes. Dhaliwal et al. (2014) propose that discouraging new and existing competitors predicts a positive impact of Profit Margin Changes (PMC) alongside the governance and political cost considerations that indicate a negative relationship. Moreover, distinguishing between industry leaders and followers allows these alternative causal explanations to be differentiated. It is expected that as the level of business transactions increases in developing countries, Profit Margin Changes (PMC) will rise rapidly.

Several investigations have explored the relationship between Profit Margin Changes (PMC) and the level of accounting conservatism adoption. Muhammad et al. (2017) propose that intense competition and non-price competition contribute to increased conservatism. They also advocate a positive correlation between competition from existing or potential rivals and adopting accounting conservatism. Mahdavi and Momtazian (2014) point out that there is generally a significant relationship between PMC indicators and two criteria for unconditional accounting conservatism: the ratio of total accruals before depreciation divided by average total assets and the ratio of book value divided by the market value of firms' net assets. This suggests that as competition increases in various industries, companies tend to apply conservatism in financial reporting in response to competitive pressures, reducing profit, regardless of current economic conditions. Iatridis (2011) finds that, due to high agency concerns in small firms, accounting conservatism is more prevalent compared to larger companies. Therefore, intense competition is associated with a higher degree of conservatism in financial reports, particularly in small firms. Furthermore, Folsom (2009) discovers that the level and intensity of market competition influence the adoption of conservative reporting practices in financial statements. He concludes that firms are more inclined to adopt accounting conservatism in highly competitive environments. Firms facing significant competition from existing rivals within their own industry tend to recognize losses more swiftly. This is done to deter over-production by these firms or encourage under-production (Clinch and Verrecchia 1997). Conversely, other arguments delve into the relationship between competition and conditional conservatism. In monopolistic settings, firms encounter more substantial political costs compared to those in competitive industries (Watts and Zimmerman 1986). Consequently, there is a greater incentive for larger firms in less competitive industries to employ more conservative practices in order to avoid regulatory scrutiny. Zimmerman (1983) suggests that larger companies apply accounting conservatism to reduce political costs, implying a negative association between Profit Margin Changes (PMC) and accounting conservatism. Hagerman and Zmijewski (1979) also propose that firms in monopoly markets tend to adopt a more conservative approach in their financial reporting. In domestic research, Kordlor and Shahriary (2010) similarly find a negative association between PMC and accounting conservatism.

In this current study, focusing on another facet of conservatism, we examine the correlation between initial loan sales in the secondary loan market and the accounting conservatism of borrowing firms (Deng et al. 2017). The findings reveal a significant reduction in accounting conservatism among borrowing firms following the initial loan sales. They demonstrate that this decline in borrower conservatism is more pronounced for firms borrowing from lenders with lower monitoring incentives and firms with a reduced motivation to apply conservatism. Contrastingly, Aven (2016) contends that accounting conservatism should not be employed as a means to assess risk. In another study, Lu and Trabelsi (2013) investigate information asymmetry and accounting conservatism in the context of IFRS adoption. Their results indicate that the level of accounting conservatism decreases

after the mandatory adoption of IFRS. However, IFRS adoption is likely to diminish the relationship between information asymmetry and accounting conservatism. LaFond and Watts (2008) argue that information asymmetry between insiders of a firm and outside equity investors gives rise to conservatism in financial statements. This, in turn, reduces a manager's incentives and capacity to manipulate accounting figures, subsequently mitigating information asymmetry and the associated deadweight losses.

Therefore, examining the under-influenced elements, such as conservatism is justified. For this purpose, the following hypotheses are presented in order to explore a deeper understanding of PMC's effect on conditional and unconditional accounting conservatism:

H₁: PMC has an impact on conditional conservatism.
H₂: PMC has an impact on unconditional conservatism.

3. Research Methodology

3.1. Sample selection

Given the consistent growth in business trade on the Tehran Stock Exchange in recent years, this study utilizes financial and market data for listed companies as presented in Table 1. Only manufacturing firms are included in the sample to ensure accuracy in measuring concentration within an industry's Profit Margin Changes (PMC). Additionally, industries with fewer than three firm-years are excluded from the primary analyses to mitigate potential bias arising from industry decline.

Table 1. List of industries and firm years

Industries	Firm years							
Automobiles and Parts	27	27	27	27	27	27	26	26
Nonmetal products	8	8	8	8	8	8	8	8
Cement, lime, plaster products	17	17	17	17	17	17	14	17
Manufacture of basic metals	17	17	17	17	17	17	16	15
Sugar products	3	3	3	3	3	3	3	3
Ceramic Tile products	10	10	10	10	10	10	9	8
Rubber and plastic products	9	9	9	9	9	9	9	9
Electric equipment	5	5	5	5	5	5	5	5
Equipment and machinery	3	3	3	3	3	3	3	3
Chemical products	17	17	17	17	17	17	15	15
Food except for sugar	5	5	5	5	5	5	5	5
Pharmaceutical	24	24	24	24	24	24	22	22
Total	145	145	145	145	145	145	135	136

3.2 Measure of conditional conservatism

To measure conditional conservatism, we begin with Basu's (1997) model, which is:

$NI_t = \beta0 + \beta1\ RET_t * \beta2\ NEG_t + \beta3\ RET_t * NEG_t + €$ (1)

In Model (1), the dependent variable, NI (reported earnings, including income after extraordinary items), is normalized by the market value of equity at the beginning of the fiscal year. The variable RET signifies the buy-and-hold return over the fiscal year and verifies publicly available information

about the firm's performance during the current year, including information known to the market before the annual earnings announcement (Ball et al. 2000, Basu 1997). The explanatory variable NEG is an indicator variable with a value of 1 if RET is negative and 0 otherwise. Negative returns (RET < 0) are utilized as a proxy for bad news, while positive returns (RET >= 0) represent good news. The concept of asymmetric timeliness in recognizing bad news implies a higher earnings sensitivity to bad news. This means that the slope coefficient related to stock returns (variable RET) is expected to be more pronounced for negative returns (often referred to as "bad news") compared to positive returns (often referred to as "good news"). The difference in the slope coefficients for variable RET, essentially the variance in the sensitivity of earnings to negative and positive returns, is captured by the slope coefficient denoted as b3 in the interaction variable RET*NEG. In summary, the variable RET, which denotes the buy-and-hold return throughout the fiscal year, distinguishes between good and bad news in the context of this analysis.

We extend Basu's (1997) model to examine the relationship between PMC and conditional conservatism empirically. The Model (2) incorporates the test variable along with other firm characteristics found in prior research to influence the extent of a firm's conditional conservatism:

(2)

$$
\begin{aligned}
NI_t = {} & \beta_{0+} \beta_1 PMC_{t-1} + \beta_2 SIZE_{t-1} + \beta_3 BM_{t-1} + \beta_4 LEV_{t-1} + \beta_5 ROA_{t-1} + \beta_6 BIG\_N_t + \beta_7 SH_{t-1} \\
& + \beta_8 NEG_t + \beta_9 NEG_t{*}PMC_{t-1} + \beta_{10} NEG{*}SIZE_{t-1} + \beta_{11} NEG_t{*}BM_{t-1} + \beta_{12} NEG_t{*}LEV_{t-1} \\
& + \beta_{13} NEG_t{*}ROA_{t-1} + \beta_{14} NEG_t{*}\, BIG\_N_t + \beta_{15} NEG_t{*}SH_{t-1} + \beta_{16} RET_t \\
& + \beta_{17} RET_t{*}PMC_{t-1} + \beta_{18} RET_t{*}SIZE_{t-1} + \beta_{19} RET_t{*}BM_{t-1} + \beta_{20} RET_t{*}LEV_{t-1} \\
& + \beta_{21} RET_t{*}ROA_{t-1} + \beta_{22} RET_t{*}BIG\_N_t + \beta_{23} RET_t{*}SH_{t-1} + \beta_{24} NEG_t{*}RET_t \\
& + \beta_{25} NEG_t{*}RET_t{*}PMC_{t-1} + \beta_{26} NEG_t{*}RET_t{*}SIZE_{t-1} + \beta_{27} NEG_t{*}RET_t{*}BM_{t-1} \\
& + \beta_{28} NEG_t{*}RET_t{*}LEV_{t-1} + \beta_{29} NEG_t{*}RET_t{*}ROA_{t-1} + \beta_{31} NEG_t{*}RET_t{*}\, BIG\_N_t \\
& + \beta_{31} NEG_t{*}RET_t{*}SH_{t-1} - fixed\ effects + €
\end{aligned}
$$

The additional variables specified in Model (2) are proxies for conservatism demand (Khan and Watts 2009) and are defined in Appendix 1.

The significance tests for this estimation rely on robust t-statistics, which have been adjusted to account for residual correlation arising from the pooling of cross-sectional observations across time. In Model (2), the coefficient β16 signifies the timeliness of earnings in response to positive news, while the coefficient β25 quantifies the additional timeliness of earnings when it comes to recognizing negative news. We do not anticipate a specific direction for the coefficient related to PMC due to conflicting arguments. On one hand, increased competition can lead to reduced profit margins, thereby negatively impacting earnings. On the other hand, if PMC enhances governance, it should result in increased profitability. To provide a comprehensive analysis, we also examine the coefficients β17 for RETPMC and β25 for RETNEG*PMC.

The coefficient β17 gauges the influence of PMC on the pace at which earnings reflect positive news. Similarly, the coefficient β25 quantifies the impact of PMC on the added swiftness of earnings in acknowledging negative news. Suppose PMC encourages firms to enhance their application of accounting conservatism. In that case, it is anticipated that companies in competitive industries will enforce stricter verification when recognizing gains and promote asymmetrically timelier loss recognition. From an empirical standpoint, stricter verification of positive news would lead to an anticipated negative value for β15, while asymmetrically timelier loss recognition predicts a positive value for β25. Conversely, if PMC diminishes accounting conservatism, then it is expected that β17 and β25 will exhibit positive and negative values, respectively.

3.3 Measure of unconditional conservatism

Unconditional conservatism is measured by the market-to-book ratio (Beaver and Ryan 2000):

$$\frac{EB}{EM} \quad (3)$$

The ratio is calculated by dividing the market value (EB) by the book value (EM) of shareholders' equity. Observations with negative values of the market-to-book ratio are excluded. The market-to-book ratio directly reflects the discrepancy between net assets and economic values, offering a straightforward method to gauge cumulative conservatism. We build upon the Beaver and Ryan (2000) model to empirically investigate the connection between PMC and unconditional conservatism.

Model (4) includes the test variable, along with other firm characteristics identified in prior research as factors influencing the extent of a firm's unconditional conservatism:

$$NNI_t = \beta_{0+} \beta_1 PMC_{t-1} + \beta_2 SIZE_{t-1} + \beta_4 LEV_{t-1} + \beta_5 ROA_{t-1} + \beta_6 BIG\_N + \beta_7 SH_{t-1} + € \quad (4)$$

3.4 Measure of PMC

The most commonly used measure of the degree of PMC in the industrial organization literature is the Herfindahl–Hirschman index (HHI), which is defined as follows:

$$H_j = \sum_{i=1}^{I} s_{ij}^2$$

Where S_{ij} is the market share of firm i in industry j, for each firm, the market share is computed based on its net sales relative to the total net sales of the industry to which it belongs. The firm market shares are then squared and summed for each industry. The above calculations are carried out for each year and each industry based on the Tehran stock exchange. Lower HHI values imply that the market is shared among many competing firms, while higher values imply that the market share is concentrated in the hands of a few large firms. For ease of exposition, a new variable PMC is created by multiplying H_j by a negative one.

$$PMC_j = (-1) * H_j$$

Higher values of PMC reflect more intense PMC, with each firm having a small product market share.

4. Empirical results

4.1 Descriptive statistics

Table 2 provides summary statistics for selected variables utilized in the empirical analysis. In this table, we have omitted the presentation of variables resulting from the multiplication of other variables. According to Table 2, the average firm in the sample belongs to an industry with a mean PMC value of 8.147. NI's dependent variable exhibits left-skewness, suggesting fewer firms report large accounting losses. The explanatory variable, RET, demonstrates a right-skewed distribution, with a mean value of 1.514, exceeding the median of 1.003. This indicates that stockholders have limited liability and cannot incur losses beyond their investment. The mean book-to-market ratio is 1.942, greater than its median of 1.756. The mean and median values for the size of the sample firms are 13.737 and 13.600, respectively. The variable SH has a mean value of 0.429, representing the sample's average presence of institutional investors. The LEV and ROA ratios, at 0.664 and 0.098, respectively, are higher than their respective medians of 0.651 and 0.090. Finally, the national

auditing organization audits about 27% of the sample firms.

Table 2. The descriptive Statistics

variable	Max	Min	Mean	1st Qu.	3rd Qu.	Median
PMC	-0.046	-0.559	-0.224	-0.295	-0.082	-0.201
NI	25.916	-15.791	8.147	9.226	12.218	11.044
RET	71.087	-72.376	1.514	-1.140	3.649	1.003
BM	113.391	-152.922	1.942	0.975	2.981	1.756
SIZE	19.009	10.505	13.737	12.840	14.450	13.600
SH	0.991	0.002	0.429	0.140	0.360	0.742
LEV	3.065	0.008	0.664	0.522	0.773	0.651
ROA	0.622	-0.718	0.098	0.034	0.165	0.090
BIG_N	1.000	0.000	0.267	1.000	1.000	1.000

4.2.1 Spearman and pearson correlations

Table 3 presents the yearly average of Spearman and Pearson correlations for the sample. The PMC measure demonstrates a positive correlation with NI and a negative correlation with NEG, suggesting that firms in highly competitive industries tend to achieve higher profit levels and experience less negative stock returns. Additionally, the negative correlation between PMC and SIZE indicates that competitive industries typically consist of smaller firms in contrast to more concentrated industries.

A positive correlation between PMC and BM implies that monopoly rents are reflected in the book value of equity. PMC and LEV exhibit a negative correlation, which is not surprising as intense PMC, by constricting profit margins, can limit a firm's debt-carrying capacity. While BIG_N does not show a significant correlation with PMC in Pearson's correlation, it does exhibit a positive correlation with PMC in Spearman's correlation, suggesting that firms in highly competitive markets are more inclined to engage the national auditing organization.

Furthermore, PMC and NI are significantly associated with SH and ROA, indicating that institutional investors tend to invest in profitable firms within highly competitive industries, thereby experiencing higher returns on assets. In line with Dhaliwal et al. (2014) and Ball and Brown (1968), NI is significantly related to RET and NEG, highlighting that earnings convey certain information reflected in returns. Moreover, NI displays positive correlations with SIZE and BIG_N, suggesting that, as expected, larger firms tend to report greater earnings and are more likely to be audited by the national auditing organization.

Spearman (Pearson) correlations are below (above) the diagonal. All correlations are reported as the average of annual cross-sectional correlations estimated in each year 2009–2016. Two-tailed p-values are based on averages and standard deviations of annual correlation coefficients. All variables are defined in Appendix 1.

4.2.2. Primary results of PMC and conditional conservatism

Table 4 summarises the results from statistical tests aimed at selecting the best regression model. The regression outcomes for different specifications of Model (2) are presented in Table 3. As data for all listed companies on the Tehran Stock Exchange is not available for the years under study, an unbalanced panel is employed for statistical analysis. The expectation is that PMC will have a positive impact on conditional conservatism. The statistical explanation is outlined below:

Table 3. Spearman and Pearson Correlations

variables	NI	PMC	SIZE	BIG_N	LEV	RET	NEG	SH	BM	ROA
NI	1	0.353	0.583	0.135	-0.326	0.134	-0.103	0.197	0.305	0.544
PMC	0.243	1	0.042	-0.008	-0.163	0.001	-0.015	0.112	0.230	0.377
SIZE	0.184	-0.034	1	0.264	0.057	-0.110	0.109	0.108	-0.096	0.027
BIG_N	0.035	0.020	0.291	1	0.121	-0.007	0.031	0.081	-0.043	-0.025
LEV	-0.279	-0.117	0.058	0.104	1	-0.015	0.023	-0.135	0.059	-0.636
RET	0.194	-0.027	-0.061	-0.014	-0.040	1	-0.835	0.001	0.213	0.022
NEG	-0.157	-0.027	0.085	0.031	0.019	-0.516	1	-0.019	-0.150	-0.017
SH	0.112	0.148	0.083	0.073	-0.120	0.004	-0.014	1	0.015	0.165
BM	-0.017	0.039	0.033	0.044	-0.009	0.055	-0.014	-0.028	1	0.361
ROA	0.412	0.301	0.029	-0.043	-0.593	0.057	0.000	0.210	0.026	1

Table 4. Regression test selection

Tests	Statistic amounts	Probability	H_0 Hypothesis	results
F (Limer)	2.430	0.000	Priority of Ols	Fixed effect
F (Limer)	2.450	0.005	Priority of Ols (IET[1])	Fixed effect
Hausman	29.800	0.480	Random effect Priority of	Random effect
Integration	48.700	0.000	integration capability	Inability
Godfrey	8.060	0.004	The absence of serial correlation	The presence of serial correlation(GRF)[2]

Regarding statistical tests at 0.05 level, the obtained probability of F (limer) and Hausman tests suggest that the fixed effects method should be used in the regression model.

The regression results for Model (2) are presented in Table 5. Column (1) displays the regression outcomes for a model that incorporates all PMC variables. The coefficient and p-value for negative returns, NEG*RET, are 1.698 and 0.133, respectively. This indicates that, on average, sample firms do not recognize losses more quickly than gains at the 0.01 significance level. Furthermore, the results for control variables, such as NEGRETSIZE, show a negative and statistically significant relationship at the 0.01 level. This suggests that larger firms tend to exhibit less conservatism than smaller firms, aligning with prior research findings (Dhaliwal et al. 2014). Conversely, the coefficient for NEGRETBM is not statistically significant, which contrasts with the perspective that conditional conservatism is influenced by prior conditional and unconditional conservatism (Beaver and Ryan 2005; Dhaliwal et al. 2014). The coefficient for NEGRETLEV is also not statistically significant, implying that a firm's leverage has no impact on the timeliness of recognizing bad news. Additionally, the coefficient for NEGRETROA is positively significant, indicating that firms with higher returns on assets are more likely to recognize bad news in a timelier manner. The coefficient for RETPMC is not statistically significant at the 0.01 level, suggesting that PMC does not delay the recognition of

1 Include Effect of time
2 Generalized random effect

gains. Lastly, the coefficients for NEGRET*PMC are not statistically significant at the 0.01 level. These results indicate that the level of PMC does not influence the delayed recognition of gains and, consequently, the timely recognition of losses.

Table 5. Regression results from PMC and conditional accounting conservatism

variables	coefficient	standard deviation	t-statistic	p-value
PMC	6.788	3.412	1.990	0.047*
SIZE	0.844	0.311	2.715	0.007*
BM	-0.148	0.065	-2.270	0.023*
LEV	-2.354	2.494	-0.944	0.345
ROA	23.944	4.108	5.828	0.000*
BIG_N	-1.397	4.970	-0.281	0.779
SH	0.071	1.337	0.053	0.958
NEG	6.811	6.102	1.116	0.264
RET	-0.122	0.671	-0.181	0.856
PMC*NEG	-1.290	4.465	-0.289	0.773
SIZE*NEG	-0.862	0.443	-1.948	0.051
BM*NEG	0.026	0.091	0.286	0.775
LEV*NEG	5.428	3.643	1.490	0.136
ROA*NEG	9.080	5.664	1.603	0.109
BIG*NEG	0.351	1.428	0.246	0.806
SH*NEG	-2.307	1.959	-1.178	0.239
PMC*RET	-0.090	0.536	-0.167	0.867
SIZE*RET	0.012	0.039	0.317	0.751
BM*RET	0.016	0.010	1.629	0.103
LEV*RET	-0.122	0.361	-0.338	0.735
ROA*RET	-0.278	0.511	-0.543	0.587
BIG*RET	-0.014	0.186	-0.073	0.941
SH*RET	0.053	0.222	0.239	0.811
NEG*RET	1.698	1.131	1.501	0.133
PMC*NEG*RET	-1.372	1.064	-1.290	0.197
SIZE*NEG*RET	-0.207	0.083	-2.484	0.010*
BM*NEG*RET	-0.065	0.036	-1.808	0.071
LEV*NEG*RET	1.827	0.988	1.850	0.064
ROA*NEG*RET	3.871	1.168	3.312	0.001*
BIG*NEG*RET	-0.089	0.310	-0.288	0.774
SH*NEG*RET	-0.739	0.512	-1.443	0.149

Table 6. The results of R2 and Durbin-Watson statistics

No	R^2	D.W	General regression model (F)		
			statistic	Prob	Result
Model 1	0.700	1.970	35	0.000	Generally, the model is significant.

The presented results in Table 6 show that the regression model is significant for the whole model.

4.2.2. Primary results of PMC and unconditional conservatism

The regression outcomes for various specifications of Model (4) are detailed in Table 7. Due to the unavailability of data for all sample firms on the Tehran Stock Exchange market for the years under study, an unbalanced panel is employed for statistical analysis. In alignment with the strategy of unconditional conservatism, no relationship between PMC and unconditional conservatism is anticipated. The statistical explanation is presented below:

Table 7. Regression test selection

Tests	Statistic amounts	Probability	H0 Hypothesis	Results
F (Limer)	1.051	0.334	Priority of Ols	Ols
F (Limer)	0.938	0.676	Priority of Ols(IET)[1]	Priority of Ols(IET)
Kolmogorov-smirnov	0.394	0.000	Priority of Ols	Gls
Durbin–Watson	1.866	0.0143	Priority of Ols	Gls
Ols	5896.453	5939.941	-2939.227	ols
Ols(ITE)	5886.743	5964.055	-2927.372	

Regarding the statistical test at 0.05 level, the obtained probability of the above table tests suggests that the Ols method should be used in the regression model.

Table 8. Regression results from PMC and unconditional accounting conservatism

Variables	Coefficient	Standard Deviation	T-statistic	P-value
PMC	1.512	1.555	0.972	0.331
SIZE	-0.181	0.158	-1.150	0.250
BM	0.197	0.030	6.590	0.000*
LEV	3.813	1.351	2.822	0.005*
ROA	0.056	2.258	0.025	0.980
BIG_N	3.563	2.478	1.438	0.151
SH	-1.110	0.648	-1.713	0.087

Table 9. The results of R2 and Durbin-Watson statistics

No	R^2	D.W	General regression model (F)		
			Statistic	Prob	Result
Model 2	0.420	1.820	126	0.000	Generally, the model is significant.

The presented results in Table 6 show that the regression model is significant for the whole model.

1. Include Effect of time

Table 10. The VIF results for all independent variables

The variables	VIF
PMC	3.929
LEV	2.210
BM	2.600
SIZE	4.688
ROA	2.023
SH	2.419
BIG_N	5.248
NEG	2.989

The presented results in the table indicate that as all the values of the VIF index are less than 8, there is no multicollinearity between variables.

The regression results for Model (4) are displayed in Table 8. In Column (4), you will find the regression outcomes for a model encompassing all PMC variables. The coefficient for PMC and its associated p-value is not statistically significant at the 0.01 level, indicating that the market competition level does not affect unconditional conservatism. The variable SIZE also lacks statistical significance at the 0.01 level, signifying that the firm's size does not impact unconditional conservatism, which aligns with Model (3) findings. Additionally, the results demonstrate a positive association between BM and unconditional conservatism, suggesting that unconditional conservatism is influenced by prior conditional and unconditional conservatism. A significant and positive coefficient on LEV suggests that firms with higher leverage exhibit increased timeliness in recognizing costs. Conversely, the coefficient for BIG_N is not statistically significant at the 0.05 level, indicating that the presence of the national auditing organization has no effect on the adoption of unconditional conservatism, which is in line with the results from Model (3). Finally, the coefficient for SH is not statistically significant. In summary, these results collectively suggest that the level of PMC does not influence the adoption of unconditional conservatism.

5. Discussion and Conclusion

This study aims to investigate the impact of competition on accounting conservatism, specifically the timely recognition of losses in an asymmetric manner. It delves into the distinct implications of conditional and unconditional conservatism in shaping accounting practices. Achieving effective management within a company requires securing its future sustainability and profitability. The emergence of new competitors is an inevitable trend in product markets, especially in emerging markets experiencing increased competition. Furthermore, the existing literature presents a mixed perspective on the influence of competition on conservatism. Consequently, this study underscores the importance of innovating and generating fresh insights concerning the interplay of competition, conditional and unconditional conservatism. The findings presented here make a valuable contribution to the literature on the application of accounting conservatism in competitive markets. They highlight the effectiveness of a competitive environment in influencing the adoption of conservative accounting procedures.

According to the findings, the results have significant implications for managers, analysts, investors, tax authorities, and standard setters. Adopting a conservative approach when reporting in competitive conditions is advisable from a managerial perspective. Furthermore, to enhance market expectations regarding future business performance, it is desirable to reduce conservatism in financial reporting when financing through equity. Conversely, conservative reports ensure the recognition of all incurred expenses and only realized incomes. Therefore, in a competitive industry where more conservative approaches are employed, the financial situation of firms provides signals to investors

and analysts, indicating that these firms' situations are more favorable than what is presented in financial statements. Consequently, this enhances the accuracy and reliability of financial reports for investors. In other words, the presence of accounting conservatism in financial statements helps prevent fraudulent reporting, ultimately leading to the maximization of stockholders' wealth. For tax authorities, the adoption of conservative approaches is also of utmost importance. This is because the financial situation appears more favorable than what is reported, leading to the expectation of higher taxable income. Finally, since the objective of standard-setting is to provide fair information, the impact of competition on presenting unbiased information (which may involve employing more conservatism than usual) should be counteracted.

The findings suggest that the presence of Product Market Competition (PMC) does not significantly impact the implementation of conditional conservative procedures. In other words, firms in more competitive industries are not inclined to recognize losses more quickly than gains. The results of this study contradict the findings of Muhammad et al. (2017), Dhaliwal et al. (2014), Iatridis (2011), Folsom (2009), Watts (2003), Ahmed et al. (2002), Darrough (1993), Clinch and Verrecchia (1997), which suggest a positive association between intense competition in product markets and the use of conditional conservatism. Conversely, research by Hagerman and Zmijewski (1979), Zimmerman (1983), Watts and Zimmerman (1986), and Kordlor and Shahriary (2010) indicate that firms in absolute monopoly markets are more likely to recognize losses more quickly than gains. This is attributed to political and regulatory considerations.

Furthermore, we have observed that competition within an industry does not influence unconditional conservatism. These findings contrast with the results of Mahdavi and Momtazian (2014), who suggested a significant relationship between Product Market Competition (PMC) indicators and unconditional accounting conservatism. Specifically, as competition intensifies in any industry, companies tend to apply conservatism in their financial reporting due to competitive pressures, leading to reduced profits independent of current economic conditions. In contrast, our current findings align with the theory of unconditional conservatism, indicating that unconditional conservatism is not contingent on external news. Instead, it can be applied by considering a firm's financial policies. We have also discovered a positive association between the book-to-market ratio and unconditional conservatism. This suggests that both prior conditional and unconditional conservatism influences unconditional conservatism.

This paper investigates how existing competition within an industry influences the adoption of conservative approaches by firms operating within that industry. The underlying rationale for these findings suggests two alternative implications. The first implication proposes that firms facing intense competition from existing rivals may be inclined to recognize losses more promptly than gains. This may be done to deter over-production by rival firms or to incentivize them to produce less. On the other hand, a contrasting view suggests that firms are more likely to embrace conservatism as a strategic move to enhance their competitive standing against potential new entrants. The underlying reasoning for these findings is rooted in the capital structure of emerging markets. This implies that undisclosed factors may influence the application of varying levels of accounting conservatism in financial reporting within the Tehran Stock Exchange, in contrast to more developed countries. To underscore the significant impact of accounting conservatism and competition, it is recommended that future research considers the use of other determinants to measure these variables. Additionally, evaluating the effects of cost stickiness on these factors and examining the relationship between other aspects of competition and both conditional and unconditional conservatism should be explored in subsequent investigations.

Certain conditions are often beyond the researchers' control during an empirical study. In this context, the control variable "type of industry" is omitted because it's not feasible to measure

competition separately across various industries. The level of competition within an industry is influenced by several factors, including the expertise of the labor force, but these elements are excluded due to their qualitative nature.

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Appendix 1: variable Definitions

Dependent Variable:

NI: Net income after extraordinary items deflated by the beginning of the fiscal year market value of equity.

NNI: book value of equity dividend by market value of equity.

Test Variable:

PMC: A proxy for the extent of PMC

Control Variables:

SIZE: Natural logarithm of market value of equity.

BM: Book-to-market ratio computed as the book value of common equity scaled by market value at the beginning of the fiscal year.

LEV: Debt-to-asset ratio at the beginning of the fiscal year common equity at the beginning of the fiscal year

BIG_N: 1 if the auditor is a national auditing organization for the current fiscal year and 0 otherwise.

ROA: Net income in the year dividend by total asset.

SH: Percentage of Institutional investor