Product market competition in accounting, finance, and corporate governance: A review of the literature

Md. Babar, Ahsan Habib



PII:	\$1057-5219(20)30250-7
DOI:	https://doi.org/10.1016/j.irfa.2020.101607
Reference:	FINANA 101607
To appear in:	International Review of Financial Analysis
Received date:	11 June 2020
Revised date:	31 July 2020
Accepted date:	13 October 2020

Please cite this article as: M. Babar and A. Habib, Product market competition in accounting, finance, and corporate governance: A review of the literature, *International Review of Financial Analysis* (2020), https://doi.org/10.1016/j.irfa.2020.101607

This is a PDF file of an article that has undergone enhancements after acceptance, such as the addition of a cover page and metadata, and formatting for readability, but it is not yet the definitive version of record. This version will undergo additional copyediting, typesetting and review before it is published in its final form, but we are providing this version to give early visibility of the article. Please note that, during the production process, errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

© 2020 Published by Elsevier.

# Product market competition in accounting, finance, and corporate governance: A review of the literature

Md. Babar Md.Babar.1@uni.massey.ac.nz, Ahsan Habib<sup>\*</sup> a.habib@massey.ac.nz School of Accountancy, Massey University, Private Bag 102904, Auckland, New Zealand

<sup>\*</sup>Corresponding author.

#### Abstract

Product market competition has been identified as one of the most powerful corporate governance tools for motivating managers to maximize firm value. Consistent with this view, a large body of theoretical and empirical research over the years has investigated the implications of product market competition. This paper synthesizes and critically evaluates the empirical literature on the consequences of product market competition in the accounting, finance, and corporate governance domains. Our review focuses on issues like financial reporting quality, analyst forecasting activities, asset pricing, investment, and financing decisions, and the substitutive versus complementary relationships between product market competition has profound implications for these issues, the empirical findings often provide conflicting results. We highlight such contradictory findings and offer suggestions for future research. Our review will help researchers intending to further investigate the implications of product market competition, both in the US and internationally.

Keywords: product market competition; financial reporting; corporate governance; finance.

#### 1. Introduction

We synthesize and critically evaluate the vast body of empirical literature on product market competition and provide some potential future research directions in the fields of accounting, finance, and corporate governance. Our review seeks to inform readers about the conflicting evidence on the consequences of product market competition as an external corporate governance mechanism. The separation of ownership and control gives rise to

information asymmetries that managers can use to exploit individual outside shareholders (Jensen & Meckling, 1976). To minimize such sub-optimal managerial actions, researchers have identified a number of pure market forces, like product market competition (Alchian, 1950; Stigler, 1958), the market for corporate control (Manne, 1965), and labor market pressure (Fama, 1980). Shleifer and Vishny (1997) argue that product market competition is probably the most powerful force for achieving economic efficiency in the world.

Competition has various dimensions and different shapes in different markets. In line with the classical theories, competition can be defined as a rivalry among existing entities within an industry (Porter, 1980). The rivalry can be observed in various dimensions, such as discounts in price, market promotions and advertisements, encoded quality, and product innovations. The resource-based view of competition envisages competition as focusing on the capacity of a firm to restrain the imitation of its unique and distinctive resources (Barney, 1986). Competition can also be explained from the 'cross elasticity of demand' perspective, where the extent of competition is higher if the product of one firm conveniently substitute for the products of others (Li, Lundholm, & Marnis, 2013). According to the industrial organization view, competition has been partrayed as an industry-level construct and, therefore, competition is defined by the ir dustry dynamics, such as the degree of market share held by the firm, i.e., the industry concentration.

Product market competition in profound implications for financial reporting quality ( Cheng, Man, and Yi, 2013), for real economic decisions (Jiang, Kim, Nofsinger, & Zhu, 2015), and for other corporate governance arrangements (Giroud & Mueller, 2010). So, a systematic literature review is important for enhancing our understanding of how product market competition affects various issues in accounting, finance, and corporate governance. Given that various the retical arguments affect the empirical tests of product market competition differentially, it is not surprising to see mixed evidence on whether product market competition is beneficial or detrimental for the overall economy. Hence, it is crucial to understand the underlying factors behind the competing results. Further, there are overlapping areas between accounting and finance research with respect to corporate governance that add additional ambiguity to the evaluation and interpretation of the research findings. Hence, this review will synthesize these findings critically to provide a holistic view about the role of product market competition for corporate actions.

We follow a systematic review approach as the advantage of systematic reviews lies in a "replicable, scientific, and transparent process that enables the researcher to provide an audit trail, justifying his/her conclusions" (Tranfield, Denyer, & Smart, 2003, p. 218). We

identify, review, and classify relevant works adapting the approaches proposed by Haleblian, Devers, McNamara, Carpenter, and Davison's (2009), and Brauer (2006). First, to ensure the quality of the reviewed papers, we select studies published between 1998 and 2020 in journals that are ranked B and above in the Australian Business Dean Council's (ABDC) 2019 journal rankings, with fields of research (FOR) codes 1501 (accounting) and 1502 (finance) together with those corporate governance papers included in (FOR) code 1503.<sup>1</sup> We found the study by Harris in 1998 as the first published empirical paper on the consequences of product market competition in our chosen fields. Second, we conduct a comprehensive search through different platforms and databases, such as: Business Source Complete (EBSCOhost), Scopus, Emerald Insight, Web of Science, Googa Scholar, and other internet sources; with a keyword search comprising "product mark't competition", "competition", "market competition", "competitiveness", "competition in product market" in order to identify relevant papers. We also searched the Social Science Research Network (SSRN) for working papers. We skimmed through the articles in tickly derived, to identify whether they tested, empirically, the consequences of producy market competition. Third, to keep the review manageable, we include only empiric.<sup>1</sup> papers that used product market competition as the main variable of interest, i.e., we excluded papers that used competition as a moderating variable.<sup>2</sup> Collectively, we identify a total of 108 papers examining the consequences of product market competition on accounting, finance and corporate governance issues. We find that 56 of the papers appear in A\*-ranked, a further 29 papers in A-ranked, and 15 in B-ranked wurnals. We include a total of 8 working papers that have been presented at top conference. Fourth, although our review considers mainly academic papers published in accounting and finance journals, we also include articles that examine the consequences of product market competition, encompassing accounting, finance, and corporate governance issues, but published in journals from other disciplines (e.g., corporate governance journals).

<sup>&</sup>lt;sup>1</sup>. For a complete list of journals of the ABDC ranking systems, please see ABDC 2019 Journal Rankings, retrieved from <u>https://abdc.edu.au/research/abdc-journal-list/2019-review/.</u>

<sup>&</sup>lt;sup>2</sup> For example, Jain, Li, and Shao (2013) examine the effect of founder CEOs on post-IPO cash holding in low versus high competition settings. The authors reveal that when firms are run by founder CEOs, post-IPO cash holding is low, and the marginal value of post-IPO cash reserves is high, but only in highly competitive market. Gupta, Banerjee, and Onur (2017) investigate the joint effect of R&D intensity on firm value using product market competition as a context. The authors reveal that in developing countries, R&D affects firm value positively for firms operating in low market competition industries. On the other hand, in developed countries, the positive association between R&D and firm value holds irrespective of the level of product market competition. Hodges, Lin, and Lin (2014) show that better corporate governance reduces the cost of equity only for firms operating in more competitive environments.

Our review will contribute to the extant literature in two important ways. First, the review will assist academic researchers who intend to investigate the implications of product market competition in accounting, finance, and/or corporate governance, especially for those who would like to explore non-US contexts. Second, since product market competition has been described as one of the most influential external corporate governance mechanisms, our review should be also helpful to firms in designing optimal internal governance structures in light of the external market competitiveness. Our review should also help corporate governance regulators to refrain from proposing 'one-size-fits-all' governance policies, as firms operate in different competitive environments.

We organize the remainder of the review as follow: Section 2 describes the theoretical framework underpinning product market competition, and describes the various proxies used to measure the degree of competition. Section 3 reviews empirical studies examining the consequences of product market competition for financial reporting, analyst forecasting and auditing issues. Section 4 reviews the empirical literature on the consequences of product market competition for finance-related issues, including: asset pricing, financing, cash holdings, investment, and payout decisions. Section 5 reviews the literature on the substitutive versus congregation for product market competition vis-à-vis other corporate governance tools. Finally, Section 6 concludes the paper. We critique the existing studies where appropria e and offer suggestions for future research in the relevant sections. Relevant studies are sur una rized in tables 1 to 3.

#### 2. Product market competitio. • theory and measurement 2.1 Theory of product p.a. kei competition

An efficient set of corporate governance tools has been proposed and widely adopted, to mitigate the well-known agency conflicts stemming from the separation between ownership and control (Fama & Jensen, 1983; Jensen & Meckling, 1976). However, there is ample evidence that traditional corporate governance mechanisms are inadequate to protect the interests of minority shareholders (e.g., Bebchuk & Fried, 2005). Notwithstanding, numerous firms function effectively and efficiently in the national and international markets, because of the strong disciplinary effect exerted by product market competition (Scharfstein, 1988; Schmidt, 1997). Competitive markets force managers to outperform peers, or risk facing job termination and eventual bankruptcy (Chou, Ng, Sibilkov, & Wang, 2011). Allen and Gale (2000) also posit that competition in the product market motivates well-managed

firms to acquire the poorly managed ones, thereby, maximizing their shareholders' wealth. In highly competitive industries, managers face tremendous pressure to reduce, or possibly eliminate, managerial slack, and to maximize profits and increase efficiency in order to survive in the market (Giroud & Mueller, 2010, 2011; Hart, 1983). Hart (1983) elaborates this by noting that firms within an industry are exposed to common productivity shocks and, when the costs of one firm decrease, the other firms also face a similar decrease in costs. In that situation, the profit-maximizing firms reduce product prices, thereby, forcing poorly managed firms in the same industry to cut prices by reducing managerial slack. Thus, Hart (1983) posits that competition brings discipline and, hence, has implications for the "managerial theory of the firm" or the so-called agency costs of firms.

Several authors have indicated a connection between . gen y costs and product market competition (Baggs & De Bettignies, 2007; Giroud & Nueller, 2010, Jagannathan & Srinivasan, 1999) consistent with the theoretical prediction of Hart (1983).<sup>3</sup> Giroud and Mueller (2010), for example, show that when managers face lower competition in the industry, they avoid psychologically and intell countly difficult tasks, e.g., bargaining with suppliers, avoiding disputes with labor unions, and demanding higher budgets from the parent company: a preference for 'the quiet life' (Fertrand & Mullainathan, 2003). However, with a wave of higher competition, the quie. life disappears, and managers focus on reducing costs and managerial slack. The authors a'schosit that productivity growth may be higher for firms operating in competitive industries because the presence of large numbers of firms which enable them to learn from the viccess and failures of others. However, these findings are in stark contrast to those of Jensen and Meckling (1976), who argue that the presence of competition in product marcets is not effective in eliminating agency costs, because of managerial delinquency. Jensen and Meckling (1976, p. 329) state: "If my competitors all incur agency costs equal to or greater than mine, I will not be eliminated from the market by their competition."

Product market competition also reduces information asymmetry and, thus, reduces agency problems. As firms operating in highly competitive industries are likely to be more financially constrained, because of their weak product pricing power, they need to raise capital at a lower cost from the capital market. This requires them to provide more information to capital providers: information that likely reduces information asymmetry (Lee,

<sup>&</sup>lt;sup>3</sup>Baggs and De Bettignies (2007) mention that competition reduces costs and increases employee efforts. Similarly, Jagannathan and Srinivasan (1999) also point that firms in low competitive industries involve in low productive activities.

Byun, & Park, 2019). Schmidt (1997) and Holmstrom (1982) show theoretically that industries facing intensive competition are less plagued with asymmetric information problems, because stakeholders can benchmark the particular firm easily against many others operating in the industry, and, thus, can evaluate the performance of the firm at low cost.

However, product market competition is also likely to drive down expected profits and exacerbate default risk (Irvine & Pontiff, 2009). Indeed, firms in competitive markets are constantly struggling for customers, and an increase in market share by rivals increases uncertainty about future performance and, hence, increases the riskiness of firms' business environments. Empirical research confirms that the risk-increasing effect of competition has important implications for firm decisions, such as hedging decisions (Haushalter, Klasa, & Maxwell, 2007), financing decisions (Xu, 2012), and payor t policies (Hoberg, Phillips, & Prabhala, 2014). Product market competition can also affect the operational efficiency of the firm adversely and aggravate agency problems. Owing to increased pressure from the product market, managers may overstate profits in order to achieve their expected earnings performance (Lemma, Negash, Mlilo, & Lulseg a 2018).

Taken together, competing argument, exist regarding the implications of product market competition, and, therefore, whether product market competition fosters or inhibits efficiency is, ultimately, an empirical question.

#### 2.2. Measurement of product to arket competition

The validity of the emplicical research on product market competition, to a large extent relies on the reliability of the measurement proxies used to measuring it. However, over time, various measures have the used as proxies, but all suffer from certain limitations. We now provide an overview of the proxies used in the extant product market competition research in our chosen domains.

(a) **Barriers to entry:** A simple measure of competition, operationalized by the capital requirements for starting a business, and acquiring fixed assets or property plant and equipment (Clarkson, Kao, & Richardson, 1994). Another 'barrier to entry' measure is the costs necessary for selling (proxied by costs of sales divided by total sales), assuming that all firms in the same industry face the same cost curve.

(b) **Lerner Index (LI)**: This index originated in economics (Lerner, 1934), and captures the ability of a firm to set the price of its products above their marginal cost. Thus, LI, also known as price cost margin (PCM), indicates the pricing power of a firm. Under perfect competition, firms have to set the selling price very close to marginal cost, resulting in zero profit. When a firm has low (high) pricing power, it would experience vigorous (minimal) competition from other firms within the same industry. A lower value of LI indicates the higher level of competition faced by the firm, and vice-versa. The following formula is used to measure the index.

Where, Profit =Sales – cost of goods sold – selling, general & administrative expenses.

However, the PCM measure can be affected by industry-specific factors unrelated to the pricing power of a firm. Therefore, many researchers (Datta, Iskandar-Datta, & Singh, 2013; Gaspar & Massa, 2006; Peress, 2010; Sharr a, 2011) use the industry-adjusted price cost margin (IPCM) as follows:

Where,  $LI_i$  is Lerner Index for firm i, and  $W_i$  is the proportion of sales of firm i to total industry sales. This IPCM is an improved version over the PCM, since it indicates the intraindustry market power and considers the industry-wide elements that commonly affect all firms within an industry (Datta et al., 2013).

(c) **Herfindahl-Hirschr (an 'HH) index**: This is a widely used measure of product market competition employed by researchers both in the US (Giroud & Mueller, 2010; Jaroenjitrkam, Yu, & Zurbruegg, 2019; Markarian & Santalo', 2014) and internationally (Haw, Hu, & Lee, 2015). If an industry contains large number of firms where each firm possesses a small market share, this industry can be viewed as highly competitive (i.e., a low HH index). The opposite is true when few firms dominate the industry (a high HH index). HH index can be expressed as follows:

*HH index*<sub>i</sub> = 
$$\sum_{j=1}^{J} s_{ij}^2$$
.....(3)

where,  $s_{ij}$  is the market share of firm *j* in industry *i*. For each year, market share is calculated by using a firm's net sales divided by the total sales in its industry. *Four-firm concentration ratio* is another variation used to measure industry competition, where the ratio is calculated

as the sales of a firm divided by the sum of the sales of the four top firms in an industry. US researchers use data from Compustat to construct the HH index. There are at least two advantages of using the Compustat-based HH index. First, the data is available for a long period of time and, hence, can be used to infer discernible shifts in competition across time. Second, the HH index can be constructed across a wide range of industries (Ali, Klasa, & Yeung, 2008). However, it is argued that the HH index suffers from measurement error as the database excludes private firms. Hoberg and Phillips (2010), therefore, develop a fitted HH index that considers both public and private firms. Hoberg and Phillips (2010) combine the Compustat data with the HH index data from the US Commerce Department and the employee data from the US Bureau of Labor Statistics to create the fitted HH index for all industries. For manufacturing industries, they document a hig) correlation between their fitted HH index and the actual HHI from the Commerce Depart ment.

(d) Text-based competition measure: Li et al. (2012) has developed a measure to gauge competition at the firm level through textual ar an sis of the 10-K forms submitted by firms. The textual disclosures provide an indication of the competitive pressure faced by the firms within each industry and show manage. r erceptions regarding competition. The degree of competition is measured using the following formula:

$$COMP \qquad \qquad \frac{NCOMP}{NWORDS} \dots \dots \dots \dots \dots \dots \dots (4)$$

Where, COMP= degree of competition, NCOMP = frequency of words related to competition, NWORDS= total number of words in a 10-K form. This measure includes information regarding totagetition from a wide array of sources, such as: listed firms, private firms, foreign firms, and potential entrants. Hence, this measure is an improvement over the HH Index. However, the limitation of this measure is that it relies on managers' perceptions about competition and assumes that managers provide reasonably unbiased reports in the 10-K forms.

Another text-based measure of competition is developed by Hoberg et al. (2014) and is referred to as 'product market fluidity' (*FLUIDITY*). *FLUIDITY* "...measures the change in a firm's product space due to moves made by competitors in the firm's product markets. The focus on rivals is a distinguishing feature of fluidity. For instance, even if a company's current product mix is stable, entry by rivals can pose competitive threats to a firm" (p. 294). Hoberg et al. (2014) use firms' 10-K filings to collect data on firm product descriptions.

According to Hoberg et al. (2014) "Fluidity captures how rivals are changing the product words that overlap with firm *i*'s vocabulary. Because fluidity focuses on product space dynamics and changes in products, it is an entirely new construct relative to the industry definitions and variables..." (p. 299). *FLUIDITY* is the cosine similarity between a firm's own vector of words and the change in rivals' vector of words. A higher value of *FLUIDITY* implies more competitive threats. The *FLUDITY* measure is advantageous since it is an *exante* measure that captures product market competitive threats at the firm level. In addition, it is highly representative of rivals' competitive actions, which are relevant for incumbent firm decisions. The authors made the data publicly available in the website *Hoberg and Phillips Data Library* and, thus, opened opportunities for potential researchers.

**Summary:** We have reviewed some the existing neasures used in product market competition research. As is evident from the discussion above, all measures suffer from certain limitations and, therefore, empirical finding, need to be evaluated considering the measurement difficulties in mind. HH index is widely used in the existing literature, especially due to its convenience and data availability. However, given that this measure does not truly capture the degree of competition, ecent studies have started employing the various text-based measures described above. However, the latter is undertaken predominantly in the US setting. Research outside the US actional availability on non-text-based measures.

# 3. Review of the literature related to product market competition and financial reporting

In this section vie review the strand of the literature that examines the effects of product market competition on financial reporting quality including disclosure quality, analyst forecast attributes, audit outcomes, and other miscellaneous reporting issues.

#### 3.1. Product market competition and financial reporting quality

A plethora of research has demonstrated profound implications of product market competition for financial reporting quality. This stream of research is very important because successful investment decisions hinges critically on the availability of high-quality financial information. We review this strand of the literature below.

#### **3.1.1.** Product market competition and corporate disclosures

Proprietary cost hypothesis indicates that voluntary disclosures may harm the firms' competitive position by revealing sensitive information in the market (Verrecchia, 1983). Increased disclosures may also attract rivals: a detrimental consequence for the existing firms (Darrough & Stoughton, 1990). Hence, voluntary disclosure in the face of product market competition depends on the trade-off between the benefits derived from such disclosure and the costs incurred.

Ali, Klasa, and Yeung (2014) find that firms in low competitive industries issue *fewer* management earnings forecasts.<sup>4</sup> One potential explanation for this finding could be that firms in low competitive industries may face higher proprietary costs, because their business strategies are highly interdependent and their profits depend significantly on their competitors' actions. Huang, Jennings, and Yu (2017) use the import tariff reductions as a measure of competition in the US and find that a r duc ion in tariff (an increase in competition) reduces managerial earnings forecasts Moreover, the relationship is more pronounced when such forecasts increase the probability of incurring greater proprietary costs. Li (2010) finds that disclosure quanticy (both good and bad news disclosures) decreases when the firms face competition from existing competitors (consistent with proprietary cost theory) but increases in the case of competitive threat from potential entrants. The increase in bad news dicclosures is aimed at discouraging new entrants to enter the market. Disclosure of positive new by incumbents alleviates rivals' concerns that the incumbent is concealing good news. Disclosure quality, too, is increased with an increase in competition, as firms provide conservative profit forecasts. Using disclosure of major customer as a setting, Ellin, Fie, and Thomas (2012), find that firms operating in less competitive industries, a e si inificantly more likely to withhold disclosure of the identities of major customers: a finding "...consistent with firm in these industries being protective of the rents they capture from their cultivated supply relationships and consequently revealing less information about their major customers" (p. 687). However, Yen, Li, and Chen (2016) use narrative risk disclosures as the disclosure channel, and find a positive relationship between risk disclosures and industry concentration.<sup>5</sup>

<sup>&</sup>lt;sup>4</sup> Harris (1998) shows that firms in more concentrated industries are less likely to provide business segment disclosures. Botosan and Stanford (2005), too, found that firms concealed information on segments that were in more concentrated industries before the promulgation of Statement of Financial Accounting Standard (SFAS) No. 131.

<sup>&</sup>lt;sup>5</sup> The author's choice for risk factor disclosures as the empirical setting is premised on the notion that such disclosures contain both systematic and idiosyncratic information, thereby, enable the authors to analyze decisions on the disclosure content with different levels of proprietary costs. Furthermore, risk factor disclosures

On the other hand, the signaling hypothesis and the deterrence hypothesis posit a *greater* level of disclosure for firms operating in *more* competitive industries. Burks, Cuny, Gerakos, and Granja (2018) use the Interstate Banking and Branching Efficiency Act in the US as an exogenous shock to proxy for an increase in the degree of competition, and find an increase in more negative tones in press releases: a strategy aimed at discouraging potential entrants. Similarly, Allee, Do, and Sterin (2020) reveal that firms facing intensive product market competition provide more negative and uncertain future-oriented information in their earnings conference calls.

These studies assume a linear relationship between competition and disclosures. Gago Rodríguez, Guo, Marquez Illescas, and Núñez Nickel (2025, depart from this linearity assumption and propose a non-linear relationship using 'causal imbiguity' as a moderating factor. Causal ambiguity refers to the uncertainty or varuerless regarding how the profitgenerating processes, i.e., inputs, produce the profits or results, i.e., outputs (Mosakowski, 1997). The authors measure 'causal ambiguity' through different proxies, such as intangible intensity, number of business segments, and complexity in revenue prediction. Using a US sample for the period 2002-2015, the authors reveal that when firms' causal ambiguity is low (high), the relationship between product inarket competition and disclosure exhibits an inverse U-shape (U-shape) pattern. The former supports the proprietary arguments), whilst the latter supports the deterrence view

In addition to voluntary abclosures, many other studies explore the association between product market  $com_{\rm P}$  vition and alternative financial reporting quality constructs. This is not surprising given that the concept of financial reporting quality is elusive and multidimensional in pattice (1) echow, Ge, & Schrand, 2010).

# **3.1.2.** Product market competition, earnings conservatism, earnings persistence, and earnings comparability

Dhaliwal, Huang, Khurana, and Pereira (2014) document a positive relationship between product market competition and conditional conservatism in the US. They also find that the higher the competitive threat from new entrants and existing rivals, the greater the level of conditional conservatism, especially for industry followers, but not for industry leaders. These findings are consistent with the 'strategic view', and support the idea that strategic considerations (i.e., discouraging new entrants) determine the relationship between

are inevitably unfavorable or pessimistic, hence, providing a homogeneous incentive for managers to decide the content of the disclosures (p. 44).

product market competition and conditional conservatism. Haw, Ho, Li, and Zhang (2015) extend Dhaliwal et al. (2014) using data from an international sample of 38 countries, and find that when the countries' legal institutions are strong (weak), product market competition positively (negatively) affects the degree of accounting conservatism. This evidence, therefore, suggests that product market competition, in concert with strong legal institutions, drives accounting conservatism. Neither of these studies tests the relation between product market competition and unconditional, or news-independent, conservatism.

Healy, Serafeim, Srinivasan, and Yu (2014) find that countries with intensive product market competition exhibit faster mean reversion (a feature of earnings persistence) of accounting return. However, in countries characterized by high earnings management propensity, mean reversion is much slower for profitable films, but quicker for loss-making firms. This is possibly owing to the capital market expectation that firms enjoying positive abnormal returns will continue exhibiting such abnormal returns. This might motivate profitable firms to lessen the speed of mean reversion. Using a US sample, Safdar (2016) documents that accounting-based fundamental in Jysis, can predict firms' stock return and profitability more (less) effectively for low (h.gh) competitive industries. The findings of this study are based on the intuition that firms operating in low competitive environments can maintain stable profits for longer periods, which makes it comparatively easy to forecast the performance of these firms compare 1t. firms operating in highly competitive environment.

Financial statement comparability is another quality of accounting information. Comparability describes the degree of similarity in accounting choices between two or more firms. When common economic factors explain a large amount of the similarity of firms in an industry, the earnings of such firms should be readily comparable. The Financial Accounting Standards Board (FASB) in its conceptual framework, indicates that comparability enriches the usefulness of information for making decisions. In this regard, Imhof, Seavey, and Watanabe (2018), using a text-based competition measure, reveal that higher (lower) product market competition decreases (increases) financial statement comparability. This result is more pronounced in a high information asymmetry environment. The finding is consistent with the proprietary cost view.

#### 3.1.3. Product market competition and earnings management

With respect to the effect of product market competition on earnings management, Cheng et al. (2013) use data from the US manufacturing industry and find that firms in

concentrated but heterogenous industries provide low quality earnings information. Similar findings are reported when analyst private information acquisition is used as a proxy for information environment. However, Shi, Sun, and Zhang (2018), find that product market competition increases accrual earnings management (AEM), because of managerial career concerns and pressure to meet expected earnings. However, more competition decreases real earnings management (REM) since REM affects the competitive position of firms adversely. But Markarian and Santalo' (2014) document that product market competition increases both AEM and REM: a finding that is consistent with agency theory. Moreover, the effect is more pronounced when firms underperform their rivals, and when firms operate in an opaque information environment. But Laksmana and Yang (2014) find that both AEM and REM increase in firms operating in concentrated industries, and orgue to result from the capital market pressure to meeting and/ or beating prior year ear ings and analysts' forecasts. However, such incentives should be equally applicable for firms operating in competitive environments and, hence, the arguments proposed by <sup>T</sup> Assmana and Yang (2014) seem less convincing. Actually, Datta et al. (2013) find that JS firms facing lower competition are less *likely* to engage in AEM. The authors argue that when the firm enjoys high market power, it can pass cost shocks to customers converiently and maintain stable earnings, thus, lessening the need for more earnings management. However, the authors remain silent about the effect of product market pricing power on REA Balakrishnan and Cohen (2011) examine the effect of product market competition on earnings restatements<sup>6</sup>, utilizing a quasi-natural experiment, i.e., import tariff it ductions in the US. Using industry level measures of earnings restatements, the authors find mat the higher (lower) the product market competition, the lower (higher) the frequency of earnings restatements in an industry. Hence, the authors find support for the disciplining effect of product market competition. Lemma et al. (2018) document a positive (negative) relationship between product market competition and AEM (REM) using the HH index as a proxy for competition and data from 41 countries. This finding is consistent with Shi et al.'s (2018) study using US data. However, Lemma et al. (2018) does not include any variable to control for country level institutional settings, such as legal enforcement, IFRS adoption, and gross domestic product per capita (GDP), to name a few, thus, raising serious concerns regarding the credibility of the findings stemming from 'omitted variable' concern.

<sup>&</sup>lt;sup>6</sup> A restatement represents an acknowledgement by the firm of a material omission or misstatement in their financial statements (Palmrose & Scholz, 2004) and, therefore, has been proposed to be a much better signal of earnings quality compared with AEM and REM (Christensen, Glover, Omer, & Shelley, 2016).

As the preceding literature regarding the linear relationship between product market competition and earnings management shows conflicting results, Guo, Jung, and Yang (2019) challenge the 'linearity assumption' and, instead, propose and find support for a non-linear relationship. When competition increases, earnings management tends to decrease, because managers get less room to manage earnings (Hart, 1983; Nalebuff & Stiglitz, 1983) but, with an increase in competition, firms face greater liquidation risk and intensive pressure to perform better (Gaspar & Massa, 2006; Raith, 2003; Schmidt, 1997). This tempts firms (especially firms with poor performance) to engage in earnings management. These two opposing factors determine the relationship between product market competition and earnings management. Liao and Lin (2016) find that firms operating in competitive markets and intending to repurchase shares are less likely to engage in d. wn vard earnings management, because of increased scrutiny from the market and the stak shol lers.<sup>7</sup>

#### 3.1.4. Product market competition and earnings response coefficients

Finally, few studies examine the association between product market competition and market perception of earnings quality as thannested through future earnings response coefficients (FERC) (Collins, Kothari, the iken, & Sloan, 1994). For example, Lee (2018) finds that in the US., firms operating in low-competition industries, exhibit greater FERC compared with firms operating in high the properties. Firms operating in low product market competition environments that competition industries. Firms operating in low product market competition environments that competition industries. Firms operating in low product market competition environments that competition industries. Firms operating in low product market competition environments that control of such firms and can incorporate that into their current valuations. This study further finds that firms having long term investments, i.e., capital expenditure or Rc D, show low FERC, as such investments heighten the uncertainty of future cash flows (Kothari, Laguerre, & Leone, 2002). Using an international sample of 38 countries, Haw, Hu, Lee Jay, and Wu (2016) also document that lower (higher) product market competition increases (decreases) FERC. Moreover, the authors also place stress on intra-industry information transfer, arguing that disclosures from the firm affect investors' judgement about the future earnings of both the disclosing firm and its competitors.

#### 3.2. Product market competition and analyst forecasting activities

<sup>&</sup>lt;sup>7</sup> Previous studies reveal that share repurchasing firms are associated with downward earnings management designed to reduce the repurchase price (e.g., Gong, Louis, & Sun, 2008). Moreover, share repurchase provides a signal regarding the repurchasing firm as well as its competitors, resulting in the revision of investors' expectations of the potential earnings of rivals (Hertzel, 1991).

In the capital market, financial analysts play a significant information intermediary role by providing vital information to market participants, through short- and long-term earnings forecasts and stock trading recommendations. Analysts assume a governance role by tracking the financial statements of firms and by distributing firm-related information regularly in the form of reports and announcements to various investors and stakeholders. Naturally, researchers are interested in knowing the relationship (substitutive versus complementary) between product market competition and analyst forecast activities. In this regard, Almeida and Dalmácio (2015), in the context of Brazil, reveal that analysts' forecast accuracy is higher for firms operating in a highly competitive product market, as well as for those having strong corporate governance. Hence, the artho s show a complementary relationship between product market competition and corporate governance: competition boosts the availability of information, but strict corporate governance helps to produce better quality financial information. Jointly, these two factors context accuracy.

In the US, however, Datta, Iskandar-Dava and Sharma (2011) find that analysts' forecast accuracy increases and forecast  $G_1$  timus decreases for firms in concentrated industries. This is consistent with such intro-senjoying stable future cash flows and persistent earnings, because they can insulate equinist cost shocks by transferring them to customers and, thus, reduce the idiosyncratic volutility (Gaspar & Massa, 2006). This, in turn, will improve analyst forecasting.<sup>8</sup> Simplety, Fosu, Danso, Agyei-Boapeah, Ntim, and Murinde (2018), in the context of the US banking industry, exhibit that higher market power (low competition) reduces analyst forecast error and dispersion: a finding that was more pronounced during the 2 007-2009 global financial crisis (GFC) regime. A plausible reason is that, during the GFC period, banks facing severe competition were more likely to engage in earnings management and experience cash flow uncertainly. Therefore, these factors contributed noise in the analysts' forecast accuracy for banks facing higher competition. Mattei and Platikanova (2017) find that analyst forecast precision decreases (increases) with the increase (decrease) in product market fluidity, using import tariff reduction as an

<sup>&</sup>lt;sup>8</sup> With respect to industry concentration and analyst forecasting complexities the authors note that "...earnings of less concentrated industries are more challenging to forecast lending support to the notion that gathering information for less concentrated sectors is more costly due to less disclosure and that higher innovation in these industries injects information complexity that negatively influences earnings forecast ability and hence accuracy...Another source of complexity for fragmented industries stems from lower likelihood of cooperation of firms with each other in these industries...industries characterized by concentration are more likely to cooperate on issues that could bolster their cash flows and reduce negative fluctuations thus rendering their earnings' forecasts less prone to error" (p. 1362).

exogenous shock. Zhang (2018) finds that analyst following increases for firms operating in more competitive industries. The author posits that intense competition improves the corporate governance landscape of firms, thereby, reducing the information-producing cost for analysts. Moreover, strong competition allows more information to pass freely within firms selling similar products, which lowers the cost of processing information for analysts. The author also reveals that higher product similarity among firms, is associated with information transfer among firms positively. However, the authors overlook other aspects of analyst activities, such as analyst forecast accuracy and forecast bias. Furthermore, the author remains silent on analysts' reaction to management forecasts in firms operating in more competitive industries. As discussed in section 3.1. management. Hisclosure varies conditional on industry competitiveness. Hence, examining analysts fore ast ng attributes alone, without incorporating management forecasting properties, provides a biased picture of the relation between analyst forecasting and product market competition.

On the contrary, Lee and Wen (2020) utilizing exogenous shocks, i.e., large import tariff decreases during 1984-2005, document the ready st coverage decreases with an increase in competitive threat from foreign rivals. Creased competition creates a more opaque information environment owing to h. h. proprietary costs and increases firm level uncertainty with a consequent increa. • in information acquisition costs for analysts. Haw et al. (2015) explore the impact of product market competition on analyst following, and the properties of analyst forecasts mernationally. The authors find that firms in highly concentrated industries having <sup>1</sup>ominant pricing power are followed by a greater number of analysts and are associated with higher forecast accuracy and smaller forecast dispersion. Moreover, these results are n ore pronounced in countries where the competition laws are less effective, and the entry costs are higher. A plausible cause is that firms can generate stable profit margin when they operate in concentrated industries, because their earnings are less volatile and, thus, it is easier for analysts to forecast with higher precision. However, this study did not test this proposition directly. Furthermore, several prior studies reveal that product market competition influences financial reporting quality (see section 3.1 above), and, hence, it is crucial to examine whether the reporting quality channel mediates the relationship between product market competition and analyst forecasting activities.

Although existing research has provided some new insights into the role of product market competition in analyst forecasting activities, more research needs to be carried out in order to understand whether the association between product market competition and analyst forecasting activities are influenced by greater corporate international diversification (Duru &

Reeb, 2002), technology-induced informational complexity (Gu & Wang 2005), and financial statement-related complexity (Hodder, Hopkins, & Wood 2008). Furthermore, we need to have a better understanding of the analysts' forecasting of alternative line items (e.g., cash flow forecasts, revenue forecasts, CAPEX forecasts), and whether such forecasts exhibit similar or different attributes to earnings forecasts under varying market competition.

#### 3.3. Product market competition and audit outcomes

Several studies attempt to test the relation between product market competition and audit fees. Competing arguments exist regarding the relation between product market competition and audit fees. On one hand, it is argued that high product market competition can alleviate agency problems, reduce information asyn met y, and enhance financial reporting: favorable outcomes that reduce audit risk and, consequently, lower audit fees. On the other hand, intensified product market competition causes higher liquidation risks for firms and increases the business risk assessed by auditors. Accordingly, the auditors demand higher audit fees to compensate for this higher a to trisk (Yuequan & Chui, 2015).

Yuequan and Chui (2015) find support for the latter argument using the HH Index as a measure of competition. However, the sludy points out that firms having greater pricesetting power tend to pay lower audit fees, the reason being that such power indicates a better competitive position for the firm with the industry, and this type of firm can enjoy a stable cash flow. On the contrary, Levenis, Weetman, and Caramanis (2011), using a sample of firms in Greece, reveal that his ber product market competition reduces audit fees and audit efforts (proxied by audit hours). The authors argue that higher competition has a disciplinary effect on firms that reduces agency costs and, consequently, audit fees. A similar result is reported by Chen, Xing, and Zhou (2019) using data from China. However, none of the prior studies control for auditor selection by firms operating in high- versus low-competitive industries. We posit that auditor choice is an endogenous decision with respect to market competition, and failure to address this self-selection bias, might have biased the results. Cairney and Stewart (2015) find that industry homogeneity decreases audit fees, since auditors can employ a similar audit procedure and, therefore, can reduce average audit costs for firms having similar operations. Another possible research topic would be to investigate whether auditor industry specialization plays a significant mediating role on the relationship between product market competition and audit fees. We also encourage future research on the relationship between product market competition and audit report lag. This is important because audit report lag is one of the few externally observable audit output variables that

allow outsiders to gauge audit efficiency and documenting a negative relationship between the two might support the disciplinary role of product market competition.

#### 3.4. Product market competition and miscellaneous financial reporting issues

Recent studies have investigated the relationship between cost behavior and product market competition. Li and Zheng (2017) document a positive relation between product market competition and cost stickiness. They suggest that increased competition induces firms to retain unutilized resources in the event of sales decline for future investments, thereby, inducing more cost stickiness. They further show that the positive association is more pronounced for firms having a strong financial position and an optimistic forecast of demand. Cheung, Kim, Kim, and Huang (2018), on the other nand, document a negative relation between competition and cost stickiness, internationally. For example, firms in less competitive industries (i.e., industries with high entry custs and high product differentiation) tend to invest in committed resources, such as adve tising, R&D, and SG&A costs, to deter potential competitors from entering the market. Co sequently, managers of these firms tend to delay cutting these costs when sales der in e u mporarily, thereby, giving rise to greater cost stickiness. In addition to cost stickiness, i ture research might explore the effect of product market competition on the cost structure of the firms (also known as operating leverage). Operating leverage reflects the proportion of fixed to variable costs. High operating leverage results in a strong sensitivity of prolits to changes in revenue. An examination of whether operating leverage responde to industry competition will shed important insights into managerial cost adjustment b. h. vior.

Finally, we find a few studies investigating the relationship between product market competition and corporate tax avoidance activities. Tax avoidance represents a real economic decision that involves substantial benefits as well as costs. Hanlon and Heitzman (2010) conceptualize 'tax avoidance' as incorporating all transactions and arrangements that could result in a reduction in the amount of a firm's corporate tax expense. Kubick, Lynch, Mayberry, and Omer (2015) document that in the US higher product market power is associated with greater tax avoidance. The authors argue that firms enjoying high product market power can withstand any unfavorable outcome of tax avoidance. Moreover, these firms can also protect themselves against economic shocks as product market power work as a buffer and natural hedge. Hence, firms facing lower competition are more likely to engage in tax avoidance. On the other hand, Wang (2019) examines the effect of product market

competition on corporate tax planning using a sample of US listed firms for the year 1994-2008. The author argues that strong competition puts severe pressure on the firms to minimize costs and, therefore, firms in competitive industries tend to manage tax efficiently, to be cost efficient. Wang (2019) finds evidence consistent with this hypothesis. Moreover, the result is more pronounced for firms experiencing a lower degree of cash flow volatility, as well as fewer investment opportunities.<sup>9</sup>

Prior study documents that tax haven operations destroy firm value (Choy, Lai, & Ng, 2017). Usually firms place their subsidiaries in the countries where they enjoy zero taxation and, thus, the placement can be a value enhancing activity for the shareholders. However, without proper monitoring and control, managers can use the for their self-interest and private benefit. Hence, future research can be directed to examine whether market competition incentivizes firms to engage in more tax haven operations and, if so, whether such actions increase or destroy firm value.

#### **3.5. Section summary**

This section summarizes the extent literature related to the implications for the financial reporting domain of product market competition research. Findings, however, provide inconclusive evidence. Several studies show that higher product market competition increases disclosure quantity, whils to other studies find the opposite. Product market competition also affects firms' management propensities and audit outcomes but, again, the findings remain mixed. Implications of product market competition for analyst forecast attributes have also been documented in our review. The mixed evidence derived for the studies indicates the necessity of conducting more international studies to broaden our current understanding of the consequences of product market competition, because international studies offer the significant variation in institutional settings that is missing from single country studies.

#### 4. Implications of product market competition research in finance

<sup>&</sup>lt;sup>9</sup> Two concurrent working papers use import penetration as a proxy for the degree of competition, and find that firms exposed to greater industry-level import penetration engage in more tax avoidance activities (Atawnah, Balachandran, Duongc, Pittman, & Podolski, 2020; Chen, Lin, & Shao, 2018). Both studies use the case of the US granting China "Permanent Normal Trade Relations" as a quasi-natural experiment to document the causal effect of increased competition on more tax avoidance.

Finance literature has extensively researched the implications of product market competition for corporate policies and asset pricing. As firms operate in markets with different degrees of competitiveness, this influences asset pricing issues and real economic decisions, including cash holdings, investment, financing, and payout decisions. In this section, we review this strand of the literature.

#### 4.1. Product market competition and asset pricing

Intensity of product market competition affects uncertainty regarding future cash flow and earnings. Hence, several prior studies examine the association between product market competition and stock returns. Bustamante and Donangelo (2017) provide empirical evidence that shows a negative association between product 1 vark it competition and expected stock return, thereby, supporting the 'entry threat channel' ind 'risk feedback channel'.<sup>10</sup> Using the US-Korea Free Trade Agreement as an external shock Ryu (2019) also documents a similar result. Hou and Robinson (2006) find that irms operating in less competitive industries are insulated from aggregate demand success and are involved in less innovation. Hence, they face a low level of risk and, there ore, experience lower stock returns. Gu (2016) documents that US firms operating in hor, competitive industries earn greater returns, but such an effect is evidenced only for R&D-intensive firms, because of greater outcome uncertainty compared with their less ). <sup>o</sup>D-intensive counterparts. On the other hand, Ali et al. (2008) find no relation between product market competition and stock returns using the US Census measures to gauge the degree of competition. Huang and Lee (2013) find that product market competition (si e of a firm relative to its industry), affects credit risk. In a concentrated industry, small irms are more likely to be driven out than equally small firms in a less concentrated indust y. The business risk of a firm increases with the increase in product market competition, and higher competition also causes higher cash flow volatility. Therefore, intensive competition is associated with higher credit risk.

Chen, Li, and Ma (2014) find that firms facing greater competition from the industry experience a lower cost of equity capital. Increased product market competition induces production and technical efficiency, resulting in a reduction in systematic economic uncertainty, which reduces the cost of equity. Irvine and Pontiff (2008) extend the asset

<sup>&</sup>lt;sup>10</sup> The *entry threat channel* posits that the expected return of the firm will be reduced, because of the decrease in firm value from the potential new entrants in the industry. Hence, higher (lower) product market competition will generate lower (higher) expected stock returns. The *risk feedback channel* suggests that the higher systematic risk experienced by some industries becomes less attractive to potential entrants. Such industries, therefore, naturally become more concentrated over time, and enjoy higher mark-ups, which translate into higher than expected stock returns.

pricing aspect of the product market competition literature by examining the association between product market competition and idiosyncratic return volatility (IRV). The authors argue and find that IRV is higher in more competitive industries, owing to the increasing cash flow and earnings volatility that stems from economy-wide intensive competition. Abdoh and Varela (2017), too, find that intense competition accentuates IRV relative to systematic volatility. Gaspar and Massa (2006) reveal that firms operating in highly concentrated industries experience lower IRV. Peress (2010), too, finds similar evidence. However, whether an increased IRV in the face of intense competition is beneficial or detrimental for firms remains unanswered. One stream of literature points that a higher IRV makes the stock price more informative by incorporating more firm-specific information into stock prices (Dasgupta, Gan, & Gao, 2010). On the other hand, risk-bas d a:guments suggest that poor financial reporting quality and cash flow uncertainty increase IRV and, consequently, affect shareholder value adversely (Irvine & Pontiff, 2008; Regigeral & Venkatachalam, 2011).

Research also shows that product market compation not only affects return volatility but is also related to stock price crash risk. Correction in a product market may curtail firms' profitability and increase the risk of management turnover (DeFond & Park, 1999). Owing to compensation and career converts, managers in competitive industries are more likely to withhold negative news: a precursor for future price crash (Li & Zhan, 2019). Further, proprietary costs theory stop or the idea that lower competition will affect stock price crash risk positively, as firms create a more opaque information environment in lowcompetitive industries. Li and Zhan (2019) document a positive effect of product market competition on stock price rash risk using the large import tariff reductions in the US as an exogenous shock.<sup>11</sup> Hov evel, whether such a finding is generalizable across countries is yet to be fully understood. For example, unlike the US, where equity-based compensation dominates CEO compensation and has been linked with a greater occurrence of price crash (Kim, Li, & Zhang, 2011), many countries globally (e.g., China, Gulf cooperation council countries) compensate CEOs through cash salaries predominantly and, hence, product market competition may play less of a role in propagating compensation-induced price crash in these countries.

<sup>&</sup>lt;sup>11</sup> On the other hand, more competition can reduce the likelihood of stock price crash risk as investors can obtain more information about a firm by benchmarking it against peers in competitive industries that inhibit the accumulation of bad news. Additionally, more competition disciplines managers' self-serving behavior, and forces managers to report more conservatively (Dhaliwal et al., 2014), which further reduces the propensity for price crash. However, Li and Zhan (2019) fail to find support for this proposition.

# 4.2. Product market competition and real economic decisions4.2.1. Product market competition and corporate cash holdings

Researchers use two types of theories widely, namely predation threat theory and agency theory, to explain the association between product market competition and cash holdings, and market valuation of cash holdings. The former theory posits that cash holdings by firms play a strategic role in maintaining competitive strength in the industry and, thus, higher cash holding by firms operating in more competitive industries affects firm value positively. On the contrary, agency-based theory indicates that excess cash holdings aggravate agency conflicts. Thus, investors usually consider a firm's large cash holding by entrenched managers as value decreasing (Dittmar & Mahrt-Smith, 2007). However, because competition disciplines managers, the agency-based view medicts that greater competition will enhance the value of cash holding. Alimov (2014) avamines the effects of product market competition on the value of cash holdings by i'rnis, using 1989 Canada–U.S. Free Trade Agreement as an exogenous shock in the nativet. The author reveals that higher product market competition increases the value o' cash holdings, and the result is more pronounced for firms having serious three and losing investment projects to competitors. Chi and Su (2016) find that market valuatio. of cash holdings increases with an increase in predatory threats from rivals. Hoberg c<sup>+</sup> al. (2014) reveal a positive relation between product market fluidity and corporate cash ho'di igs, particularly for firms that find it difficult to raise external capital cheaply. This fir. ing is consistent with the predation theory for holding cash in firms operating in more concretitive markets. Sabherwal and Thai (2019) examine the authors document that higher (lower) competition is associated with greater (fewer) cash holdings across countries. However, this relationship is weakened for firms facing greater financial constraints. Finally, Lyandres and Palazzo (2016) reveal that cash holdings by firms are negatively related with their competitors' cash holding decisions. The authors argue that when a firm holds higher cash, the possibility of greater investment by the firm in innovation also increases, which reduces the rivals' potential earnings and marginal advantage of cash holdings.

#### 4.2.2. Product market competition and corporate investments

A large theoretical literature has focused on the firms' product-market interactions for corporate investment (e.g., Fudenberg & Tirole, 1984; Stoughton, Wong, & Yi, 2017).

Empirically, Fresard and Valta (2015) identify 91 significant reductions of import tariffs between 1974 and 2005 in the US and find that, on average, US firms significantly reduce capital expenditures after tariffs decrease in their industry. They further find that the reduction of investment is observed only (i) in markets featuring competition in strategic substitutes, (ii) in firms with constrained financial resources, and (iii) in markets with low entry costs. These results are consistent with the prediction by Fudenberg and Tirole (1984) that the reduction in investment is partly strategic, as it can influence the actions of potential entrants. Stoughton et al. (2017) find that a higher level of competition amongst firms leads to inefficient investments. Their model demonstrates how a firm's information environment provides insight into management beliefs and views and, thus, 1.3s an impact on peer firms' actions in regard to product demand. They further find that firms in a poor information environment tend to over-invest in terms of their investment expenditure, in contrast to firms exposed to a 'full' information environment. Firms in 2 pa. ticular industry use signals derived from information about peer firms to develop beliefs "yout the potential payoff from product markets. Thus, with higher levels of competitior, 1 rms invest less in obtaining precise signals about rival actions. In such a setting, invistment efficiency is weaker than in a less competitive environment. Laksmana and Yang (2015) find that intensive competition motivates managers to invest more in CAPEX and R&D. The authors argue that intensive competition induces management  $t_{i}$  encage in risky investment, to survive in the long run. However, the disciplinary effect or competition ensures that managers refrain from making suboptimal investments by cuiling the overinvestment of free cash flows. Jiang et al. (2015), using a quasi-natural experiment, i.e., reduction in import tariff, reveal a positive association between product market con petition and corporate investment in China.<sup>12</sup> The authors argue that a competitive environment decreases the value of the 'option to wait', because competitors can enjoy a first-mover advantage that can diminish the value of the project for the incumbent. Haushalter et al. (2007) find that when investment within an industry decreases, a firm tends to increase investment if it holds large cash reserves and, if there exists higher interdependence of investment opportunities between the firm and its rivals.

Abdoh and Varela (2018) show that product market competition increases cash flowenhancing investments, but only for financially unconstrained firms. This study supports the disciplinary view of competition, suggesting that product market competition minimizes

<sup>&</sup>lt;sup>12</sup> This study uses the reduction of industry-level import tariffs in China. This data is collected from the Trade Analysis and Information Systems and can be accessed from the following website: http://tariffdata.wto.org/reportersandproducts.aspx.

managerial slack and encourages managers to invest in value-adding activities. In contrast to these studies, which measured investment in physical assets, Boubaker, Dang, and Sassi (2018) examine the relation between product market competition and labor investment efficiency for US firms, and document a negative relationship between these two. Since higher competition curtails profit margin, the managers focus more on short-term performance, which encourages them to lower investment in human capital. Moreover, the negative association between product market competition and labor investment efficiency is more pronounced in more unionized industries.

Extant literature also emphasizes that the relationship between a firm and its supplier is vital for coping with dynamic environments and for enhancing profitability and efficiency (Irvine, Park, & Yıldızhan, 2015; Patatoukas, 2011). Suppliers are encouraged to establish a long term relationship with the customer firm if the later operates in a less competitive environment, because such customers can enjoy higher profit margins and stable cash flows (Hoberg & Phillips, 2016). Consequently, suppliers may require special investments for a particular customer to serve the specific need when the customer operates in concentrated industries. Consistent with the above argume, ts, Larkin (2020) finds that lower competition is associated with a greater reliance by suppliers on major customers.

#### 4.2.3. Product market competition and financing policies

Researchers in financial and industrial economics emphasize that competition in product markets and the capital structure decisions of firms are likely to be interrelated (Showalter, 1999). Prior literature stresses three approaches to explain the relationship between product market comparition and firms' capital structure. According to the 'limited liability' approach, dobt is used strategically by the firms to influence product market competition and predict ', positive association between competition and leverage (Bolton & Scharfstein, 1990; Maksimovic, 1988; Showalter, 1999). On the other hand, 'predation models' point that low-leveraged firms may pose threats to highly-leveraged firms, for example, by launching price-wars (Bolton & Scharfstein, 1990). As a result, predation models predict a negative association between product market competition and leverage. Finally, the 'investment effect' models state that having higher debt sends a negative signal about the viability of future investments, as future cash flows will be used to settle the debt. This negative signal about investment causes a negative effect on the shareholder, i.e., transfers profits from shareholder to the provider of debt. Moreover, owing to asymmetric information, financing through external debt or equity is more expensive than internal financing. Hence, investment effect models suggest a negative association between product market power and leverage.

In this vein, Guney, Li, and Fairchild (2011) reveal a negative relationship between product market competition and leverage which is consistent with the predation models. Further, the authors find that association between product market competition and leverage is moderated by firm size, growth opportunities, and the industry types. Guney et al. (2011) also find that firms tend to adjust their leverage to reach the target leverage level (speed of leverage adjustment phenomenon). MacKay and Phillips (2005), too, find a positive relationship between financial leverage and industry concentration. The authors, following Maksimovic and Zechner (1991), argue that firm's natural hedge, i.e., close approximation to industry median capital-labor ratio, affects its leverage dec sion where firms having technological capability within an industry use less debt and face low cash flow risk than firms having weak technological ability. Mitani (2014) shows that there is a negative relationship between market share of the firm and its hows that there is consistent with the 'investment effects model'. Market leaders use 10 yer leverage to maintain their competitive position if the agency costs of leverage exceed the benefits.

The extent of product market contraction also plays a vital role in firms' choice over short versus long-term debt. It is argued that short-term debt can play a monitoring role by posing the threat of forced liquidation is the firm continues to perform poorly. However, the disciplinary benefit of short-tern dept is reduced when firms operate in a competitive environment: a substitutive effect. Since the monitoring advantages of short-term debt are higher when competition is 'ow. it is expected that short-term debt financing will be higher in concentrated industries. However, Erhemjamts, Raman, and Shahrur (2010) document a nonlinear relationship between short-term debt and industry concentration: an effect stemming from the predatory behavior of rival firms. Predatory theory suggests that rivals can reduce prices aggressively to cut the profit of the incumbent firm, which puts the latter in severe distress and, hence, reduces the ability of the firm to access external financing. Therefore, predation threat increases the liquidation risk when the incumbent accesses short-term debt. Since, the predatory threat is greater in concentrated industries, the predation-related cost of short-term debt is higher in concentrated industries. Hence, short-term debt is positively (negatively) associated with industry concentration at lower (higher) levels of industry concentration. Boubaker, Saffar, and Sassi (2018) document a negative relation between product market competition and bank debt, consistent with the disciplinary role of market competition. The negative association is found to be more pronounced for firms having

greater financial constraints and poor corporate governance quality. Valta (2012) finds that higher competition increases the cost of bank loans, as intensive competition increases the uncertainty of future cash flow, business risk, and default risk of firms. Chod and Lyandres (2011) investigate the strategic reasons for firms to go public when they face competition in the product market. The authors find a positive association between going public and the market share of the firm. Since public firms can diversify their idiosyncratic risk more than their private firm counterparts, the owners of public firms have higher tolerance levels about profit variability. Therefore, public firms can employ more aggressive strategies that affect their competitive position positively, than can private firms.

Research has also examined the relation between trade credit, a major source of shortterm financing, and product market competition. Gonçalves, Schiozer, and Sheng (2018) document a more positive relationship between higher product market power (less competition) customers and quicker credit payment to their suppliers, after the GFC, than before it. Customers operating in a less competitive continuity ironment earn monopoly rents and, hence, were able to reduce the financial constration, faced by their suppliers: an outcome that kept their supply-chain smooth. Fabbri and Klapper (2016) find that suppliers in highly competitive environments offer more and credit and advantageous credit terms to their customers.

#### 4.2.4. Product market competition and payout policies

Predation threat-based theory and agency-based theory are also applicable to examining the relation between, product market competition and corporate payout policies. When there is greater rouge dition in the product market from existing and potential entrants, the firm needs to maintain, high cash reserves to defend itself from predatory threats, hence, a negative relation is predicted. However, agency-based theory predicts that, when there is an abundant free cash flow, managers may engage in cash overinvestment, for example. But the disciplining effect of market competition could force managers to pay the excess cash as dividends: an outcome that could predict a positive relationship between competition and payout policies. On the contrary, the threat of liquidation hypothesis suggests that, in a highly competitive environment, firms are more likely to avoid overspending and projects with negative NPV, since these will make the firms more vulnerable and force them into liquidation. Hence, to avoid such liquidation risk, managers operating in highly competitive firms pay more dividends.

Hoberg et al. (2014) find support for the predation theory, whilst Grullon, Larkin, and Michaely (2019) find support for the liquidation hypothesis using the US large tariff reduction as an exogenous shock. Kao and Chen (2013) document a nonlinear relation between product market competition and dividend payment in Taiwan: a country characterized with low investor protection. The authors reveal that under lower levels of competition, there is a negative association between dividend payment and competition, which is consistent with the substitute agency model. On the other hand, under higher levels of competition, the association between dividend payment and product market competition is positive, which is consistent with the outcome agency model.<sup>13</sup> He (2012) examines the relationship between product market competition and dividend, payment in Japan, and finds a positive association between these two. The author also reveals that firms in highly competitive industries pay more dividends to the minority sha eholder and, thus, competition mitigates firm-level agency problems related to dividence payment. However, the results of this study should be interpreted with caution as the machors did not include the corporate governance determinants of dividend payouts (Umitted variable concerns), as corporate governance and product market competition c. n arrect dividend payouts jointly.

#### **4.3. Section summary**

This section reviews the e is in g literature on the implications of product market competition for asset pricing and real economic decisions. Empirical evidence reveals that increased competition increase: greater cash holdings and the value of cash holdings. However, the evidence on the relation between product market competition and investment and payout decisions is increaclusive. Existing evidence further reveals that product market competition is related to the firm-level cost of capital, idiosyncratic return volatility and stock price crash risk.

#### **5.** Product market competition and corporate governance

Product market competition interacts closely with other corporate governance mechanisms. Various studies document that product market competition acts as an external

<sup>&</sup>lt;sup>13</sup> La Porta, Lopez-de-Silanes, Shleifer, and Vishny (2000) propose that, when the minority shareholders are effective, they push the management for greater dividend payments (outcome agency view). On the other hand, payments of dividends create reputations for the firms, which help to raise capital from the external capital market easily (substitute agency view). But firms operating under strong corporate governance need not pay dividends to gain reputation.

governance mechanism and disciplines management activities. Product market competition is also seen as a factor that reduces managerial slack and boosts efficiency. Hicks (1935) mentions that managers of firms operating in a weak competitive environment enjoy a quiet life, which may result in managerial slack. But the quiet life situation disappears and managers try to reduce costs and slacks once competition rises sharply (Bertrand & Mullainathan, 2003).

There are two streams of argument and conflicting empirical evidence regarding the relationship between product market competition and corporate governance. Some researchers argue that product market competition acts as a substitute for weak corporate governance (Aghion, Dewatripont, & Rey, 1999; Aghion & How<sup>1</sup>tt, 1998; Giroud & Mueller, 2010), while others posit that the relationship is complenent ry (Karuna, 2007). In the following section, we will discuss the effects of product narket competition on various issues relating to firms' governance: agency problems, exclusive compensation, managerial turnover, and corporate social activities.

# 5.1. Product market competition, CEO power, executive compensation, and executive turnover

Previous studies show that CEOs holding more power are linked with poor corporate governance (Bebchuk, Cohen, & Fe Tr 1, 2008; Khanna, Kim, & Lu, 2015). Extending this to the product market competition seture, and using import tariff reduction as a quasi-natural experiment, Jaroenjitrkam et a. (2019) reveal that, in a highly competitive product market, CEOs hold less power (provied by CEO pay slice and CEO pay gap), thereby, confirming a substitutive relation between competition and internal governance. However, the CEO power proxies used in the study are also used to measure firm and industry-level tournament incentives (Sun & Habib, 2020) and, therefore, it is not clear whether the results reflect the relation between competition and tournament incentives. Furthermore, whether less powerful CEOs in the presence of intense competition increase firm value, is not known.

With respect to the product market competition effects on managerial compensation, Karuna (2007) investigates the relation between the two using various proxies for competition, such as market size, product substitutability, and entry cost. Unlike other studies which assume market structure as exogenous, Karuna (2007) models the determinants of competition to account for market structure being endogenous. The study reveals that firms provide higher compensation when competition in the industry is greater. Hence, product

market competition plays a complementary role for corporate governance in the context of compensation payment. On the other hand, Beiner, Schmid, and Wanzenried (2011), using the Swiss context, find that the effect of product market competition on managerial compensation is not linear, rather convex. In a low (high) competitive environment, intense competition leads to a lower (higher) level of compensation. The authors show, theoretically and empirically, that the marginal effect of competition on incentives increases with the degree of competition. Ko, Tong, Zhang, and Zheng (2016) show that competition affects pay-performance sensitivity strongly and positively in dispersedly owned firms compared with family or state-owned firms for four Pacific-Basin countries. The reason for this is that, when a family or concentrated owner controls the firms, hareholders can get more information about the business activities directly (Fan, Wong, & Zhang, 2007), thereby, reducing the need for information from competitive parkets, and generating low payperformance sensitivity. Bakke, Feng, Mahmudi, and 7hu (2020) find causal evidence that, in response to exogenous increases in competition, firms reduce CEO option pay. The finding is consistent with the prediction that intense cor protition encourages managers to take more risk, and firms, therefore, reduce the conventity in managers' compensation by decreasing option compensation. Jung and Subr. me lian (2017) reveal that firm value and CEO compensation are determined join. 1y through competitive CEO-firm matching and competition in the product market.  $\Gamma_{\rm A}$  study also demonstrates that in highly competitive markets where product substitu ability is greater, CEO talent is an influential factor that increases firm value.

Future research should enrich the product market competition and compensation literature by examining whether product market competition affects firms' decisions to implement a tournament tructure (proxied by the pay gap between CEO and top executives). Tournament incentives are structured as a contest between senior executives, whereby, only the best relative performer will win the contest and receive generous remuneration, perks, and privileges (Lazear & Rosen, 1981), and have been proposed as an effective governance mechanism. However, if product market competition is sufficient in disciplining managerial wrongdoings, then tournament incentives may not necessarily fulfill the governance function. Future research should also investigate whether market competition affects the value of CEO inside debt directly (compensating the CEO with a fraction of firm's debt or any security with payoffs similar to debt). Inside debt is considered as one way to mitigate stockholder–debtholder conflicts, but whether the magnitude of CEO inside debt varies in response to changes in market competition has remained unexplored.

Research regarding the effect of product market competition on executive turnover is premised on Schmidt (1997), who shows that competition amplifies the likelihood of liquidation of a firm, and motivates managers to reduce managerial slack, among other actions, to avoid the probability of liquidation risk. But Schmidt (1997) considers this effect to be non-linear, as managers exert more efforts initially with the entry of additional competitors, but as competition becomes very intense, the profitability of the firm is affected. Thus, intensive competition demotivates managers to induce more effort. The total effect of product market competition on managerial efforts and, hence, their probability of retaining or losing the job, remains ambiguous. Examining the newspaper industry in the US, Fee and Hadlock (2000) find that the management turnover rate is higher in competitive markets, as competition increases the probability of liquidation and, thu. m kes the jobs comparatively less attractive, leading to greater turnover. However, the aut lors did not consider the nonlinearity assumption proposed by Schmidt (1997). Neither did they consider the possibility that higher competition can reduce managerial slac.' and motivate managers to increase efficiency. Dasgupta, Li, and Wang (2017) a so study the effect of product market competition on CEO turnover using the 'US moort tariff cut' as a quasi-natural experiment for the period 1974-2005. The authors eveal that higher product market competition increases the sensitivity of forced CFO turnover to firm performance by as much as 43% during initial three years after the triving ut. The results are more pronounced for firms with greater predation risk and for p outers closely related to those of other firms. CEOs face more forced termination in finns with poor corporate governance, while CEOs working in well-governed firms are offered increased compensation. This study supports the 'substitutive view' of product market cor petition, as the competition disciplines managerial actions that are detrimental to firm. A similar result is demonstrated by DeFond and Park (1999). On the flip side of executive turnover, market competition also affects firms' decisions to appoint family versus non-family members as successors. Using data from Taiwan, Yeh and Liao (2020) document a positive relation between product market competition and the likelihood of appointing a non-family member as the successor, as such succession is likely to improve firm performance in a competitive environment.

#### 5.2. Product market competition, market for corporate control, and corruption

Chen, Wang, and Li (2012) examine the relation between product market competition and normal related party transactions (RPTs) and find a significant positive relationship.

Since normal RPTs can decrease the transaction costs of listed firms (efficiency enhancing view), product market competition leads to a greater need for such RPTs to reduce transaction costs. Lee et al. (2019) document a complementary role of product market competition, in that firms operating in more (less) competitive product market have higher (lower) probability of facing corporate takeover in Korea. The evidence is consistent with the argument that competition in product markets reduces information asymmetry and, hence, enables the potential bidder to obtain more information to assess the intrinsic value of the target. Gupta, Misra, and Shi (2017) find that firms operating in more competitive industries experienced significantly larger wealth declines upon announcement of the news of backdating stock option grants: a case of governance failure. This finding is consistent with product market competition acting as a substitute disciplining mechanism.<sup>14</sup> However, the authors should have performed a first stage regression to find out whether firms with strong (poor) corporate governance mechanisms are less (mo. ) likely to engage in backdated employee stock options schemes. This is important, cocause Frankforter, Becton, Stanwick, and Coleman (2012) have found that firms the practice backdated stock option grants are associated with poor corporate governance p. octices. Chhaochharia, Grinstein, Grullon, and Michaely (2017) examine whether product market competition plays a substitute role for mainstream corporate governance by using the SOX-2002 as a quasi-natural experiment setting. The authors find that the pe formance of the firms in less competitive industries with weaker governance pre-SOX, improved significantly post-SOX, than for firms in the competitive industries.

Byun, Lee, and Park (2012) reveal that strong product market competition encourages successful implementation of internal corporate governance for stand-alone firms, but firms associated with a busine's group exhibit better governance under a weak product market competition environment. Business groups have internal products and capital markets of their own, and may not require intense scrutiny from external competition as stand-alone firms do. Kim and Kim (2017) document a positive association between product market competition and material internal control weakness (MICW). The results of the study suggest that product market competition affects the internal governance systems and information producing environment negatively. However, the results should be interpreted cautiously, since the authors use firms' self-reported MCIW proxy (a dummy variable coded 1 if a firm reports

<sup>&</sup>lt;sup>14</sup> In the US, a number of firms engaged in granting backdated stock options to the executives of the firms. By doing this, it would appear that firms grant the option awards at an earlier date when the exercise price was lower than the actual date when the options are approved. This problem was more prevalent before the promulgation of the SOX (Bizjak, Lemmon, & Whitby, 2009).

material weakness in internal control under SOX Section 404, and 0 otherwise). The gross MCIW index is less informative, as this fails to inform which of the internal control component failure is more damaging.

Alexeev and Song (2013), in the context of transitional and developing countries, examine the effect of product market competition on corruption as proxied by the proportion of sales paid to public officials as bribes to get things done. Using the survey data of the World Bank (Productivity and the Investment Climate Private Enterprise Survey: 2001-2005) to measure corruption, the researchers find that the higher the product market competition, the greater the level of corruption. Although it might be expected that the disciplinary role of product market competition would reduce corruption, it is re-ealed that, under a highly competitive environment, cost-reducing corruption increase. The authors show that under intensive product market competition, firms pay more brives where the benefits of such acts exceed the costs.

#### 5.3. Product market competition and corporate social responsibilities (CSR) activities

Numerous studies discuss in deta<sup>1</sup>. the metivation and outcomes of CSR activities (for comprehensive reviews see, Aguinis & Plavas, 2012, 2019). One stream of literature suggests that CSR has a positive impact on firms, which increases competitiveness and legitimacy. Several studies argue the involvement in CSR activities enhance shareholder wealth and firm value. Moreover, CSR activities work for the firm as 'doing well by doing good' and, thus, motivate employees, attract environment-conscious customers and make for efficient resource utilization (Jones, 1995). On the other hand, another stream of literature points out that CSR activities to gain acceptance from stakeholders, such as politicians, regulators, environmentalists, and labor unions, at the expense of shareholder wealth. Thus, CSR activities are done to manage impressions, rather than to maximize shareholder wealth. In this vein, many authors analyze the impact of product market competition, an external governance mechanism, on the CSR activities of firm.

Flammer (2015) is one such study. Exploiting a quasi-natural experiment, i.e., a huge import tariff reduction, and employing a difference-in-difference methodology, the author reveals that import tariff reductions induce firms to engage in more CSR. The plausible reason is that CSR plays a role of competitive strategy in highly competitive environments. Similarly, Leong and Yang (2019) also evidence that in the US product market competition

motivates firms to perform CSR activities. The authors further break down the areas of CSR activities in which higher competition influences firms. The results show that firms facing greater competition engage more in social performance, but perform poorly in community, environment, human rights, and treatment of employees. With respect to employee treatment, the value creation theory argues that employees should be treated properly as they are a vital force for achieving competitiveness and superior firm performance (Wright & McMahan, 1992).<sup>15</sup> Thus, the findings that intense competition affects workforce environment adversely, could be attributed to more competition eroding firm profits, which also affects employee welfare, including their wages. Furthermore, the agency theory view of labor investment suggesting that managers overinvest in employees as an 'empire-building' strategy (Williamson, 1963), may hurt the company in the face of increased competition. Future research should shed light on this issue given the import nce of workforce environment for long-term survival of corporations. On the other hand, Lee, Byun, and Park (2018) find that CSR engagement decreases with an increase in product .narket competition, a finding that is consistent with CSR being considered as an opernvestment by the firm and, hence, being disciplined by competitive threats.

#### 5.4. Section summary

Findings from the prior liter ture suggest that higher product market competition increases managerial compensation and pay-performance sensitivity, although a non-linear relationship has also been decurrented. Evidence is found for market competition acting as both substitute and complement to internal governance practices. Regarding CSR involvement by firm. Fronuct market competition has shown mixed evidence. Product market competition has also been found to affect related party transactions, corporate takeover, corruption, and internal control systems. We encourage future research to understand how product market competition affects the composition of various board subcommittees. Delegating different board functions to distinct committees represents a separation of tasks and functions and has been strongly recommended as a suitable mechanism for improving corporate governance (e.g., Spira and Bender, 2004). However,

<sup>&</sup>lt;sup>15</sup> Chang and Jo (2019) examine the effect of product market competition on employee-friendly practices in the US, and reveal that firms operating in in high (low) competitive environment are more (less) likely to engage in employee-friendly practices. Moreover, the study also documents a positive association between firm value and employee-friendly practices when product market competition is high. The findings support the value creation theory.

little is known whether formation of board sub-committees responds to varying market competition.

#### 6. Discussion and conclusion

The literature on the implications of product market competition has grown substantially over the years. However, there is a paucity of research regarding the determinants of product market competition. We, therefore, encourage future research on the potential determinants of product market competition for both public and private firms nationally and internationally as well. Cross-country study is particularly encouraged as researchers would be able to exploit the variation in institutional clifferences across countries, as possible predictors of market competition.

We discuss the implications of product market con.petition research under three broad themes: accounting, finance, and corporate governance. However, our review clearly shows a lack of conclusive evidence regarding the relation between product market competition and financial reporting quality. For example siveral studies show that higher competition increases disclosure quantity whilst the coposite findings are also documented by other researchers. Similar inconclusive findings are observed for the earnings quality setting as well. Lang and Sul (2014) iden'if at least three challenges linking product market competition, proprietary costs, and the extent of disclosure: lack of consistent theoretical direction, problems in gaugin, various aspects of industry concentration, and identifying disclosures that cause significant proprietary costs. The authors mention that, owing to the lack of a proper theoreti al t ase, it is difficult to interpret the results of Ali et al. (2014), for example. Also, the unava 'ability of a robust measure of product market competition has been identified as a significant problem (Ali et al., 2008; Dhaliwal et al., 2014). Although a textbased measure of product market competition has become increasingly popular, such a measure is primarily confined to firms in the US. Non-US researchers, therefore, generally rely on the HH Index or the Lerner Index to measure competition: measures which are subject to serious shortcomings. We encourage researchers in non-US countries to develop text-based measures of product market competition (for both listed and unlisted private firms) that might be able to overcome the limitations associated with the conventional measures, and may provide richer insights into the implications of product market competition.

Our review of the implications of product market competition in finance reveals that competition affects stock returns, although the evidence remains inconclusive. Empirical

evidence generally suggests that more competition increases cash holdings, the value of cash holdings and investment by the firms. Our review also shows that market competition has implications for cost of capital, idiosyncratic return volatility, stock price crash risk, and the choice of debt and leverage structures. Again, like the studies in accounting, empirical studies in finance also provide mixed evidence on the relation between product market competition and many of the outcome proxies mentioned above. Unless the conflicting findings are resolved to some extent, these academic findings may not help policymakers in framing policies for increasing or decreasing market competition.

Finally, our review on the implications of product market competition as an external governance mechanism shows both substitutive and comprementary associations with internal governance mechanisms. This finding is important, beer use the endogenous choice of the optimal internal corporate governance structure must be made in consideration of the existing market competition. However, many of the reported findings provide conflicting evidence. For example, Karuna (2007) reveals a positive relation between CEO compensation and product market competition using data from the US, whereas Beiner et al. (2011) find a non-linear relation for a sample of Swedish firms. This again reiterates the importance of conducting more cross-country research, since the nature of competition is shaped by institutional differences.

Our review also shows that the bulk of the evidence is confined to non-financial firms, possibly owing to the dimension regarding how product market competition affects the financial reporting and corpo ate governance issues in financial firms. However, we acknowledge that strong governmental regulation in the financial sector may require researchers to adopt non- onventional theories to explain the role of competition. Our review generally shows that most of the studies have adopted agency theory, proprietary costs theory and predation-based theory in developing the testable hypotheses. Given the interdisciplinary characteristics of product market competition research, we stress the importance of utilizing interdisciplinary theories as well.

Finally, we highlight the importance of employing rigorous econometric techniques to establish the causative effect of competition on accounting, finance, and governance outcomes. Over the years, we have seen studies exploiting exogenous shocks, e.g., the import tariff reduction in the US, to establish causality. These studies usually employ difference-indifference (DID) methodology in a natural or quasi natural experiment setting. However, exogenous shocks are not usually available in many research settings and occur naturally

after long intervals of time. However, we believe that appropriate application of the DID method holds great promise for product market competition research. This can be applied in non-US settings as well. For example, researchers using data from China could use the 'Catalogue for the Guidance of Industries for Foreign Investment (2015)' issued by the Ministry of Commerce and National Development and Reform Commission of China, as an exogenous shock that will allow them to examine causal relationships between competition and accounting, finance and governance constructs. The promulgation of the regulation was aimed at increasing competition for some industries.

A shortcoming associated with our review is the deliberate exclusion of studies that used product market competition as a moderating variable (see section 1). This is not to suggest that such tests do not add value to the existing literature, but we made the choice to keep our review manageable. Also, given the conflicting evidence documented in our review, meta-analyses could be employed to quantify the effect sizes and meta-regression techniques could help us identify the sources of such conflicting findings.

#### **Declaration of conflicts of interest**

#### The author(s) declare no conflict of interest

#### References

- Abdoh, H., & Varela, O. (2017). Product market competition, idiosyncratic and systematic volatility. *Journal of Corporate Finance*, 43, 500-513.
- Abdoh, H. A. A., & Varela, O. (2018). Product market competition, cash flow and corporate investments. *Managerial Finance*, 44(2), 207-221.
- Aghion, P., Dewatripont, M., & Rey, P. (1999). Competition, financial discipline and growth. *The Review of Economic Studies*, 66(4), 825-852.
- Aghion, P., & Howitt, P. (1998). A Schumpeterian perspective on growth and competition. In F. Coricelli, M. d. Matteo, & F. Hahn (Eds.), *New Theories in Growth and Development* (pp. 9-49). London: Palgrave Macmillan UK.
- Aguinis, H., & Glavas, A. (2012). What we know and don't know about corporate social responsibility: A review and research agenda. *Journal of Management*, 38(4), 932-968.
- Aguinis, H., & Glavas, A. (2019). On corporate social responsibility, sensemaking, and the search for meaningfulness through work. *Journal of Management*, 45(3), 1057-1086.
- Alchian, A. (1950). Uncertainty, evolution and economic theory. *Journal of Political Economy*, 58(3), 211-21.
- Alexeev, M., & Song, Y. (2013). Corruption and product market competition: An empirical investigation. *Journal of Development Economics*, 103, 154-166.
- Ali, A., Klasa, S., & Yeung, E. (2008). The limitations of industry concentration measures constructed with Compustat data: Implications for finance research. *The Review of Financial Studies*, 22(10), 3839-3871.
- Ali, A., Klasa, S., & Yeung, E. (2014). Industry concentration and corporate disclosure policy. *Journal of Accounting and Economics*, 58(2), 240-264.

- Alimov, A. (2014). Product market competition and the value of corporate cash: Evidence from trade liberalization. *Journal of Corporate Finance*, 25, 122-139.
- Allee, K. D., Do, C., & Sterin, M. (2020). Product market competition and disclosure framing: Evidence from earnings conference calls. *Available at SSRN 3544328*
- Allen, F., & Gale, D. (Eds.). (2000). *Corporate Governance and Competition* (Vol. 23). United Kingdom: Cambridge University Press.
- Almeida, J. E. F. d., & Dalmácio, F. Z. (2015). The effects of corporate governance and product market competition on analysts' forecasts: Evidence from the Brazilian capital market. *The International Journal of Accounting*, 50(3), 316-339.
- Atawnah, N., Balachandran, B., Duong, H.N., Pittman, J., & Podolski, E.J. (2020). *The bright side* of tax avoidance: The case of foreign competition. Working paper, available at SSRN: https://papers.ssrn.com/sol3/papers.cfm?abstract\_id=3584780
- Baggs, J. E. N., & De Bettignies, J.E. (2007). Product market competition and agency costs. *The Journal of Industrial Economics*, 55(2), 289-323.
- Bakke, T. E., Feng, F. Z., Mahmudi, H., & Zhu, C. (2020). For sign competition and CEO riskincentive compensation. Working paper available at SSRN: https://ssrn.com/abstract=3129112
- Balakrishnan, K., & Cohen, D. A. (2011). Product market competition and financial accounting misreporting. In *University of Pennsylvania Working poper*: Citeseer.
- Barney, J. B. (1986). Types of competition and the the ry or strategy: Toward an integrative framework. Academy of Management Review, 11(1), 791-800.
- Bebchuk, L., Cohen, A., & Ferrell, A. (2008). What matic is join corporate governance? *The Review of Financial Studies*, 22(2), 783-827.
- Bebchuk, L. A., & Fried, J. M. (2005). Pay without performance: Overview of the issues. *Journal of Applied Corporate Finance*, 17(4), 8-23.
- Beiner, S., Schmid, M. M., & Wanzenried, G. (2011). Product market competition, managerial incentives and firm valuation. *European Financial Management*, 17(2), 331-366.
- Bénabou, R., & Tirole, J. (2010). Individual an <sup>1</sup> corporate social responsibility. *Economica*, 77(305), 1-19.
- Bertrand, M., & Mullainathan, S. (2003). Enjoying the quiet life? Corporate governance and managerial preferences. *Journal of colitical Economy*, 111(5), 1043-1075.
- Bizjak, J., Lemmon, M., & Whitby, K. (2009). Option backdating and board interlocks. *The Review of Financial Studies*, 22(11) 4-21-4847.
- Bolton, P., & Scharfstein, D. S. (1790). A theory of predation based on agency problems in financial contracting. *The American Economic Review*, 80(1), 93-106.
- Botosan, C. A., & Stanford M. (2005). Managers' motives to withhold segment disclosures and the effect of SFAS Nc 131 on analysts' information environment. *The Accounting Review*, 80(3), 751-772.
- Boubaker, S., Dang, V. A. & Sassi, S. (2018). Product market competition and labor investment efficiency. Working paper. Availabe at http://www.fmaconferences.org/Glasgow/Papers.
- Boubaker, S., Saffar, W., & Sassi, S. (2018). Product market competition and debt choice. *Journal of Corporate Finance*, 49, 204-224.
- Brauer, M. (2006). What have we acquired and what should we acquire in divestiture research? A review and research agenda. *Journal of Management*, 32(6), 751-785.
- Burks, J. J., Cuny, C., Gerakos, J., & Granja, J. (2018). Competition and voluntary disclosure: evidence from deregulation in the banking industry. *Review of Accounting Studies*, 23(4), 1471-1511.
- Bustamante, M. C., & Donangelo, A. (2017). Product market competition and industry returns. *The Review of Financial Studies*, *30*(12), 4216-4266.
- Byun, H. S., Lee, J. H., & Park, K. S. (2012). How does product market competition interact with internal corporate governance?: Evidence from the Korean economy. *Asia-Pacific Journal of Financial Studies*, *41*(4), 377-423.
- Cairney, T. D., & Stewart, E. G. (2015). Audit fees and client industry homogeneity. *Auditing: A Journal of Practice & Theory*, 34(4), 33-57.

- Chang, S., & Jo, H. (2019). Employee-friendly practices, product market competition and firm value. *Journal of Business Finance & Accounting*, 46(1-2), 200-224.
- Chen, C., Li, L., & Ma, M. L. Z. (2014). Product market competition and the cost of equity capital: evidence from China. *Asia-Pacific Journal of Accounting & Economics*, 21(3), 227-261.
- Chen, H., Xing, L., & Zhou, H. (2019). Product market competition and audit fees: evidence from an emerging market. *Asian Review of Accounting*, 28(1), 89-109.
- Chen, S., Wang, K., & Li, X. (2012). Product market competition, ultimate controlling structure and related party transactions. *China Journal of Accounting Research*, 5(4), 293-306.
- Chen, T., Lin, C., & Shao, X. (2018). Globalization and US corporate tax policies: Evidence from Chinese import competition. Working Paper.
- Cheng, P., Man, P., & Yi, C. H. (2013). The impact of product market competition on earnings quality. *Accounting & Finance*, 53(1), 137-162.
- Cheung, J., Kim, H., Kim, S., & Huang, R. (2018). Is the asymmetric cost behavior affected by competition factors? *Asia-Pacific Journal of Accounting & Economics*, 25(1-2), 218-234.
- Chhaochharia, V., Grinstein, Y., Grullon, G., & Michaely, R. (2017) Product market competition and internal governance: Evidence from the Sarbanes–Oxley Act. *Management Science*, 63(5), 1405-1424.
- Chi, J., & Su, X. (2016). Product market threats and the value of corrorate cash holdings. *Financial Management*, 45(3), 705-735.
- Chod, J., & Lyandres, E. (2011). Strategic IPOs and product Parket competition. *Journal of Financial Economics*, 100(1), 45-67.
- Chou, J., Ng, L., Sibilkov, V., & Wang, Q. (2011). And ict market competition and corporate governance. *Review of Development Finance*, 1(<sup>2</sup>), 11<sup>4</sup>-130.
- Choy, S., Lai, T., & Ng, T. (2017). Do tax havens (return firm value? *Journal of Corporate Finance*, 42(1), 198-220.
- Christensen, B. E., Glover, S. M., Omer, T. C., & Shelley, M. K. (2016). Understanding audit quality: Insights from audit professionals at 4 ir vestors. *Contemporary Accounting Research*, 33(4), 1648-1684.
- Clarkson, P. M., Kao, J. L., & Richardson G. D. (1994). The voluntary inclusion of forecasts in the MD&A Section of annual report. Contemporary Accounting Research, 11(1), 423-450.
- Collins, D. W., Kothari, S. P., Shanken, J. & Sloan, R. G. (1994). Lack of timeliness and noise as explanations for the low corner poraneuos return-earnings association. *Journal of Accounting and Economics*, 18(3), 289-0.24.
- Darrough, M. N., & Stoughton, N. M. (1990). Financial disclosure policy in an entry game. Journal of Accounting and Economic 12(1), 219-243.
- Dasgupta, S., Gan, J., & Gao, A. (2010). Transparency, price informativeness, and stock return synchronicity: Theory and evidence. *Journal of Financial and Quantitative Analysis*, 45(5), 1189-1220.
- Dasgupta, S., Li, X., & Walg, A. Y. (2017). Product market competition shocks, firm performance, and forced CEO turnover. *The Review of Financial Studies*, *31*(11), 4187-4231.
- Datta, S., Iskandar-Datta, M., & Sharma, V. (2011). Product market pricing power, industry concentration and analysts' earnings forecasts. *Journal of Banking & Finance*, 35(6), 1352-1366.
- Datta, S., Iskandar-Datta, M., & Singh, V. (2013). Product market power, industry structure, and corporate earnings management. *Journal of Banking & Finance*, 37(8), 3273-3285.
- Dechow, P., Ge, W., & Schrand, C. (2010). Understanding earnings quality: A review of the proxies, their determinants and their consequences. *Journal of Accounting and Economics*, 50(2-3), 344-401.
- DeFond, M. L., & Park, C. W. (1999). The effect of competition on CEO turnover. *Journal of* Accounting and Economics, 27(1), 35-56.
- Dhaliwal, D., Huang, S., Khurana, I. K., & Pereira, R. (2014). Product market competition and conditional conservatism. *Review of Accounting Studies*, 19(4), 1309-1345.
- Dittmar, A., & Mahrt-Smith, J. (2007). Corporate governance and the value of cash holdings. *Journal* of *Financial Economics*, 83(3), 599-634.

- Duru, A., & Reeb, D. (2002). International diversification and analysts' forecast accuracy and bias. *The Accounting Review*, 77 (2), 415-433.
- Ellis, J.A., Fee, C.W., & Thomas, S.E. (2012). Proprietary costs and the disclosure of information about customers. *Journal of Accounting Research*, 50(3), 685–727.
- Erhemjamts, O., Raman, K., & Shahrur, H. (2010). Industry structure and corporate debt maturity. *Financial Review*, 45(3), 627-657.
- Fabbri, D., & Klapper, L. F. (2016). Bargaining power and trade credit. *Journal of Corporate Finance*, 41, 66-80.
- Fama, E.F. (1980). Agency problems and theory of the firm. *Journal of Political Economy*, 88(2), 288- 307.
- Fama, E. F., & Jensen, M. C. (1983). Separation of ownership and control. *The Journal of Law and Economics*, 26(2), 301-325.
- Fan, J. P. H., Wong, T. J., & Zhang, T. (2007). Politically connected CEOs, corporate governance, and Post-IPO performance of China's newly partially privatized firms. *Journal of Financial Economics*, 84(2), 330-357.
- Fee, C. E., & Hadlock, C. J. (2000). Management turnover and product market competition: Empirical Evidence from the U.S. Newspaper Industry. *The Journal of Buriness*, 73(2), 205-243.
- Flammer, C. (2015). Does product market competition foster corporate social responsibility? Evidence from trade liberalization. *Strategic Managem nt J. urnal*, *36*(10), 1469-1485.
- Fosu, S., Danso, A., Agyei-Boapeah, H., Ntim, C. G., & Murinde, V. (2018). How does banking market power affect bank opacity? Evidence from an Alysts' forecasts. *International Review of Financial Analysis*, 60, 38-52.
- Frankforter, S. A., Becton, J. B., Stanwick, P. A., & Cole an, C. (2012). Backdated stock options and boards of directors: An examination of co-amittees, structure, and process. *Corporate Governance: An International Review*, 20(5), 56'-574.
- Fresard, L., & Valta, P. (2015). How does composite investment respond to increased entry threat? *Review of Corporate Finance Studi* 5, 5(1), 1-35.
- Fudenberg, D., & Tirole, J. (1984). The fat-ca. effect, the puppy-dog ploy, and the lean and hungry look. *American Economic Review* 74, 361–66.
- Gago Rodríguez, S., Guo, B., Marquez Ples, as, G., & Núñez Nickel, M. (2020). Causal ambiguity: shape-flip between product m.r'.et competition at industry level and voluntary disclosure. *Accounting and Business Rese. "cn*, 1-34.
- Gaspar, J.-M., & Massa, M. (2006). 'diosyncratic volatility and product market competition. *Journal* of Business, 79(6), 3125-5152.
- Giroud, X., & Mueller, H. M. (2010). Does corporate governance matter in competitive industries? Journal of Financial Fee matters, 95(3), 312-331.
- Giroud, X., & Mueller, H. M. (2011). Corporate governance, product market competition, and equity prices. *The Journ*. *1 of Finance*, *66*(2), 563-600.
- Gong, G., Louis, H., & Su I, A. X. (2008). Earnings management and firm performance following open-market repurchases. *The Journal of Finance*, 63(2), 947-986.
- Gonçalves, A. B., Schiozer, R. F., & Sheng, H. H. (2018). Trade credit and product market power during a financial crisis. *Journal of Corporate Finance*, 49, 308-323.
- Grullon, G., Larkin, Y., & Michaely, R. (2019). Dividend policy and product market competition. *Available at SSRN 972221*
- Gu, L. (2016). Product market competition, R&D investment, and stock returns. *Journal of Financial Economics*, 119(2), 441-455.
- Gu, F., & Wang, W. (2005). Intangible assets, information complexity, and analysts' earnings forecasts. *Journal of Business Finance & Accounting*, 32 (9–10), 1673–1702.
- Guney, Y., Li, L., & Fairchild, R. (2011). The relationship between product market competition and capital structure in Chinese listed firms. *International Review of Financial Analysis*, 20(1), 41-51.
- Guo, Y., Jung, B., & Yang, Y. S. (2019). On the nonlinear relation between product market competition and earnings quality. *Accounting and Business Research*, 49(7), 818-846.
- Gupta, A., Misra, L., & Shi, Y. (2017). Product-market competitiveness and investor reaction to corporate governance failures. *International Review of Economics & Finance*, 48, 134-147.

- Gupta, K., Banerjee, R., & Onur, I. (2017). The effects of R&D and competition on firm value: International evidence. *International Review of Economics & Finance*, *51*, 391-404.
- Haleblian, J., Devers, C. E., McNamara, G., Carpenter, M. A., & Davison, R. B. (2009). Taking stock of what we know about mergers and acquisitions: a review and research agenda. *Journal of Management*, 35(3), 469-502.
- Hanlon, M., & Heitzman, S. (2010). A review of tax research. *Journal of Accounting and Economics*, 50(2), 127-178.
- Harris, M. S. (1998). The association between competition and managers' business segment reporting decisions. *Journal of Accounting Research*, *36*(1), 111-128.
- Hart, O. D. (1983). The market mechanism as an incentive scheme. *The Bell Journal of Economics*, 14(2), 366-382.
- Haushalter, D., Klasa, S., & Maxwell, W. F. (2007). The influence of product market dynamics on a firm's cash holdings and hedging behavior. *Journal of Financial Economics*, 84(3), 797-825.
- Haw, I.-M., Hu, B., Lee Jay, J., & Wu, W. (2016). The impact of industry concentration on the market's ability to anticipate future earnings: International evidence. *International Journal of Accounting & Information Management*, 24(4), 443-475.
- Haw, I.-M., Hu, B., & Lee, J. J. (2015). Product market competition a d analyst forecasting activity: International evidence. *Journal of Banking & Finance*, 56, 42, 50.
- Haw, I.-M. G., Ho, S. S. M., Li, Y., & Zhang, F. (2015). Pro luct Market Competition, Legal Institutions, and Accounting Conservatism. Journa: of International Accounting Research, 14(2), 1-39.
- He, W. (2012). Agency problems, product market convertion and dividend policies in Japan. Accounting & Finance, 52(3), 873-901.
- Healy, P., Serafeim, G., Srinivasan, S., & Yu, G. (2017) Market competition, earnings management, and persistence in accounting profitability a world the world. *Review of Accounting Studies*, 19(4), 1281-1308.
- Hertzel, M. G. (1991). The effects of stock put chases on rival firms. *The Journal of Finance*, 46(2), 707-716.
- Hicks, J. R. (1935). Annual survey of eco. omic theory: The theory of monopoly. *Econometrica*, 3(1), 1-20.
- Hoberg, G., & Phillips, G. (2010). R:a and financial industry booms and busts. *Journal of Finance*, 65(1), 45-86.
- Hoberg, G., Phillips, G., & Pra'sh. 'a, N. (2014). Product market threats, payouts, and financial flexibility. *The Journal of Finance*, 69(1), 293-324.
- Hoberg, G., & Phillips, G. (2016). Text-based network industries and endogenous product differentiation. Journal of Political Economy, 124(5), 1423-1465.
- Hodder, L., Hopkins, P., & Wood, D. (2008). The effect of financial statement and informational complexity on an 'lysis' cash flow forecasts. *The Accounting Review*, 83(4), 915-956.
- Hodges, C. W., Lin, B., & J in, C.-M. (2014). Product market competition, corporate governance, and cost of capital. *Applied Economics Letters*, 21(13), 906-913.
- Holmstrom, B. (1982). Moral hazard in teams. The Bell Journal of Economics, 13(2), 324-340.
- Hou, K., & Robinson, D. T. (2006). Industry concentration and average stock returns. *The Journal of Finance*, *61*(4), 1927-1956.
- Huang, H.-H., & Lee, H.-H. (2013). Product market competition and credit risk. *Journal of Banking & Finance*, *37*(2), 324-340.
- Huang, Y., Jennings, R., & Yu, Y. (2017). Product market competition and managerial disclosure of earnings forecasts: Evidence from import tariff rate reductions. *The Accounting Review*, 92(3), 185-207.
- Imhof, M. J., Seavey, S. E., & Watanabe, O. V. (2018). Competition, proprietary costs of financial reporting, and financial statement comparability. *Journal of Accounting, Auditing & Finance,* online early.
- Irvine, P. J., Park, S. S., & Yıldızhan, Ç. (2015). Customer-base concentration, profitability, and the relationship life cycle. *The Accounting Review*, *91*(3), 883-906.
- Irvine, P. J., & Pontiff, J. (2008). Idiosyncratic return volatility, cash flows, and product market competition. *The Review of Financial Studies*, 22(3), 1149-1177.

- Jagannathan, R., & Srinivasan, S. B. (1999). Does product market competition reduce agency costs? *North American Journal of Economics and Finance, 10*(2), 387-399.
- Jain, B. A., Li, J., & Shao, Y. (2013). Governance, product market competition and cash management in IPO firms. *Journal of Banking & Finance*, *37*(6), 2052-2068.
- Jaroenjitrkam, A., Yu, C.-F., & Zurbruegg, R. (2019). Does market power discipline CEO power? An agency perspective. *European Financial Management*, 1-19.
- Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3(4), 305-360.
- Jiang, F., Kim, K. A., Nofsinger, J. R., & Zhu, B. (2015). Product market competition and corporate investment: Evidence from China. *Journal of Corporate Finance*, *35*, 196-210.
- Jones, T. M. (1995). Instrumental stakeholder theory: A synthesis of ethics and economics. Academy of Management Review, 20(2), 404-437.
- Jung, Hae W., & Subramanian, A. (2017). CEO talent, CEO compensation, and product market competition. *Journal of Financial Economics*, 125(1), 48-71.
- Kao, L., & Chen, A. (2013). How product market competition affects dividend payments in a weak investor protection economy: Evidence from Taiwan. *Pacific-Lasin Finance Journal*, 25, 21-39.
- Karuna, C. (2007). Industry product market competition and numagerial incentives. Journal of Accounting and Economics, 43(2), 275-297.
- Khanna, V., Kim, E. H., & Lu, Y. A. O. (2015). CEO connec edness and corporate fraud. *The Journal* of *Finance*, 70(3), 1203-1252.
- Kim, J-B., Li, Y., & Zhang, L. (2011). CFOs versus CEC :: equity incentives and crashes. *Journal of Financial Economics*, 101, 713–730.
- Kim, S. M., & Kim, Y. (2017). Product market corp vition on the effectiveness of internal control. Asia-Pacific Journal of Accounting & Eco 20, 24(1-2), 163-182.
- Ko, H.-C. A., Tong, Y., Zhang, F., & Zher., C (2016). Corporate governance, product market competition and managerial incentives: Evidence from four Pacific Basin countries. *Pacific-Basin Finance Journal*, 40, 491-502.
- Kothari, S. P., Laguerre, T. E., & Leone, A. J. (2002). Capitalization versus expensing: Evidence on the uncertainty of future earning: from capital expenditures versus R&D outlays. *Review of Accounting Studies*, 7(4), 355-287.
- Kubick, T. R., Lynch, D. P., Mayberry, M. A., & Omer, T. C. (2015). Product market power and tax avoidance: Market leader, minicking strategies, and stock returns. *The Accounting Review*, 90(2), 675-702.
- La Porta, R., Lopez-de-Silanes, T. Shleifer, A., & Vishny, R. W. (2000). Agency problems and dividend policies around the world. *The Journal of Finance*, 55(1), 1-33.
- Laksmana, I., & Yang, Y.W (2014). Product market competition and earnings management: Evidence from a. creationary accruals and real activity manipulation. *Advances in Accounting*, 30(2), 263-275.
- Laksmana, I., & Yang, Y.W. (2015). Product market competition and corporate investment decisions. *Review of Accounting and Finance, 14*(2), 128-148.
- Lang, M., & Sul, E. (2014). Linking industry concentration to proprietary costs and disclosure: Challenges and opportunities. *Journal of Accounting and Economics*, 58(2), 265-274.
- Larkin, Y. (2020). Reliance on major customers and product market competition. *Finance Research Letters*, 101436.
- Lazear, E.P., & Rosen, S. (1981). Rank-order tournaments as optimum labor contracts. *Journal of Political Economy*, 89, 841-864.
- Lee, D., & Wen, H. (2020). Financial analyst coverage for U.S. firms facing foreign competition: Evidence from trade liberalization. *Journal of International Financial Management & Accounting*, 31(2), 139-168.
- Lee, J. H., Byun, H. S., & Park, K. S. (2018). Product market competition and corporate social responsibility activities: Perspectives from an emerging economy. *Pacific-Basin Finance Journal*, 49, 60-80.
- Lee, J. H., Byun, H. S., & Park, K. S. (2019). How does product market competition affect corporate takeover in an emerging economy? *International Review of Economics & Finance*, 60, 26-45.

- Lee, J. J. (2018). Economic determinants of price informativeness about future earnings. *Journal of Contemporary Accounting & Economics*, 14(1), 83-102.
- Lemma, T. T., Negash, M., Mlilo, M., & Lulseged, A. (2018). Institutional ownership, product market competition, and earnings management: Some evidence from international data. *Journal of Business Research*, 90, 151-163.
- Leong, C. K., & Yang, Y. C. (2019). Market competition and firms' social performance. *Economic Modelling*, online early.
- Lerner, A. P. (1934). The concept of monopoly and the measurement of monopoly power. *The Review* of Economic Studies, 1(3), 157-175.
- Leventis, S., Weetman, P., & Caramanis, C. (2011). Agency costs and product market competition: The case of audit pricing in Greece. *The British Accounting Review*, 43(2), 112-119.
- Li, F., Lundholm, R., & Minnis, M. (2013). A measure of competition based on 10-K filings. *Journal* of Accounting Research, 51(2), 399-436.
- Li, S., & Zhan, X. (2019). Product market threats and stock crash risk. *Management Science*, 65(9), 4011-4031.
- Li, W. L., & Zheng, K. (2017). Product market competition and cost stickiness. *Review of Quantitative Finance and Accounting*, 49 (2), 283-313.
- Li, X. (2010). The impacts of product market competition on the quantity and quality of voluntary disclosures. *Review of Accounting Studies*, 15(3), 663-711.
- Liao, T.-L., & Lin, W.-C. (2016). Product market compet tion and earnings management around open-market repurchase announcements. *Internation of Review of Economics & Finance, 44*, 187-203.
- Lyandres, E., & Palazzo, B. (2016). Cash holdings, completing, and innovation. *Journal of Financial* and Quantitative Analysis, 51(6), 1823-1861.
- MacKay, P., & Phillips, G. M. (2005). How does indestry affect firm financial structure? The Review of Financial Studies, 18(4), 1433-146<sup>e</sup>.
- Maksimovic, V. (1988). Capital structure i<sup>'</sup> rer eated oligopolies. *The RAND Journal of Economics*, 19(3), 389-407.
- Maksimovic, V., & Zechner, J. (1991). Lobt, agency costs, and industry equilibrium. *The Journal of Finance*, 46(5), 1619-1643.
- Manne, H. (1965). Mergers and the mark :t <sup>+</sup>or corporate control. *Journal of Political Economy*, 73(2), 110-120.
- Markarian, G., & Santalo', J. (2014). Product market competition, information and earnings management. Journal of Buriness Finance & Accounting, 41(5-6), 572-599.
- Mattei, M. M., & Platikanove P. (2017). Do product market threats affect analyst forecast precision? *Review of Accountir*, Sumies, 22(4), 1628-1665.
- Mitani, H. (2014). Capital struc ure and competitive position in product market. *International Review* of Economics & 13 ance, 29, 358-371.
- Mosakowski, E. (1997). St ategy making under causal ambiguity: Conceptual issues and empirical evidence. *Organization Science*, 8(4), 414-442.
- Nalebuff, B. J., & Stiglitz, J. E. (1983). Information, competition, and markets. *American Economic Review*, 73(2), 278.
- Palmrose, Z. V., & Scholz, S. (2004). The circumstances and legal consequences of non-GAAP reporting: Evidence from restatements. *Contemporary Accounting Research*, 21(1), 139-180.
- Patatoukas, P. N. (2011). Customer-base concentration: Implications for firm performance and capital markets. *The Accounting Review*, 87(2), 363-392.
- Peress, J. (2010). Product market competition, insider trading, and stock market efficiency. *The Journal of Finance*, 65(1), 1-43.
- Porter, M. (1980). *Competitive strategy: Techniques for analyzing industries and companies*. New York: Free Press.
- Raith, M. (2003). Competition, risk, and managerial incentives. *American Economic Review*, 93(4), 1425-1436.
- Rajgopal, S., & Venkatachalam, M. (2011). Financial reporting quality and idiosyncratic return volatility. *Journal of Accounting and Economics*, 51(1), 1-20.

- Ryu, D. (2019). The US–Korea free trade agreement as a shock to product market competition: Evidence from the Korean stock market. *Finance Research Letters*, 101296.
- Sabherwal, S., & Thai, T. (2019). Product market competition and corporate cash holdings: A crosscountry evidence. *Available at SSRN* 3475431
- Safdar, I. (2016). Industry competition and fundamental analysis. *Journal of Accounting Literature*, 37, 36-54.
- Scharfstein, D. (1988). Product-market competition and managerial slack. *The RAND Journal of Economics*, 19(1), 147-155.
- Schmidt, K. M. (1997). Managerial incentives and product market competition. *The Review of Economic Studies*, 64(2), 191-213.
- Sharma, V. (2011). Stock returns and product market competition: beyond industry concentration. *Review of Quantitative Finance and Accounting*, *37*(3), 283-299.
- Shi, G., Sun, J., & Zhang, L. (2018). Product market competition and earnings management: A firmlevel analysis. *Journal of Business Finance & Accounting*, 45(5-6), 604-624.
- Shleifer, A., & Vishny, R. W. (1997). A Survey of Corporate Gov mance. The Journal of Finance, 52(2), 737-783.
- Showalter, D. (1999). Strategic debt: evidence in manufacturing. *(nternational Journal of Industrial Organization, 17*(3), 319-333.
- Spira, L.F., & Bender, R. (2004). Compare and contrast: Per pectives on board committees. *Corporate Governance: An International Review*, 12 (4): 485–99.
- Stigler, G. (1958). The economics of scale. Journal of Lav und Lconomics, 1, 54-71.
- Sun, L., & Habib. A. (2020). Determinants and consequences of tournament incentives: A survey of the literature in accounting and finance. *Presearch in International Business and Finance*, forthcoming.
- Stoughton, N., Wong, K. P., & Yi, L. (2017). Inv st. ver. efficiency and product market competition, Journal of Financial and Quantitative Ana<sup>1</sup>, vis, 52(6), 2611-2642.
- Tranfield, D., Denyer, D., & Smart, P. (2 03) Towards a methodology for developing evidenceinformed management knowledge by mean. of systematic review. *British journal of management*, 14(3), 207-222.
- Valta, P. (2012). Competition and the cost of tebt. Journal of Financial Economics, 105(3), 661-682.
- Verrecchia, R. E. (1983). Discretionary d'sc osure. Journal of Accounting and Economics, 5, 179-194.
- Wang, T. (2019). Product market on peution and efficiency of corporate tax management. Asian Review of Accounting, 27(2), 247-272.
- Williamson, O. (1963). Manager, <sup>1</sup> discretion and business behavior. *American Economic Review*, 53, 1032–57.
- Wright, P. M., & McMahan C C. (1992). Theoretical perspectives for strategic human resource management. Journal of Management, 18(2), 295-320.
- Xu, J. (2012). Profitability and capital structure: Evidence from import penetration. Journal of Financial Economics, 106(2), 427-446.
- Yeh, Y-H., & Liao, C-C. (2020). The impact of product market competition and internal corporate governance on family succession. *Pacific Basin Finance Journal*, online early.
- Yen, J.-C., Li, S.-H., & Chen, K.-T. (2016). Product market competition and firms' narrative disclosures: evidence from risk factor disclosures. *Asia-Pacific Journal of Accounting & Economics*, 23(1), 43-74.
- Yuequan, W., & Chui, A. C. W. (2015). Product Market Competition and Audit Fees. *Auditing: A Journal of Practice & Theory*, 34(4), 139-156.
- Zhang, R. (2018). Product market competition, competitive strategy, and analyst coverage. *Review of Quantitative Finance and Accounting*, 50(1), 239-260.

<b>TABLE 1.1</b> .	. Product market	competition	(PMC) and	financial r	eporting o	juality –	Summary	Tables
			( -)		· · · · · · · · · · · · · · · · · · ·			

Author(s)	Research Question(s)	Sample/countries	Justifica tion for sample selection	Measurement of PMC	Findings	Economic Significance
Li (2010)	The influence of PMC on the voluntary disclosure decisions of firms.	US: 21,033 firm- year observations during 1998-2006	Yes	Measure of PMC is constructed through conducting principal component analysis.	Disclosure <i>quantity</i> decreases when the firms face competition from existing competitors bu increases in the case of competitive threat from potential entrants. Disclosure <i>quaity</i> increases from increased competition as firms provide conservative profit forecasts and reduce the pessimism in investment forecasts.	A one standard deviation (SD) increase in competition from existing rivals decreases profit forecasts by 5.6%. A one SD increase in competition from potential entrants decreases investment forecasts by 7.7%.
Cheng et al. (2013)	The association between PMC and earnings quality.	US: 4,989 firm- year observations between 1996- 2005.	No	US Census HH Index	This study documents a positive association between PMC and earnings quality. Additionally, earnings of firms operating in concentrated and heterogeneous industries are associated with a lower level of earnings quality, than earnings of firms operating in concentrated and homogeneous industries.	No
Datta et al. (2013)	The impact of product market pricing power on earnings management.	US: 43,628 f rm year obset vations lietwisen 1967- 2619	No	Industry adjusted PCM; industry median PCM; four- firm ratio; number of firms in the industry	Firms having dominant pricing power or facing lower competition in the product market are less likely to engage in discretionary accrual management.	A one standard deviation change in the product market pricing power from its median value increases discretionary accruals by 14% of lagged assets.
Ali et al. (2014)	The relationship between PMC and frequency & informativeness of voluntary disclosure.	US: 356 industries for the years 1995-2009	Yes	US Census HH Index and US Census four-firm ratio	Firms in low competitive industries are more likely to disclose fewer management earnings forecasts.	No
Markarian and Santalo´ (2014)	The relationship between PMC and earnings management.	US: 69,445 firm- year observations during 1989–2011	Yes	HH Index, Import penetration and industry tariff protection (US Tariff Database 1989-2001)	PMC <i>increases</i> both AEM and REM. This relationship is more pronounced when the firms underperform their rivals and when the firm operates in an opaque information environment.	One SD increase in competition increases AEM by 4% to 18%.

Laksmana and Yang (2014)	The effect of PMC on earnings management.	US: 85,213 firm- year observations during 1988- 2007.	No	HH Index	PMC <i>decreases</i> AEM as well as REM. Firms operating in concentrated industries engage in earnings management to keep consistency with prior year's earnings.	No
Dhaliwal et al. (2014)	The impact of PMC on conditional accounting conservatism.	US: 71,627 firm- year observations from 1975-2005.	Yes	Hoberg and Phillips (2010) fitted HH Index, HH Index	The authors reveal a positive association between PMC and conditional accounting conservatism. These findings are consistent with the 'strategic view', supporting the dea that strategic considerations $\alpha$ termine the relationship between P AC and conditional conservation.	A one SDEV increase in competition increases conditional conservatism by about 2%.
Healy et al. (2014)	The effect of earnings management and competition in product, capital, labor markets on mean reversion in accounting return.	International: 48,465 firms comprised from 49 countries for the period 1997- 2008.	No	Country level measure of PMC measured by IMD World Competitiv mess Year oo.	T' e s ndy shows that countries with Intensive PMC exhibit faster mean revision o accounting return internationally. However, for countries characterized with high earnings management propensity, mean reversion is much slower for profitable films but quicker for loss- making firms.	Holding firm and industry characteristics constant, an inter- quartile increase in home country PMC increases mean reversion for an average firm by approximately 10.9%.
Haw et al. (2015)	The effect of PMC on accounting conservatism.	International: 84,835 firm-year observations from 38 countries during 1979- 2007.	Ye	HH Index	The results of the study show that when the countries' legal institutions are strong (weak), PMC positively (negatively) affects the degree of accounting conservatism.	No
Haw et al. (2016)	The impact of PMC and intra-industry information transfer on FERC.	In er. atic ial: 63,- 94 tirm-year ocservations across 38 countries between 1990-2006	Yes	HH Index	Lower (higher) PMC increases (decreases) the FERC. Moreover, intra-industry information transfer significantly explains the relationship between PMC and FERC.	No
Safdar (2016)	Whether PMC affects accounting-based fundamental analysis in predicting firm performance	US: 136,102 firm- year observations between 1973– 2015	No	HH Index, Hoberg and Phillips (2010) Fitted HH Index, Hoberg and Phillips (2016) text-based measure	The study documents that accounting- based fundamental analysis, i.e., Piotroski's F-score, can predict firm's stock return and profitability more (less) effectively under low (high) PMC environment.	The average difference in one-year size adjusted BH returns of strong versus weak fundamentals firms within high (low) competition industries is 7% (13%), respectively.
Yen et al.	The effect of PMC on	US: 8,509 firm-	Yes	US Census four-	Amount of narrative risk disclosure is	No

(2016)	narrative risk disclosures.	year observations for the period 2006-2009.		firm ratio	more (less) by firms operating in less (more) competitive industries, but the risk disclosure exhibits more similarity with their rivals.	
Huang et al. (2017)	Impact of PMC on managerial earnings forecasts disclosure.	US: A total of 59,961 firm-year observations with 11,752 being affected by import tariff reduction during 1994- 2011.	Yes	Import tariff reductions	Tariff reduction which increases PMC is linked with a reduction in managerial earnings forecasts. The relationship is more pronounced when the managerial forecasts increase the probability of incurring greater proprietary costs.	Managerial earnings forecasts are reduced by 26% for the firms affected through tariff reduction.
Burks et al. (2018)	Impact on PMC on voluntary disclosure choices.	US: 1,179 bank- year observations during 1994-2000	No	Banking deregulation	T' e s udv änds a positive relationship t et veen PMC and voluntary disclosures (v ress releases). As the deregulation decreased the entry barriers, the tone of the voluntary disclosure became more negative to discourage the potential entrants.	Approximately 12 press releases are issued by the sample bank per year.
Imhof et al. (2018)	The effect of PMC on financial statement comparability	U.S: 15,945 firm- year observations for the period 1997-2011	No	Ho erg and Phillips (2010) fitted HH Index, Hoberg et al. (2014) text-based measure	Higher (lower) PMC decreases (increases) financial statement comparability. This result is more pronounced in high information asymmetry environments.	Changes in PMC (fluidity) from the first to the third quartile decreases financial statement comparability by approximately 6%.
Lee (2018)	The effect of product market power on the informativeness of future earnings (FERC).	US: 68,604 observation during 1975– 2005.	Yes	HH Index, price- cost margin	Firms having higher product market power exhibit greater FERC. This study also reveals that firms having long term investment, i.e., capital expenditure, R&D, experience low FERC.	FERC increases 12.8% from lowest pricing power firm to highest pricing power firm.
Shi et al. (2018)	The effect of PMC on earnings management.	US: 19,778 firm- year observations for the period 1995-2007.	No	Li et al. (2013) text- based measure	PMC increases accrual-based earnings management (AEM) but decreases real earnings management (REM). Managerial career concerns and pressures to meet expected earnings drive firms in more competitive industries to engage in more AEM.	No
Lemma et al. (2018)	The effect of PMC and institutional ownership on earnings management.	International: 139,906 firm-year observations	No	HHI Index, Lerner Index, and inverse of the number of	AEM declines as industry concentration goes up when proxied by HH. The two other PMC measures are insignificant.	A one standard deviation increase in HHI leads to a 0.7% decrease in the AEM scaled rank of the median

		from 41 countries during 1995– 2016.		firms in an industry	However, the REM increases as industry concentration goes up using two of the three PMC proxies, suggesting that competition is an effective disciplining mechanism in curbing REM.	ranked firm. The corresponding figure from a one standard deviation increase in HHI is an increase of 3.5% in REM.
Guo et al. (2019)	The impact of PMC on earnings quality.	US: 52,332 firm- year observations between 1988– 2015.	Yes	HH Index	The authors find a nonlinear relationship, i.e., an inverted U-shape, between PMC and earnings quality.	The turning point based on a composite measure of PMC is at approximately the 27th percentile of competition among the firm-years
Gago Rodríguez et al. (2020)	PMC and voluntary disclosure conditional on the moderating role of causal ambiguity.	US: 55,910 quarterly observations between 2002- 2015.	No	Price-cost margin	When firms' cat al ambiguity is low, the relationship bet veon PMC and disclosure takes an ive to U-shape, whereas, high c. isa ambiguity makes the relationship U- hayed.	No

TABLE 1.2. Product market competition and analysts forecasting activities- Summary 12 Vies								
Author(s)	Research Question(s)	Sample/countries	Justifica tion for sample sel .ct/_u	Mear are. nent of P. (C	Findings	Economic Significance		
Datta et al. (2011)	The relation between product market pricing power and analysts' forecast properties.	US: 570,099 firm- month observations during 19, 5–2 '05	Yes	HH Index, Industry- adjusted price-cost margin	Analysts' forecast accuracy increases (decreases) and forecast optimism decreases (increases) when PMC is lower (higher).	When market pricing power (proxied by Lerner's index) declines by one-SD from its mean value, the forecast accuracy worsens 2.33 times. Forecast bias, on the other hand, decreases by 33%.		
Almeida and Dalmácio (2015)	The interaction effect of PMC and corporate governance on analysts' forecast accuracy.	Rra il: 359 firm- year observation for the period 2001-2008.	Yes	HH Index	Analysts' forecast accuracy is higher for firms operating in highly competitive product market as well as having strong corporate governance.	No		
Haw et al. (2015)	The relation between PMC, analyst following and the properties of analyst forecasts.	International: 53,226 firm-year observations from 37 countries during 1990–2008	No	HH Index, Industry- adjusted price-cost margin	Firms in highly concentrated industries and having dominant pricing power are followed by greater number of analysts and are associated with higher forecast accuracy and lower forecast dispersion.	No		
Mattei and Platikanova	The role of PMC on analysts' forecast	US: 25,039 firm- year	No	Hoberg et al. (2014) text-based measure	Analyst forecast precision decreases (increases) with the increase (decrease) in	A one standard-deviation change in product fluidity decreases analysts'		

(2017)	precision.	observations between 1997- 2013			product market fluidity.	forecast accuracy by 4.8%.
Zhang (2018)	The effect of PMC and peer firms' strategic interactions on analyst following.	US: 10,677 firm- year observations for the year 1982- 2012.	No	HH Index, US Census HH Index, Hoberg and Phillips (2016) text-based measure	The study reveals that higher competition increases analyst following consistent with strong competition allowing more information to pass freely within the firms selling similar products, lowering information processing costs, and increasing analy, t followings.	No
Fosu et al. (2018)	The impact of PMC on bank opacity and analysts' forecast error.	US: 15,745 bank- year observations during 1986- 2015.	No	Lerner Index	Higher market, over reduces analysts' forecast erread dispersion. Moreover, tl's result is more pronounced during . Ou 7-2009 GFC regime. Banks having h gher market power are linked with low bank opacity.	A one standard deviation increase in the Lerner index decreases analysts' forecast error by 14.81–17.23 basis point.
Lee and Wen (2019)	The effect of PMC on analysts' coverage.	US: 1,074 firm year observations between 1984- 2005	Yes	Large in pc + tar ff educ ion during 1 7° +-2005	Analyst coverage decreases in the case of competitive threat from foreign rivals, consistent with the notion that a significant reduction in import tariff rates creates greater uncertainty in financial markets, thereby, increasing information processing costs by analysts.	The odds of an increase in analyst coverage are 33% lower for the treatment group (experiencing significant import tariff reduction) than the control group (little change in the rate).

					costs by analysts.		
TABLE 1.3. Product market competition and audit fex - S unmary Tables							
Author(s)	Research Question(s)	Sa h. 'o/ Jountries	Justifica tion for sample selection	Measurement of PMC	Findings	Economic Significance	
Leventis et al. (2011)	The impact of PMC on audit fees.	Greece: 174 group companies' data as of 31 December 2002.	No	HH Index, Four- firm concentration ratio.	Higher (lower) PMC reduces (increases) audit fees and audit efforts, i.e., audit hours. Thus, PMC reduces agency cost.	No	
Yuequan and Chui (2015)	The effect of PMC on audit fees.	US: 4,615 firm- year observations for the period 2000-2009.	Yes	US Census HH Index, price-cost margin	Audit fees are higher when the firms operate in more competitive industry. However, firms having dominant product pricing power pay lower audit fees within	No	

Cairney and Stewart (2015)	Examine the effect of client industry homogeneity on audit fees.	US: 36,422 firm- year observations during 2004- 2010.	No	Industry homogeneity is measured by the correlation of year- to-year operating expenses among industry members	an industry. The study documents that industry homogeneity decreases audit fees. Further, industry specialist auditors also provide audit services with a lower fee in homogenous industries.	Clients in more homogenous industries have 10 percent lower audit fees.
Chen et al. (2019)	The effect of PMC on audit fees.	China: 6,709 firm-year observations between 2006– 2011.	Yes	HH Index, number of listed firms within an industry, and PCM.	There is a negative association between PMC and audit res. Firms possessing competitive addan age, i.e., pricing power, tend 'o part res audit fees.	No

### TABLE 1.4. PMC and miscellaneous reporting issues – Summary Tables

TABLE 1.4. PMC and miscellaneous reporting issues – Summary Tables								
Author(s)	Research Question(s)	Sample/ countries	Justificati on for sample selec 10	Aeas are vent of FAC	Findings	Economic Significance		
Kubick et al. (2015)	The effect of product market power on tax avoidance activities of the firm	US: 25,800 firm-year observations during 19. <sup>3</sup> - 2010	N <sub>n</sub>	Price-cost margin	Higher (lower) product market power is associated with greater (lesser) tax avoidance. Moreover, the firms having weaker competitive positions follow the industry leader in terms of tax avoidance activities.	No		
Li and Zheng (2017)	The relation between PMC and cost stickiness.	US: 50,735 firm-year observations for the period 1996–2009.	No	Li et al. (2013) text- based measure, Hoberg and Phillips (2010) text-based measure.	The authors find that PMC increases cost stickiness. They further show that the positive association is more pronounced for firms having strong financial positions and optimistic forecasts of demand.	In a period of sales fall, a firm in the most competitive product market cuts operating costs by 0.107 percentage point less than a firm in the least competitive product market.		
Cheung et al. (2018)	The relationship between PMC and cost stickiness.	US: 172,427 firm-year observations across 38 countries during 1990-2012.	No	Entry costs, product differentiation, market size	Firms having higher entry costs, product differentiation and larger market share exhibit greater cost stickiness.	When sales decrease by 1%, SG&A costs decrease by 0.38% when evaluated at the mean values of the competition variables.		

Wang (2019)	The effect of PMC on	US: 54,745	Yes	HH Index, four-firm	The author shows that firms having higher	The average cash effective tax rate of
	corporate tax planning	firm-year		ratio	competitive pressure exhibit greater	firms in competitive industries is about
		observations for			efficiency in managing taxes, i.e., lower	2 percent lower than that of their non-
		the period			effective tax rate.	competitive counterparts.
		1994–2008.				

 TABLE 2.1. PMC and asset pricing – Summary Tables

	Sold 2.1. The and asset pricing Summary rusies								
Author(s)	Research Question(s)	Sample/ countries	Justificat ion for sample selection	Measurement of PMC	Findings	Economic Significance			
Hou and Robinson (2006)	The association between industry concentration and stock return	US: Compustat Annual Industrial Files for the year 1963 to 2001.	No	HH Index.	The higher the industry concentration (or 1/ wer the competition), the lower the stock returns.	Firms operating in highly competitive industries earn 4% higher annual return than those operating in low- competitive industries.			
Gaspar and Massa (2006)	Investigate the association between PMC and IRV.	US: 85,122 firm- year observations, 1962–2001.	No	I ⊣ In <sup>,</sup> ex, ∍xcess pr. ∠-cost margin,	The authors reveal that firms operating in highly concentrated industries experience lower IRV.	No			
Ali et al. (2008)	PMC and stock returns	US: Data from US Census for the year 1980- 2005.	X O	US Census HH Index.	There is no relation between PMC and stock returns. The authors further explain that PMC research that uses the HH Index based on Compustat data may provide inappropriate results.	No.			
Irvine and Pontiff (2008)	Examine the relationship between PMC and idiosyncratic return volatility (IRV).	US. $4c^{2}$ of $3$ observations, for the period 1964– 2003.	No	Industry turnover, return on assets, and domestic industry market share of foreign competitors.	The study finds that IRV is higher in more competitive industries stemming from economy-wide intensive competition increasing cash flow and earnings volatility.	No			
Peress (2010)	Effect of PMC on equity market.	US: 28,172 firm- year observations, 1996 to 2005.	No	Lerner Index.	Higher product market power decreases IRV and risk-adjusted expected returns.	No.			
Huang and Lee (2013)	Examine the impact of PMC on credit risk.	US:6,155 default firms during1985 to 2009	No	HH Index, number of firms per industry, four firm	PMC affects credit risk positively. In a concentrated industry, small firms are more likely to be driven out than equally	No.			

#### concentration ratio. small firms in a less concentrated industry.

Chen, Li, and Ma (2014)	The relation between PMC and the cost of equity capital.	China: 9406 firm-year observations, during 1996 to 2006.	Yes	HH Index	A negative relation is found between PMC and the cost of equity capital. Increased product market competition induces production efficiency, external governance, te hnical innovation, and managerial inc. tives, resulting in a reduction $i$ i sy te natic economic uncertimety which reduces the cost of equit	No.
Gu (2016)	Examine the joint effect of PMC and investment in R&D on stock returns.	US: Compustat Annual Industrial Files and CRSP during 1963 to 2013.	No	HH Index.	Fin us operating in more competitive in dustries earn greater returns, but such an effect is found only for R&D intensive .irms, because of greater outcome uncertainty.	No.
Bustamante and Donangelo (2017)	The relationship between PMC and expect stock returns.	US: Sample period 1992 to 2014	No	UC C asus 'HH Index, alternative sales concentration.	The study shows a negative association between PMC and expected stock returns.	Firms operating in the highest quintile of industry concentration have 5% to 8% higher excess return than do firms operating in the lowest quintile.
Abdoh and Varela (2017)	Examine the impact of PMC on IRV and systematic volatility.	US: 30,234 firm- year observations, tor the year 2005- 2004	No	HH Index	The study finds that intense competition accentuates IRV relative to systematic volatility.	No.
Ryu (2019)	The impact of PMC on stock returns.	Kore v: 037 firms, du ing 2010 to 2016.	Yes	US-Korea Free Trade Agreement.	Higher PMC negatively affects stock returns.	No.
Li and Zhan (2019)	Investigate the impact of PMC on stock price crash risk.	US: 27,955 firm-year observation, during 1998 to 2009.	No	Hoberg et al. (2014) text-based measure, Li et al (2013) measure, and U.S. large import tariff reduction.	The study documents a positive effect of PMC on stock price crash risk. This is consistent with greater competition increasing managers' career concerns, prompting them to hoard bad news: a precursor of price crash. Also, lower competition creates an opaque information environment, which also increases price	A one-standard-deviation change in fluidity, increases the crash risk by 1.32%.

crash risk.

#### TABLE 2.2. PMC, cash holdings and investment policies – Summary Tables

Author(s)	Research Question(s)	Sample/ countries	Justifica tion for sample selection	Measurement of PMC	Findings	Economic Significance
Haushalter et al. (2007)	Examine the effect of predation risk on firm's investment behavior and financial policy.	US: 2,843 observations, 1993–2001	No	US Census HH Index, four firm concentration ratio.	T' e a tho's find that when investment vicin an industry decreases, a firm tends to increase investment if it holds large cash reserves and, if there exists higher interdependence of investment opportunities between the firm and its rivals.	An increase in HH index from the 25th to the 75th percentiles leads to a 17.1% increase in investments.
Alimov (2014)	Examine the effects of PMC on the value of cash holdings	US: 12,680 firm- year observations, for the period 1983 to 1995	Yes	Can, 1a–U.S. Free Trade Agreement 1989	The study reveals that higher PMC increases the value of cash holdings, and the result is more pronounced for firms having serious threats of losing investment projects to competitors.	A \$1 of extra cash is worth about \$0.59 more for the mean firm experiencing more than 5% tariff reductions relative to the mean firm experiencing below 5% tariff reductions.
Hoberg et al. (2014)	Examine the relationship between product fluidity and cash holdings of the firm.	US: $4^{2}$ , $6^{-1}$ observations, for the y ar 1997 to 2600.	No	Product market fluidity	Higher fluidity is related with greater cash holdings, particularly for firms that have poor ability to raise capital from the capital market.	Firms operating in high (low) competitive markets hold cash which comprises 21.5% (8.2%) of total assets.
Laksmana and Yang (2015)	Investigate the relationship between PMC and investment decisions.	US: 40,632 firm- years observations, for the period 1990 to 2010.	No	HH Index	The authors find that intensive competition motivates managers to invest more in CAPEX and R&D. However, the disciplinary effect of competition ensures that managers refrain from making suboptimal investments, by curbing the overinvestment of free cash flows.	No.

Jiang et al. (2015)	Examine the relationship between PMC and corporate investment.	China: 8,732 firm-year observations, during 1999– 2010	Yes	Import tariff reduction, HH Index, four-firm concentration ratio	The authors reveal a positive association between PMC and corporate investment in China.	A one standard deviation increase in PMC increases corporate investments by 2.65%.
Fresard and Valta (2015)	Entry threat and investment behavior	US: 4,264 treated and matched firms experiencing a significant import tariff reduction between 1974 and 2005.	Yes	Import tariff reduction	Sample firms significantly reduce capital expenditures after a tariff decrease in their industry. The reduction of investment is observed only i) in markets featuring competition in s. ategic substitutes, (ii) in firms with cons ra.ned financial resources, and ('11) 1 1 1 ar sets with low entry costs.	From one year before to one year after the tariff cut the ratio of CAPEX to capital (net PPE) of treated firms declines by 7.2 percentage points relative to the ratio of matched firms.
Chi and Su (2016)	The relation between product market threat and the value of cash holdings.	US: 46,000 firm- year observations, For the period 1997- 2011	No	Hoberg et al. (2014) FLUIDITY mea. The.	T a authors find that firms experience higher value of their cash holdings when there are greater predatory threats from rivals.	No.
Lyandres and Palazzo (2016)	Examine the strategic considerations for cash holding policies.	US: 15,720 firm- year observations, during 1977- 2006	No	Exp. rted competition intensity- measured by proximity of firms' innovation.	The study reveals that cash holdings by firms are related to competitors' cash holdings decisions negatively and this relationship is more pronounced when the competition intensifies	A one standard deviation increase in firm's cash holdings decreases cash holdings of the rivals by more than 2 percentage points
Stoughton et al. (2017)	PMC and investment efficiency	US: 60,17C firn year o'sser valor.s bet ver n 1° 30- 2012	No	HH index; number of firms of an industry; US Census HH Index; and Hoberg and Phillips (2010) fitted HH Index, Hoberg et al. (2016) text-based measure	Competition is positively related to investment inefficiency. There are also nonlinear effects, as larger firms are less negatively affected by competition.	A one standard-deviation increase in HH index decreases investment efficiency of an average firm by 5% to 10%.
Abdoh and Varela (2018)	The relation between PMC and investments.	US: 22,315 observations, during 1985-2014	No	HH Index	PMC increases cash flow-enhancing investments but only for financially <i>unconstrained</i> firms, which supports the disciplinary view of competition.	No

			J	ournal Pre-pro	oof	
Larkin (2020)	PMC and supplier reliance on major customer.	US: Sample period 1976– 2016.	No	HH Index	The study finds that lower competition is associated with a greater reliance by suppliers on major customers.	A one-standard deviation change in weighted average customer concentration encourages a supplier to allocate an additional 3% of its total sales to major customers.

#### TABLE 2.3. Product market competition and financing policies- Summary Tables

TABLE 2.3. Pro	ABLE 2.3. Product market competition and financing policies– Summary Tables									
Author(s)	Research Question(s)	Sample/ countries	Justificat ion for sample selection	Measurement of PMC	Findings	Economic Significance				
Erhemjamts et al. (2010)	Examine the effect of PMC on short-term debt choice of the firm.	US: 46,031 firm- year observations, for the year 1986 to 2006	No	Hoberg and Philips (2010) fitted rur- Indev fi. n's nar tet s'are.	T ne authors document a <i>non-linear</i> relationship between short-term debt and industry concentration. At low (high) levels of industry concentration the authors find a positive (negative) association between short-term debt and industry concentration.	Compared to firms at the fifth percentile of HH index, those at the inflection point (44%) are associated with an additional 2.7% of short-term debt).				
Guney et al. (2011)	Examine the association between PMC and capital structure	China: 10,416 firm-year observations, for the period 1994 to 2005.	× 0	Tobin's Q, HH Index	The study documents that for the full sample there is a negative relationship between product market competition and leverage. Further, using partitioned samples the authors find that association between PMC and leverage is non-linear based on firm size, growth opportunity of firms and industry type.	No.				
Chod and Lyandres (2011)	Investigate the strategic reasons for firms to go public when they face competition in the product market.	US: 3,871 IPOs, during 1990- 2008.	No	Competitive Strategy Measure (CSM)	The authors find a positive association between going public and the market share of the firm, and this relationship is stronger in industries where firms have higher competitive interaction.	A one standard deviation increase in the absolute value of CSM increases market share by 10-14 percentage points in one year.				
Valta (2012)	The effect of competition on cost of bank debt.	US: 12,256 loans for 2,900 firms, during the period 1992–2007	No	HH Index, fitted HH Index- Hoberg and Philips (2010)	The study shows that higher competition increases cost of bank loans, as intensive competition increases the uncertainty of future cash flow, business risk and default	The average loan spread difference among firms operating in the highest versus lowest competition quintiles is				

risk of the firms.

32 basis points.

Mitani (2014)	Explore the relationship between capital structure and market share of firms (or PMC)	Japan: 12,784 firm-year observation, for the year 1989 to 2004	No	Firm's market share	There is a negative relationship between market share of the firm and its leverage. Market share leaders use lower leverage or debt financing to maintain their competitive position if agency costs exceed the benefits of using debt.	No.
Boubaker et al. (2018)	Impact of PMC on firm's choice between public debt or bank debt.	US: 25,450 firm– year observations, during 2001– 2013	No	Hoberg et al. (2014) <i>Fluidity</i> measure, U.S. tariff reduction	The authors do rul tent a negative relation between $P_1$ (C ; ad bank debt. The negative as potation is found to be more promounced for firms having greater financial constraints and poor corporate governance quality.	Firms affected by tariff reduction decrease the proportion of their bank debt by approximately 4%.

0

 TABLE 2.4. Product market competition and payout policies – Summary Telaes

Author(s)	Research Question(s)	Sample/ countries	Justifica. ion fc sempl selection	Mea urement of PMC	Findings	Economic Significance
He (2012)	Examine the relationship between product market competition on dividends payment.	Japan: 35,462 observation. fo. the period 197 J to 2004.	Yes	HH Index	The study finds a positive association between these PMC and dividends payment. The author also reveals that firms in highly competitive industries pay more dividends to the minority shareholder and, thus, PMC mitigates firm-level agency problem related to dividends payment.	No.
Kao and Chen (2013)	Explore the effect of PMC on dividends payment	Taiwan: 9448 firm–year observations, from 1996 to 2010.	Yes	HH Index	The authors document a nonlinear relation between product market competition and dividends payment. The authors reveal that under lower levels of competition, there is a negative association between dividend payment and product market competition. On the other hand, under higher levels of	No.

			Jou	rnal Pre-proof		
					competition, the association between dividend payment and product market competition is positive.	
Hoberg et al. (2014)	Examine the relationship between product fluidity and dividends payment of the firm.	US: 45,631 observations, for the year 1997 to 2008.	No	Product market fluidity	Firms with greater fluid product market or facing higher competition, tend to pay less dividends or omit dividends. This finding is consistent with the prediction of predation three a-based theory and agency- based theory u ter a highly competitive environme at.	48.7% of firms with the lowest fluidity pay dividends, whereas only 9.1% of firms with the highest fluidity pay dividends.
TABLE 3.1. PM	IC, CEO power, executive of	compensation, and ex	xecutive tur	n over– Summary Tal	bles	
Author(s)	Research Question(s)	Sample/countries	Justifica tion for sample selection	Measurement of PMC		Economic Significance
DeFond and Park (1999)	The effect of PMC on CEO turnover.	US: 2,429 firm- year observations, for the year 1988- 1992.	No	r.H 1 de	Higher (lower) PMC increases (decreases) CEO turnover. Moreover, the results are stronger when a relative performance evaluation for benchmarking CEO performance is used.	No
Fee and Hadlock (2000)	The effect of market competition on management turnover in the newspaper industry.	US: 4,478 firm- year observatio. s during 1950- 1993	N	Market is defined as competitive if in one city there were two or more independent newspapers.	Management turnover rate is higher in competitive markets. High competition increases the probability of liquidation and, thus, makes the jobs comparatively less attractive, leading to greater turnover.	When the newspaper industry sh from monopoly to a competitive market, turnover probability incr by 27%.
Karuna (2007)	Effect of PMC on compensation	U.S. 7,556 firm- year observation between 1992– 2003.	No	Price-cost margin, market size, entry costs	Firms provide higher compensation when competition in the industry is greater. Hence, product market competition plays a complementary role for corporate governance in the context of compensation payment.	One standard deviation of indust product substitutability decreases managerial incentives by approximately 7%.
Beiner et al. (2011)	The relationship between PMC, compensation and firm value.	Switzerland: 640 firm-year observation for the year 2002- 2005.	No	HH Index, Industry median net profit margin.	Effect of PMC on managerial compensation is convex. In a low (high) competitive environment, intense competition leads to a lower (higher) level of compensation.	No

Ko et al. (2016)	PMC and managerial compensation.	Four East Asian markets: 33,214 firm-year observations, from 2001-2012	No	Price-cost margin, market size, entry costs	Competition strongly and positively affects pay-performance sensitivity for dispersedly owned firms compared with family or state-owned firms.	No
Dasgupta et al. (2017)	The effect of PMC on CEO turnover	US: 146 manufacturing industries during 1974-2005.	No	US Import tariff reduction data (1974-2005)	Higher PMC increases the sensitivity of forced CEO turnover to firm performance by as much as 43% during initial three years after the ariff cut. The results are more pronounce. ' for firms with greater predation 1 sk and for products closely related to the set of other firms.	Holding other variables at the mean, forced CEO turnover likelihood increases by 2.0 percentage points when an industry experiences a substantial tariff rate cut.
Jaroenjitrkam et al. (2019)	The effect of PMC on CEO power.	US: 5,182 firm- year observation for the period 1992-2016.	No	HH Index, Lerner Index, US Import tariff reduction data	It a h shly competitive product market CE Os hold less power. This result is more p onounced for firms with lower CEO ownership, lower analyst coverage and entrenched management. Evidence confirms a substitutive relation between PMC and corporate governance.	Firms operating in high PMC experience an increase in CEO pay slice by approximately 8% and 6% respective (proxied by HH Index and Lerner Index) compared to firms operating in low competitive markets.
Yeah and Liao (2020)	PMC and executive succession	Taiwan: 382 succession events between 1997 and 2016.	Yes	HF. index; numbers of competitors, and industrial market size.	Firms operating in more competitive environments are more likely to select a non-family member as the successor, as such successions are found to improve subsequent firm performance.	For the HH measure, firms in highly competitive environments are 17.45% less likely to choose family succession.

### TABLE 3.2. PMC, corporate governance/ mailien for corporate control, and corruption- Summary Tables

Author(s)	Research Question(s)	Sample/countries	Justifica tion for sample selection	Measurement of PMC	Findings	Economic Significance
Byun et al. (2012)	To examine the effect of PMC on the relationship between ownership structure and internal corporate governance.	Korea: 590 companies for the period 2003–2009	Yes	HH Index	Strong PMC encourages successful implementation of internal corporate governance for stand-alone firms, but firms associated with a business group exhibit better governance under weak PMC environments. Moreover, PMC positively impacts on shareholder rights,	No

	Alexeev and	The effect of product	Developing	No	HH Index, number	corporate transparency, and board effectiveness. The higher the PMC, the greater the level	No
	Song (2013)	market competition on corruption.	countries- about 4700 to 15,000 observations, during 2001– 2005.		of firms within an industry, mark-up over operating costs.	of corruption. It is revealed that under highly competitive environments, the cost- reducing corruption increases. The authors show that in intensive product market competition, firms pay more bribes where the benefits of wch acts exceed the costs.	
	Chhaochharia et al. (2017)	Examine whether PMC plays a substitute role for mainstream corporate governance.	US: 38,053 firm- year observations for the period 2000-2006.	Yes	US Census HH Index	The authors find that the performance of firms in le s co. putitive industries with weak ar go vermance pre-SOX, improved significantly post-SOX, compared with events in the competitive industries.	No
	Gupta et al. (2017)	Examine whether PMC has a substitute or complementary role for corporate governance.	US: 152 backdating firms during 2006– 2009.	No	HH Index, industry net profit m אוב יח	For well-governed firms, the stock price responds more adversely to the revelation of backdated employee stock options information than for poorly governed firms. Importantly, the adverse price reaction is much higher for poorly governed firms operating in highly competitive markets, thereby supporting the substitutive role of PMC.	No
	Kim and Kim (2017)	The effect of PMC on internal control system of the firm	US: 6339 firm- year obse. vations for the your 2004- 2016	Yes	HH Index, four-firm ratio, industry leader indicator	PMC negatively affects the internal governance systems and information producing environment.	No
_	Lee et al. (2019)	Impact of PMC on corporate takeover	Koi a: Changes in control for 380 cases between 2004-2013.	Yes	HH Index, entry costs, price-cost margin	Firms operating in more (less) competitive product markets have a higher (lower) probability of facing corporate takeover. PMC and corporate takeover exhibit a complementary relationship in the context of emerging economies.	No

#### TABLE 3.3. PMC and CSR activities – Summary Tables

Author(s)	Research Question(s)	Sample/countries	Justifica tion for sample selection	Measurement of PMC	Findings	Economic Significance
Flammer (2015)	The effect of PMC on CSR activities	US: 508 companies for the year 1991-2005.	Yes	34 large tariff reductions from 1992 to 2005.	Import tariff reductions induce firms to engage in more CSR, which indicates that CSR plays a robe of competitive strategy in highly competitive environments.	In the 3 years following the tariff reduction, companies increase their social performance by about 0.3–0.4 KLD strengths. Given the average number of KLD strengths prior to the treatment is 1.75, CSR engagement of companies increases by about 18–23 percent.
Lee et al. (2018)	The impact of PMC on CSR activities	Korea: 724 companies for the year 2010-2013	Yes	HH Index, four-firm ratio, entry los, price-cust n argin	CSR engagement decreases with an increase in PMC. This relationship is more pronounced in firms where managerial ownership is low and free cash flow is high.	No
Leong and Yang (2019)	The effect of PMC on CSR activities	US: 36,026 firm- year observations between 1991- 2015.	No	Hh Index, number of firms within an industry, Hoberg and Phillips (2010) fitted HH Index.	PMC motivates firms to perform CSR activities. The results show that firms facing greater competition engage more in social performance, but perform poorly in community, environment, human rights, and employee treatment categories.	No

#### Highlights

- We synthesize and critically evaluate the empirical literature on the consequences of product market competition in the accounting, finance, and corporate governance domains.
- Our review suggests that, although market competition has profound implications, the empirical findings often provide conflicting results.
- We highlight such contradictory findings and offer suggestions for future research.

• Our review will help researchers intending to further investigate the implications of product market competition.