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"Corporate Finance, Industrial Organization, and Organizational Economics."

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Abstract

In the last thirty-five years, research at the intersection of corporate finance, industrial organization, and organizational economics has grown substantially. This paper reviews work that combines elements from these fields of finance and economics with an emphasis on recent developments. I discuss how product market competition, customer-supplier relations, firms' organizational form, and ownership structures interact with firms' financial policies. I also overview new developments in the literature from a special issue of the Journal of Corporate Finance.

1-Introduction

The field of corporate finance studies firms' financing and investment decisions. These decisions are, of course, related to firms' competitive environment and their organizational structure. However, early work in corporate finance did not explicitly consider these interactions. At the same time, research in industrial organization ignored the financial side of firms' operations. In the past thirty-five years, however, research at the intersection of these fields of economics and finance has gained considerable attention. Nowadays, corporate finance scholars routinely integrate elements from industrial organization in their research, and vice-versa. This increased interest is reflected in academic conferences, where it is common to observe multiple sessions on "product-markets and corporate finance." Even Ph.D. programs now sometimes offer elective courses on the intersection of corporate finance and industrial organization — taught mostly in finance departments. The main goal of this paper is to summarize the existing literature at the intersection of these fields, with an emphasis on the most recent developments. I also present new ideas in this front from papers that were the product of a special issue in the Journal of Corporate Finance.

The field of industrial organization can be categorized into two parts. One part deals with market structures, firms' interactions and responses (e.g., setting prices), and their performance. This part of the literature follows from Joe Bain's work in the 1950s on the structure-conduct-performance (SCP) paradigm, arguing that the structure of the market affects firms' conduct and, ultimately, their performance. Given the concerns of market structure endogeneity due to entry-and-exit decisions, this part of the field turned more theoretical in the seventies (Tirole, 1988).

Modern industrial organization typically combines theory and empirics through structural methods. By and large, this work considers single-industry settings, as the identification techniques and structural-model assumptions demand detailed institutional knowledge of each industry.

The second part is the "theory of the firm" and deals with how firms organize their production (e.g., make or buy decisions; firm boundaries; delegation in organizations). This line of research has its origins in Coase (1937), Williamson (1975,1978), Grossman and Hart (1986), and Hart and Moore (1990), with the ideas of transaction costs and incomplete contracts at heart. Nowadays, the amount of work in this area is so large that it ventured out of industrial organization into its own field of "organizational economics."[1] As a field, organizational economics borrows not only from the theory of the firm but also from early work in corporate finance on managerial agency problems (Jensen and Meckling, 1976). In a nutshell, this field studies how firms are organized and how they operate within a given organizational form.

Following the distinction between industrial organization and organizational economics, I organize the summary part of this paper in two sections. In Section 2, I overview the literature on the interaction between corporate finance and industrial organization. I discuss how firms' financial policies relate to their interactions with competitors in a variety of settings, such as oligopolies, perfect competition, and collusion. In this section, I also examine how customer-supplier relationships relate to financial decisions. In Section 3, I review the literature at the intersection of corporate finance and organizational economics. I discuss research on different organizational forms, such as standalone firms, conglomerates, and business groups. I overview hybrid organizational forms, including strategic alliances, cross-ownership, and franchising. I also review work that relates firms' ownership structures and internal organizations to their competitive environment. Finally, in Section 4, I present new ideas at the intersection of corporate finance with industrial organization and organizational economics from papers included in a special issue of the Journal of Corporate Finance.

A few caveats are in order. First, some topics are hard to categorize into the interaction of corporate finance with industrial organization or with organizational economics. For instance, mergers and acquisitions (M&As) are mainstream in industrial organization — from a competition policy perspective — and organizational economics —from a firm boundaries perspective. In such cases, I made judgment calls as to where they fit best. Second, to keep the length of this paper manageable, I had to leave out certain topics. One important area I do not touch upon is the interaction between firms and the labor force. This topic is part of a large and

[1] See Gibbons and Roberts (2012) for an overview of the literature on organizational economics.

growing literature on corporate finance and labor economics (see, e.g., Matsa, 2018). Given the relevance this literature has acquired in recent years, reviewing it in this context would not do it justice. A final caveat is that, as in any summary paper, this one reflects my own views on the subject. I apologize to the authors whose work I omitted or underemphasized.

2-Corporate Finance and Industrial Organization

In this section, I summarize the literature on financial decisions and product-markets interactions.[2] Product-market interactions refer not only to how firms relate with competitors but also with other stakeholders, such as customers and suppliers. In both cases, I briefly lay out the theoretical foundations, or building blocks, on how financial policies relate to product-market interactions. After that, I discuss some of the available empirical evidence. Table 1 summarizes a number of the papers I overview.

2.1-Corporate finance and competition

2.1.1-Building blocks

One of the first papers that explicitly considered how firms' competitive environment interacts with their financing decisions was Brander and Lewis (1986). Their model studies the effects of debt financing on firms' strategic interactions in an oligopoly setting. They argue that a firm's risk-shifting incentives stemming from the conflict of interest between equityholders and debtholders in the presence of high debt levels would lead to a more aggressive product-market behavior. In a Cournot setting, if one firm is credibly more aggressive due to high debt levels, rivals would produce less, benefiting the more aggressive firm. However, in equilibrium, all firms would take on high debt, and their performance would suffer. Regardless of the equilibrium consequences, this paper was influential as it provided a straightforward empirical prediction: An exogenous increase in a firm's debt, or financial leverage, would lead to more aggressive behavior towards competitors.

Several theoretical papers that followed yielded the opposite prediction, namely, that high debt levels would weaken firms' competitive position, or would lead them to choose a less aggressive product-market strategy. The proposed mechanisms generating these predictions were different. Bolton and Scharfstein (1990) study the interaction between a deep-pocketed firm and a financially constrained firm. They argue that high debt at the constrained firm would encourage predatory behavior from the deep-pocketed firm. Phillips (1992) argues that if retained earnings are a cheaper source of funds for investment than external financing, a high debt level will act as a commitment to a higher cost of investment, making firms less aggressive. Povel and Raith

[2] See Maksimovic (1995) for an early summary with a more theoretical emphasis.

(2004) endogenize debt as an optimal financial contract, and they consider both the ex-ante and ex-post incentives that debt has on product-market decisions. Ex-ante, debt increases a firm's marginal cost and makes it less aggressive; ex-post, debt does not make firms more aggressive because the optimally designed financial contract eliminates risk-shifting incentives. The overall effect is that debt makes firms less aggressive.

The tension in the theoretical predictions spurred empirical work on the relation between debt, or capital structure, and product market behavior. The literature is quite broad. Some of this work explores endogenous relationships between debt and product-market behavior. Other work makes progress on identifying exogenous changes in financial leverage to examine the effects on product-market behavior. A third group exploits exogenous changes in competition to learn about the relationship between firms' financial structure and their competitive environment. The empirical settings are also quite varied: Some of this work studies single-industry settings, whereas others consider multiple industries. In what follows, I summarize the empirical literature on debt and product-market behavior in light of the models mentioned above. After that, I consider other potential mechanisms for the interaction of financial variables and product-market behavior, such as collusion, peer effects, and product-life cycles. I also discuss the possible interactions between product market competition and financial variables other than debt (e.g., cash holdings).

2.1.2- Debt and competitive strategy

The first set of papers that study the relationship between firms' financial and product-market decisions exploit the wave of leveraged buyouts (LBO) in the 1980s as a laboratory. Most of this early work studies either a single industry or a few industries, to better gauge the outcomes of the strategic interactions in terms of prices, quantities, or entry and exit decisions.

Phillips (1995) studies four industries where the largest firms underwent leveraged recapitalizations, increasing their debt by more than 25%. In three of these industries (fiberglass insulation, tractor-trailer, and polyethylene), operating margins increased, and sales decreased for recapitalizing firms. These findings are consistent with debt softening product-market competition (Phillips, 1992). In the gypsum industry, however, the largest firms increased market share at the expense of smaller firms, consistent with debt making highly indebted firms more aggressive (Brander and Lewis, 1986). Phillips (1995) argues that the different outcomes are due to different industry conditions. In the gypsum industry, several major competitors did not increase their leverage, preventing a softening of the competition at the industry level. Chevalier (1995a) also examines the effects of LBOs, but in the context of the supermarket industry, where

prices are set at a local level. She finds that when local competitors are also levered, the firms taking on higher debt raise prices. However, when competitors have low debt levels, prices fall after a firm's LBO. Chevalier's (1995a) findings are consistent with those in Phillips (1995) in the sense that they both find that debt softens product-market competition only when rivals are also highly levered.

Chevalier (1995b) and Kovenock and Phillips (1997) examine entry and exit decisions. Also using the supermarket industry as a setting, Chevalier (1995b) finds that supermarket chains were more likely to enter and expand in a local market if a large share of the incumbent firms undertook LBOs. Kovenock and Phillips (1997) examine the effects of large leverage recapitalizations using data on ten manufacturing industries. They find that if the industry is highly concentrated, recapitalizing firms are more likely to close plants and less likely to invest. Taken together, the evidence in these papers favors the hypothesis that high debt is associated with a weaker product market position.

Campello (2006) presents a theoretical model and empirical evidence that accommodates both views regarding the effects of financial leverage on product-market competition. He argues that for firms with low leverage levels, higher debt boosts their competitive performance, but for firms with high debt levels, it weakens it. Different from the previous papers, Campello (2006) considers firms from a variety of industries using Compustat data. His measure of product-market outcome is market share gains or losses, leveling the field for cross-industry comparisons. In terms of identification, he uses firms' tangible assets as an instrument for debt. In this setting, Campello (2006) finds evidence consistent with his model: Firms with little debt increasing their leverage gain market share, but leverage increases translate into market share losses for already highly indebted firms.

A few papers have shed light on the relationship between financial leverage and product-market competition by studying firms' responses to competition shocks. An early proponent of this approach is Zingales (1998), who studies the deregulation of the trucking industry in the U.S. Zingales (1998) shows that after the liberalization, firms with high pre-deregulation leverage were less likely to survive and more likely to exit, even after controlling for several measures of productivity. He also finds that high initial leverage is related to firms' inability to invest following the deregulation. His findings are consistent with the intuition that a high debt level weakens firms' competitive standing.

A more recent example of this approach is Dasgupta and Zaldokas (2019). They examine the causal effect of an increase in competition, due to the passing of leniency laws, on firms'

financing decisions. Leniency laws provide incentives for firms involved in a cartel to inform the competition authorities of their illegal practices with co-conspirators in exchange for lenient treatment in terms of penalties. These laws have been argued to increase competition, as they tend to destabilize cartels or prevent their creation. Using the staggered passing of leniency laws in several countries, they find that when competition increases, firms increase their financial flexibility by financing investments with equity rather than debt. Dasgupta and Zaldokas (2019) interpret their findings as being consistent with Bolton and Scharsftein (1990) in the sense that when firms operate in a more competitive environment, they take measures to avoid being preyed upon by rivals.

Other papers contribute to this literature by studying how financial leverage relates to firms' preemptive strategies. Cookson (2017) analyzes the strategic responses of incumbents to entry threats using the American casino industry as a setting. His data is unique in that he can identify declared entry intentions in a market by potential competitors. Cookson (2017) finds that upon entry threats, low-levered incumbents expand their capacity, and as a consequence, competitors are more likely to withdraw their plans. Importantly, he finds that high leverage prevents incumbents from responding to entry threats, leading to a higher completion rate of entry plans. In a similar vein, Simintzi (2020) examines firms' reactions to restructuring news of their rivals. Using data from manufacturing sites in the U.K., she finds that if the news reveals an improvement in a rival's competitive position, firms respond by increasing their capital investment. However, the responses are mostly coming from low-debt firms. Both these papers are consistent with Bolton and Scharfstein (1990) in the sense that high debt levels leave firms in a weaker competitive position relative to their (potential) rivals.

Beyond the presence of debt, the possibility of (re)financing could also affect firms' product-market outcomes. In Bolton and Sharfstein's (1990) model, investors may not refinance a firm fearing resource diversion by managers in the presence of information asymmetry. The unintended consequence of this financing shortage is that predation risk increases for financially constrained firms. Billett, Garfinkel, and Yu (2017) study this possibility by examining whether an increase in information asymmetry affects firms' product-market outcomes. They compare firms that lost analyst coverage due to a broker house closure or merger (treated firms) to a matched set of firms that did not lose analyst coverage (control firms). Billett et al. (2017) find that firms that lose analyst coverage experience a reduction in their industry-adjusted sales growth, especially if they are financially constrained. This finding is consistent with the notion that higher information asymmetry reduces the probability of refinancing and leaves firms more exposed to predation by rivals.

Overall, most of the empirical evidence summarized in this section is consistent with the notion that debt makes firms weaker or softer competitors. However, there is also some evidence showing the opposite effect. The outcome seems to depend on factors such as industry characteristics and the level of indebtedness of competitors.

2.1.3-Other mechanisms relating debt and product-market competition

Maksimovic and Zechner (1991) propose a model that examines how financial and product-market strategies are determined in a competitive equilibrium. In their setting, the number of firms and the production technology (and therefore cash flows) are endogenously determined. The conflict of interests between debtholders and equityholders encourages firms to take on risk with high debt levels. In their setting, this implies choosing a risky technology. In equilibrium, both the safe and the risky technology are equally profitable: Some firms end up with higher debt levels and a risky technology (fringe), whereas others choose lower debt levels and a safer technology (core). Mackay and Phillips (2005) examine this prediction and find support for it. Using data from the Census of Manufacturers, they compute firms' capital-to-labor ratios in several industries. They find that in competitive industries, firms near the industry median capital-labor ratio (core firms) use less financial leverage than firms that deviate from the median (fringe firms). Hence, the zero-profit condition in a competitive equilibrium setting appears to drive the joint self-selection into production technology and financial structure.

At the other end of the spectrum of the competitive equilibrium is the scenario where firms coordinate their actions through a cartel to raise prices. Maksimovic (1988) studies the relationship between the decision to form a cartel and a firm's financial standing. In his model, cartel firms use trigger strategies to enforce a collusion agreement: Firms charge higher prices under collusion but revert to competition if any firm deviates. In such a setting, large debt levels can make deviations more attractive, as the shareholders reap the rewards of a deviation net of debt payments, while the lenders share in the cost of a deviation due to the limited liability effect. The takeaway is that high leverage destabilizes cartels, so cartel firms should keep their leverage ratios low to preserve cartel stability. A recent paper by Ferrés, Ormazabal, Povel, and Sertsios (2020) examine this prediction using data of firms convicted of collusion. They find that cartel firms exhibit lower leverage during collusion periods and that leverage returns to pre-collusion levels once the cartel breaks down. These findings are consistent with the theoretical predictions in Maksimovic's (1988) model, as firms seem to reduce their debt strategically to sustain a collusion equilibrium.

2.1.4- Financial policies (other than debt) and product-market competition

Several interesting articles study the interaction between product-market competition and financial policies other than debt. A first set of papers examines the strategic role of cash holdings. Haushalter, Klasa, and Maxwell (2007) find that firms operating in industries with higher predation risk tend to have higher cash holdings, for precautionary reasons. Hoberg, Phillips, and Prahbala (2014) develop a new measure of competitive threats using textual analysis from firms' financial statements, i.e., "product-market fluidity." Using this measure, they show that firms facing more serious product-market threats exhibit more conservative cash and payout policies. Fresard (2010) studies the role of cash when firms face increased competition due to higher import penetration. He finds that firms with more significant cash holdings before tariff reductions perform better than their industry peers after competition intensifies. Overall, these papers document that firms' cash holdings play the role of "negative debt" in Bolton and Scharfstein's (1990) model. Firms increase their cash holdings strategically with heightened predation risk, and when competition actually intensifies, cash holdings help firms cope with it.

A second set of paper studies firms' investment responses to changes in their competitive environment. Fresard and Valta (2016) show that when firms face entry threats due to tariff reductions, incumbent firms reduce investment (Capex), even before actual entry. This effect holds even after controlling for firms' investment opportunities. Noticeably, firms' strategic responses are only present in markets where competitive actions are strategic substitutes, and if deterring is too costly. These results complement the findings by Cookson (2017) and Simintzi (2020) in that if investments cannot prevent entry, incumbent firms react by accommodating potential rivals.

Heath and Mace (2020) also examine the effects of a competitive shock on firms' investment strategies. They take advantage of a trademark law that increased trademark protection for a subset of firms, effectively reducing the competition these firms face in the product market. Heath and Mace (2020) find that firms reduce their R&D expenses after experiencing an increase in market power. Their findings are consistent with Aghion and Schankerman's (2004) model, which shows that a reduction in competition may hinder firms' incentives to innovate.

2.15-Firm investment and other forms of strategic interactions

Firms' interactions in the product markets go beyond best-response functions to competitors' actions. Behavioral biases and informational spillovers also play a role in how firms interact. I overview how these alternative forms of strategic interactions can affect firms' investment policies.

Hoberg and Phillips (2010a) present evidence that in competitive industries, high industry-level stock market valuations and investment are followed by lower operating cash flows and predictably low abnormal returns. They attribute their findings to market participants in competitive industries not fully internalizing the negative externality that industry competition has on cash flows and stock returns. Simply put, firms make inefficient decisions when relying on information common to all firms, creating predictable booms and busts.

Povel, Sertsios, Kosova, and Kumar (2016) also study investment cycles, through the lens of the hotel industry. In their setting, they can identify hotel openings for almost the entire industry, with detailed data on hotel characteristics and locations. They also have information on the hotels' operational performance, even decades after the hotels were opened. They find that hotel investments made during local booms underperform — both in the short and in the long-run — similar hotel investments made outside boom periods. Interestingly, they can disentangle different types of local interactions, such as competition and information. They find that the hotels that perform worse are not those opened in the same quality-segment (e.g., upscale, or economy) as others, but those opened in different segments. Hence, their findings are inconsistent with "competition neglect," in which each firm does not internalize the best competitive response of other firms to the same information. Their results, however, are consistent with an information-based explanation. In their model, market leaders have better information than followers, so market followers assess the profitability of the overall market and specific segment by combining information from their own signals and the leaders' actions. In such a setting, the followers entering during industry booms, but in a different quality tier, perform worse as their entry decision is based on conflicting information regarding entry (market) and hotel type (segment).

Bustamante and Frésard (2020) also study informational spillovers on corporate investment, but from a peer-effects angle. They show that peer effects within industries play an important role in corporate investment decisions, especially in concentrated industries. They bypass Manski's critique using the average investment of unrelated neighbors of a firm's (non-local) product-market peers as an instrument for the average investment of its (non-local) product-market peers. Overall, their findings are consistent with imperfectly informed managers improving their information using peers' investment decisions as an input.

Hoberg and Maksimovic (2020) also examine the role of information on corporate investment, but instead of focusing on peers, they focus on firms' product-life cycles. They develop product life cycle classifications, based on product descriptions obtained through textual analyses from firms' financial statements. Hoberg and Maksimovic (2020) show that conditioning on the product life-cycle improves the explanatory power of investment-q models

significantly. Their findings showcase that firms interpret their investment opportunities quite differently depending on the life cycle of their products.

2.2-Corporate finance and customer-supplier relations

2.2.1-Building blocks

Firms' strategic interactions also include how firms interact with customers and suppliers through explicit or implicit contracts. There are two seminal theory papers on the topic: Titman (1984) and Maksimovic and Titman (1991). Titman (1984) studies how a firm's liquidation affects its customers and suppliers, and in turn, its own financing decisions. The main idea is that if a firm goes out of business, its customers and suppliers will suffer losses. Think of a firm that sells durable goods and provides post-sales services. If the firm is liquidated, it may cease to provide such services causing substantial inconveniences to customers who bought products from it. Similarly, suppliers may experience losses in relationship-specific investments if the firm goes out of business. Anticipating the adverse consequences of a high-debt scenario, customers and suppliers may be reluctant to do business with the firm. In response, the firm may choose a lower leverage ratio to improve its terms of trade. That is, a lower debt level acts as a commitment device in implicit contracts with customers and suppliers, by reducing the expected losses they could face.

Maksimovic and Titman (1991) propose a setting in which customers may be reluctant to do business with a highly levered firm, even if they do not suffer losses if the firm goes out of business. They study a firm producing a high-quality experience good in a multi-period setting. If the firm has large amounts of debt outstanding, its incentives to renege on its reputation increases due to the conflict of interests between equityholders and debtholders. The intuition is the following: A reduction in product quality can increase current cash flows by decreasing costs, benefiting equityholders. However, when customers perceive the effects of lower-quality goods in the future, cash flows might decline. Lower cash flows have a detrimental impact on debtholders as they are the residual claimant of firms' cashflows in case the firm does not avoid bankruptcy. That is, the debtholders share the expected costs, but not the benefits of a reduction in product quality. The main takeaway is that high financial leverage reduces firms' incentives to produce high-quality goods.

2.2.2-Debt and customer-supplier relations

Titman and Wessels (1988) were the first to examine some of the empirical implications in Titman (1984). In their paper, they study capital structure determinants. They augment the standard regressions that use financial leverage as a dependent variable by including proxies of

product uniqueness as explanatory variables, such as R&D over sales. Consistent with the intuition that lower financial leverage can mitigate contractual problems with stakeholders such as customers or suppliers, they find that firms with more unique products have lower financial leverage.

Kale and Shahrur (2007) go one step further and examine the predictions from Titman (1984) more directly by looking at firms' financial leverage in relation to customer-supplier links. They use two databases. In one database, they infer customer-supplier relationships from the degree of vertical integration between their industries. In the other database, they directly identify a firm's main customers and suppliers from information available in Compustat. In both cases, their evidence is consistent with the intuition from Titman's (1984) model. They find that a firm's leverage is decreasing in the R&D intensities of its customer and suppliers. That is, firms adopt more cautious financial policies when business partners make more relationship-specific investments.

In a paper contemporaneous to Kale and Shahrur (2007), Banerjee, Dasgupta, and Kim (2008) find similar evidence, also using direct customer-supplier links from Compustat. They find that firms in bilateral relations are more likely to maintain lower leverage ratios if they produce durable goods. More recently, Moon and Phillips (2020) find evidence supportive of Titman's (1984) predictions using a novel database on purchase contracts collected from 10-K fillings. They find that firms that contract with suppliers more intensively maintain lower financial leverage ratios.

Other papers have extended the analysis by focusing on how a firm's financial structure, or financing terms, relates to its bargaining position in customer-supplier relationships. Campello and Gao (2017) study the link between customer concentration and financing terms. They show that supplier firms with higher customer concentration face higher interest rates in loan contracts. Their results are consistent with the idea that suppliers are in a riskier bargaining position when they have a more concentrated customer base. One takeaway from this result is that firms could benefit from reducing their financial leverage ex-ante, as they would face lower financing costs.

From a theoretical point of view, however, higher leverage could also benefit a firm by increasing its bargaining power with business partners. High debt could allow a firm to obtain better contract terms if business partners fear that the firm would go out of business otherwise, causing them significant losses. Brown, Fee, and Thomas (2009) find evidence consistent with this idea when examining the effects of downstream firms' LBO on suppliers. They find that suppliers experience a negative abnormal upon the announcement of a downstream firm's LBO.

Moreover, suppliers' operating margins decline following the completion of a downstream LBO, especially if they have likely made relationship-specific investments. More recently, Towner (2020) also finds evidence consistent with the idea that high debt levels can improve the bargaining power of firms with their suppliers. Using detailed data on the reimbursement rates that hospitals negotiate with insurance companies, he finds that reimbursement rates increase with hospitals' debt and that this effect is stronger among hospitals with weaker ex-ante bargaining power.

Testing the empirical implications of Maksimovic and Titman (1991) requires detailed data on product quality. As a result, most papers examining their empirical predictions use a single industry as a laboratory. One example of this approach is Matsa (2011). He studies the effects of financial constraints on supermarket stockouts using detailed data from the Bureau of Labor Statistics. Supermarket stockouts represent a valid inverse measure of product quality as inventory shortfalls are one of the most critical determinants of supermarket customer dissatisfaction. Matsa (2011) documents that stockouts are negatively correlated with measures of corporate liquidity and positively correlated with measures of financial constraints. He also exploits supermarket LBOs as arguably exogenous increases in financial leverage and finds that stockouts become more frequent after LBOs. Matsa's (2011) findings are consistent with Maksimovic and Titman's (1991) prediction that high leverage reduces firms' incentives to maintain the quality of their products or services.

Phillips and Sertsios (2013) extend the predictions from Maksimovic and Titman (1991) and differentiate between periods of financial distress and periods of bankruptcy when firms continue to operate while reorganizing (Chapter 11). They argue that during a reorganization, the conflict of interests between debtholders and equityholders becomes moot as debtholders are closer to becoming the future owners of the firm. Hence, firms operating under Chapter 11 may have incentives to increase product quality relative to periods of financial distress. Phillips and Sertsios (2013) test their predictions in the context of the airline industry, for which measures of product quality, such as on-time performance and mishandled baggage, are publicly available. They tackle the endogeneity problem of firms' financial conditions – financial distress and bankruptcy – using an instrumental variables approach. The instruments are measures of asset and fleet redeployability. Consistent with the intuition in Maksimovic and Titman (1991), they show that product quality decreases in periods of financial distress relative to non-distress periods. They also find that product quality increases during bankruptcy episodes in comparison to periods of financial distress. Their findings are consistent with the idea that the mechanism

behind the decline in product quality during financial distress is the conflict of interest between equityholders and debtholders.

Kini, Shenoy, and Subramaniam (2018) present additional evidence that poor financial conditions are associated with lower product quality, using data on product recalls. The advantage of using product recall data is that it is a measure of product quality that can be observed across several industries, unlike the measures used by Matsa (2011) and Phillips and Sertsios (2013). Their data contain more than 3,500 recall events from 97 different three-digit SIC codes. Kini et al. (2018) show that higher financial distress is associated with more recalls and with the severity of the product failure underlying the recall. Their results also hold when exploiting two quasi-natural experiments that affect firms' financial conditions: (1) A sharp reduction in tariffs that increased competition for domestic firms; and (2) Input price shocks that resulted in exogenous cost increases.

Overall, the evidence presented in this section is consistent with high debt levels having potential costs in customer-supplier relations, as predicted by Titman (1984). However, recent evidence also highlights the potential benefits from an ex-post bargaining perspective (Brown et al., 2009; Towner, 2020). Regarding the product quality implications of Maksimovic and Titman (1991), the evidence seems to strongly support the prediction that financial distress increases firms' incentives to renege on their implicit commitment to keep up the high quality of their goods and services.

3- Corporate Finance and Organizational Economics

Organizational economics studies firms' organizational forms and within-firm structures and processes. The causes and consequences of firms' organizational structure have been of long-standing interest for economists (e.g., Coase, 1937; Williamson, 1975). These topics were also considered early on by corporate finance researchers, as firms' organizational structures are directly tied to their financing options. For instance, conglomerates are often argued to have an internal financing advantage over standalone firms, stemming from their internal capital markets (ICM). Relatedly, how firms reshape their boundaries through mergers and acquisition depends on the financing options available to them. By the same token, some areas of research on firms' internal organization such as managerial agency problems have also been at the heart of corporate finance. However, other topics like authority in organizations (Bolton and Dewantripont, 2012), or hierarchies (Rajan and Wulf, 2006; Garicano and Rayo, 2016) have received less attention by corporate finance scholars.

In what follows, I briefly summarize the literature on the interaction between corporate finance and organizational economics.[3] In Section 3.1, I review the literature on conglomerates and business groups vis-à-vis standalone firms. In Section 3.2, I shortly discuss work on M&As, which is an important way through which firms restructure their boundaries over time. In Section 3.3, I examine hybrid organizational forms, such as partial ownership, strategic alliances, and franchising. Finally, in Section 3.4, I briefly discuss how firms' internal organization and ownership structures relate to their competitive environment. Throughout, I deliberately place more emphasis on work that combines corporate finance, organizational economics, and industrial organization at the same time. Table 2 summarizes several of the papers I overview in this section.

3.1-Organizational form: Conglomerates, business groups, and standalone firms

A business unit can operate as a standalone firm or as a division of a larger entity, like a conglomerate (see Maksimovic and Phillips 2013 for a survey). The costs and benefits of being part of a conglomerate have been studied extensively. The main advantage of conglomerates is that firms that are part of them benefit from internal capital markets. ICMs give firms financial flexibility and allow them to fund their investment opportunities at better terms (Mathews and Robinson, 2008; Hann, Ogneva, and Ozbas, 2013). Another benefit is that conglomerates may be better at picking winner projects (Stein, 1997). The most important cost of being part of a conglomerate is inefficient decisions due to managerial agency problems (Rajan, Servaes and Zingales, 2000; Matsusaka and Nanda 2002; Stein, 2003).

Business groups can be considered the international counterpart of conglomerates. Simply put, they are a set of companies controlled by the same owner, which can be a family or a wealthy individual (e.g., the Tata Group). Business groups are common almost everywhere in the world except in the U.S. (Kandel, Kosenko, Morck, and Yafeh, 2019). They are usually set up through pyramidal structures, where the owner controls firms through successions of controlling links. This type of ownership structure leads to the separation of control rights and cash flow rights, which in turn gives the controlling party incentives to expropriate minority shareholders (Johnson, La Porta, López-de-Silanes, and Shleifer 2000; Bertrand, Mehta and Mullianathan, 2002).

As with conglomerates, business groups can help firms relax their financial constraints through ICMs or cross pledging (Bena and Ortiz-Molina 2013; Larrain, Sertsios, Urzúa, 2019). However, their more salient agency conflict is between controlling and minority shareholders,

[3] See Bolton and Scharfstein (1998) for an early review.

rather than managerial agency problems. Business groups and conglomerates are also different in a legal sense. Business group firms are legally separate entities, each with their own balance sheet and ownership structure (i.e., different sets of minority shareholders and varying extents of control rights for controlling shareholders). Divisions within conglomerates, in contrast, are fully-owned business units of a single large entity. This distinction implies that transactions between business group firms are across firms' boundaries, while for divisions of a conglomerate transactions remain within the realm of a firm.

Early work attempted to assess whether the benefits of conglomeration outweigh the costs by comparing firms' valuations across different organizational forms. Lang and Stulz (1994) and Berger and Ofek (1995) show that conglomerates are valued at a discount relative to the sum of standalone counterparts. Their interpretation of this result was that conglomerates destroy value, on average. However, later findings showed that the conglomerate discount was mostly due to mismeasurement and self-selection issues (Villalonga, 2004; Maksimovic and Phillips, 2002; Campa and Kedia, 2002). Self-selection also helps to explain the differences between standalone and business group firms (Almeida and Wolfenzon, 2006a). Ultimately, gauging the effects of conglomeration on firms' financial policies and performance requires the estimation of causal effects.

Two papers trying to estimate the causal effects of conglomeration or business group affiliation are Seru (2014) and Larrain, Kortsios, and Urzua (2019). Seru (2014) studies the causal effect of conglomeration on firms' innovation. He focuses on innovation, as Williamson (1985) argues that this is one of the outcomes on which a firm's internal organization might have a significant impact. Seru (2014) exploits M&A transactions for his identification strategy. He considers a sample of standalone target firms, some of which were acquired by a conglomerate (treated group) and some for which the takeover failed for exogenous reasons (control group). Using a difference-in-differences approach and patent-based metrics, Seru (2014) finds that relative to firms that remained as standalone, firms acquired in diversifying mergers produce fewer and less novel innovations after the acquisition. However, target firms acquired in non-diversifying acquisitions exhibit no such differences. Overall, his evidence is consistent with the "new-toy" effect in diversified firms, as documented by Schoar (2002).

Larrain et al. (2019) estimate the causal effects of losing a business group affiliation on firms' financing and investment decisions and their operational performance. They study pairs of firms in unrelated industries operating under the same controlling shareholder. These pairs of firms are almost always wholly owned by the controlling shareholder, so while the focus is on business groups, the setting is also akin to the simplest structure of conglomerates. They tackle

the issue of causality through an instrumental variables approach. They exploit regulatory and commodity shocks in some industries as a source of exogenous variation. If a shock affects one firm in the group, this increases the probability that the group breaks up, potentially leaving the unaffected firm as standalone for exogenous reasons. Larrain et al. (2019) find that leaving a group, or conglomerate, leads to a substantial reduction in debt financing and investment, suggesting that business groups have a financial advantage. However, the investment cut comes mostly from underperforming firms. So, while being in a business group allows firms to obtain more financing, those funds are not always used wisely. The authors find that firms that leave a business group do not exhibit a different operational performance relative to firms that stay. This finding suggests that the financing advantage and the agency problems cancel out, on average. The main caveat that remains is that of external validity. It is unclear whether in larger conglomerates, or business groups, where political connections are more prevalent and stronger agency problems prevail, the findings would be similar.

3.1.1-Organizational form and product market

In this section, I review the literature that relates organizational form and product-market competition. For now, by organizational form, I refer to whether a firm operates as a standalone firm or as part of a business group or conglomerate.

Khana and Tice (2001) were among the first to study how organizational form relates to product market competition. They examine the differential response of discount retailers to Walmart's entry in their market, according to whether they are a division of a diversified retailer or a focused firm. Khana and Tice (2001) find that discount divisions of diversified retailers decide more quickly whether to quit or stay and fight. They also find that they are more likely to transfer funds away from failing discount divisions.

Boutin, Cestone, Fumagalli, Pica, and Serrano-Velarde (2013) exploit French data to study whether the financial advantage of business groups affects the entry decisions of potential rivals. Their data contains balance sheet information for firms facing entry threats, as well as for other firms in the business group structure. They find that entry to a firm's industry is negatively related to the cash hoarded by that firm's business group, even after controlling for the firm's financial position. This finding is consistent with a strategic deterrence effect when a firm has the backing of a cash-rich business group.

Bai (2020) studies the differential responses to competition shocks according to firms' organizational form. In particular, he examines the responses of conglomerates relative to standalone firms to trade liberalization. Bai (2020) finds that conglomerates are more likely to

restructure after trade-liberalization episodes, focusing on their core competency. His findings are consistent with the winner-picking hypothesis of Stein (1997).

While there are costs and benefits to conglomerates, all the above papers highlight that conglomerates seem to fare better when competition intensifies. The financial advantage of conglomerates, however, can be of heterogeneous value when measured across a firm's industry life cycle (Klepper, 1996). Maksimovic and Phillips (2008) study this possibility. They show that conglomerates are more successful in reducing the effects of financial dependence on their most productive segments in growth industries. Their findings provide valuable insights into the scenarios in which the financial advantage of conglomerates adds more value.

Another interesting avenue of research is the potential spillovers that business groups or conglomerates may have on standalone firms. Almeida and Wolfenzon (2006b) argue that, in the presence of capital market imperfections, conglomerates find it optimal to allocate scarce capital internally to mediocre projects. This misallocation occurs even when other firms in the economy (e.g., standalone firms) have high-productivity projects in need of funding. The key takeaway of their model is that, under certain assumptions, the bias for internal capital allocation in conglomerates may decrease allocative efficiency in the economy. A recent paper by Naaraayanan and Wolfenzon (2020) tests the predictions of Almeida and Wolfenzon's (2006b) model using Indian data and exploiting a quasi-natural experiment. They examine the response of standalone firms to investment opportunities, according to the degree of conglomeration in the local area. The shock to investment opportunities stems from the construction of a large-scale highway in their area. Consistent with Almeida and Wolfenzon (2006b), they find that standalone firms are more deprived of bank financing in areas more populated by business group firms, despite standalone firms having higher profitability than business group affiliates.

3.2-Changing firm boundaries over time: M&As

Firms' boundaries are not static. They change over time. Firms can expand their scope by investing, purchasing assets, or acquiring other firms, and they can contract by closing plants or divesting assets. While all these changes are important, I restrict my attention in this section to the most dramatic changes in firm boundaries: Mergers and Acquisitions (M&As).[4]

M&As are an important area of research in industrial organization, organizational economics, and corporate finance, with each field having a different emphasis. Given the focus on competition policy, industrial organization scholars tend to focus more on horizontal mergers.

[4] Small and large changes in firm boundaries are not mutually exclusive. Maksimovic, Phillips and Prabhala (2011) find that there is extensive restructuring in firms' boundaries after mergers. In the three years following a merger, the likelihood of selling or closing plants of the target firm increases.

The main tradeoff is that mergers can increase market power — with detrimental effects on consumers — but can also lead to efficiency gains through cost savings (Whinston, 2007). Vertical mergers are often viewed from a similar perspective in the industrial organization literature: Acquisition can be due to market foreclosure motives (Boehm and Sonntag, 2019), or due to potential efficiency gains, such as reducing double-marginalization (Hortacsu and Syverson, 2007; Luco and Marshall, 2020). Organizational economics, given its roots on transaction costs economics and incomplete contracts, has focused more on vertical acquisitions, with a stronger emphasis on the efficiency view. In terms of methodology, economists favor structural methods to simulate merger outcomes (see, e.g., Budzinski and Ruhmer, 2010; Mazzeo, Seim and Varela, 2018).

M&As have also been a highly-researched area in corporate finance. Perhaps due to the early work on managerial agency problems, finance scholars have often emphasized the agency view as a potential driver of mergers (e.g., Moeller, Schlingemann and Stulz, 2005) and the market for corporate control as a possible solution for mismanaged firms (Jensen, 1986; Giroud & Mueller, 2010). Other finance scholars emphasize neoclassical restructuring motives (Maksimovic and Phillips, 2001; Larrain, Tapia and Urzúa, 2017), such as regulatory or industry shocks (Harford, 2005), whereas a third set of authors stress the role of market misvaluations in M&As (Shleifer and Vishny, 2003; Rhodes-Kropf and Viswanathan, 2004). In terms of methodology, finance scholars favor reduced-form estimation methods; they place more attention on event-study analyses to infer the motivations underlying M&As, and they tend to examine M&As from several industries at the same time instead of focusing on single industries.

Given the vast body of finance research on M&As, I refer the reader to excellent summaries in this area (Andrade, Mitchell and Stafford, 2001; Betton, Eckbo, and Thornburn, 2008). I focus on contributions in the corporate finance literature that more directly relate to topics in the industrial organization and organizational economics' literatures.

3.2.1-Efficiency vs. anticompetitive motives in M&As

Several finance scholars have tried to gauge whether anti-competitive motives or efficiency motives are more relevant in M&As (Eckbo 1983; Fee and Thomas, 2004; Shahrur, 2005; and Shenoy, 2012). Their approach is to infer merger motivations from stock market responses to both horizontal and vertical merger announcements. These studies examine returns not only for the merging firms but also for rivals, customers, and suppliers. While inferring merger motivations from announcement returns can only provide indirect evidence, the papers mentioned above all reach a similar conclusion: On average, the efficiency motive is the most likely explanation for the patterns exhibited in the data.

Fairhurst and Williams (2017) offer new evidence on M&As' motives using a more granular approach within the return-announcement methodology. They construct a measure of geographic overlap for bidders and targets and examine stock market reactions to horizontal mergers announcements according to this measure. Fairhurst and Williams (2017) find positive stock-market reactions for local rivals. This finding suggests that competitors expect to benefit from price hikes stemming from an increase in market power. In addition, they find a worse market reaction by customers of the merged firm when there is geographic overlap, also consistent with an increase in market power. The main takeaway from Fairhurst and Williams (2017) is that there is a hidden heterogeneity in the stock market return responses by market participants. Exploring this heterogeneity further, using stock market reactions as a methodology, seems essential to understand motives in M&As better.[5]

A recent paper by Dong, Massa, and Zaldokas (2019) takes a different approach to examine possible anticompetitive motives in M&As. The authors explore the effects of regulations that discourage illegal cartel operations on M&A activity. If these laws lead to an increase in M&A activity, it would suggest that many M&A have anticompetitive motives, as legal forms of market power concentration replace explicit or tacit collusion. Consistent with this intuition, they find that M&A activity goes up after the passage of leniency laws. The authors also find a strong negative stock market reaction for the customers of the merging firms in the post-regulation period, which is also consistent with merging firms increasing their market power through acquisitions.

3.2.2-Sources of synergies in M&As

Besides market power, the other source of gains in M&As is synergies or efficiency gains. The concept of synergy is that the whole is greater than the sum of its parts. While this concept is easy to understand, the sources of synergies have been hard to pin down empirically. I review three recent papers that have tried to shed light on this issue.

Hoberg and Phillips (2010b) study synergies from a product-market angle, using text-based analysis from firms' product descriptions in their financial statements. They provide several pieces of evidence that point towards asset complementarity being an important source of synergies for the merging firms. First, they document that M&A transactions are more likely between firms that use similar product-market language. Next, they study long-term outcomes, such as profitability, of the merging firms. They find that outcomes are better when the merging firms are closer in the product-market space and if the transaction increases the acquirer's

[5] Nain and Wang (2018) also find evidence consistent with horizontal deals reducing product-market competition when examining minority stake acquisitions.

differentiation relative to its rivals. Their findings are consistent with merging firms exploiting synergies to create new products and increase product differentiation.

Bena and Li (2014) extend Hoberg and Phillip's (2010b) analysis into the innovation space. They develop an economy-wide patent-merger dataset for the U.S. and find that technological overlap between pairs of firms has a positive effect on the likelihood a transaction takes place. They also show that acquirers that were previously technologically linked to their targets produce more patents after the merger. Overall, their results point towards complementarities in innovation as a source of synergies.

A recent paper by Bai, Jin, and Serfling (2020) examines whether management practices contribute to value creation. While studying management practices as a source of firm value has gained substantial attention in recent years (Bloom, Eifert, Mahajan, Mckenzie and Roberts, 2013; Bloom, Propper, Seiler, and Van Reenen, 2015), their role on M&As has been largely overlooked in the finance literature. Bai et al. (2020) combine the Management and Organizational Practice Survey (MOPS) with the Census' Longitudinal Business Database (LBD) to perform their analyses. They show that firms with more structured management practices tend to acquire firms with less formal management practices. Importantly, they show that following the acquisition, target establishments adopt more structured practices. As these changes come in hand with performance increases, the authors conclude that management practices are a crucial driver of value creation in M&As.

3.2.3-Industry links and M&As

Research on networks shows that industry links are key to our understanding of the economy (Barrot and Sauvagnat 2016; Carvalho, Nirei, Saito, and Tahbaz-Salehi 2018). For instance, Acemoglu, Carvalho, Ozdaglar, and Tahbaz-Salehi (2012) find that the transmission of shocks through input-output networks can potentially turn microeconomic shocks into aggregate cycles. Considering this view, industrial links may also play a role in merger waves. Ahern and Harford (2014) examine this idea. They represent the economy as a network of industries connected through customer and supplier trade flows and show that M&As propagate through these links, even in the absence of direct vertical relations. They also show that economy-wide mergers are driven by industries that are centrally located in the product-market network.

While Ahern and Harford's (2014) work is important to understand the role of industry links in merger waves, they do not directly address which characteristics make firms more likely to be targets in vertical acquisitions. Fresard, Hoberg, and Phillips (2020) shed light on this issue using novel measures of vertical relatedness between firms. To construct these measures, they

link product vocabularies from the Bureau of Economic Analysis (BEA) Input-Output tables to firms' product descriptions in their financial statements (10Ks). They show that R&D-intensive firms are less likely to become targets in vertical acquisitions, whereas firms with patented innovation are more likely to be target firms. Fresard et al. (2020) argue that when firms are at the R&D stage, incentives would be stifled by an acquisition, as hold-up problems are more likely to occur. However, when target firms are at the patenting stage, these conflicts are less severe. Their findings are consistent with the incomplete contracts' view.

3.3-Hybrid organizational forms

Firm boundaries are not always as clear cut as complete integration or arm's-length relations. Below, I discuss three cases of hybrid organizational forms: partial ownership, strategic alliances, and franchising.

3.3.1-Partial ownership between firms

One possible solution to the holdup problem is full integration, by which one firm acquires the other (i.e., an acquisition, as in Section 3.2). An alternative method to overcome incentive and holdup problems are minority equity stakes (Aghion and Tirole, 1994). One of the first papers to provide evidence on the reasons for — and potential consequences of —minority block ownership by corporations was Allen and Phillips (2000). Using U.S. data, they document that the stock prices of target firms increase with the announcement of a corporate blockholder. They also document that the industry-adjusted operating cash flow of target firms increases after the minority acquisition when targets operate in R&D-intensive industries. Allen and Phillips' (2000) findings support the view that block ownership purchases can alleviate contractual problems among firms. Fee, Hadlock, and Thomas (2006) also examine cross-equity stake holdings, but in the context of customer-supplier relations. Consistent with the view that partial equity stakes can help mitigate contractual incompleteness problems, they document that customer firms are more likely to have equity stakes in R&D-intensive suppliers.

While Allen and Phillips (2000) and Fee et al. (2006) provide compelling evidence for the use of partial equity stakes in resolving contractual incompleteness problems, they do not tackle the question of when partial integration is preferable over complete integration. Ouimet (2013) offers an explanation by contrasting minority and majority acquisitions. She finds evidence consistent with minority acquisitions being preferred when preserving the target's managerial incentives is important, and when the target firm is financially constrained. In other words, majority acquisitions might not be the best alternative to mitigate holdup problems when an acquisition stifles the innovation incentives of the target firm. Her arguments are close to those in

Fresard et al. (2020), in the sense that both papers conclude that when providing incentives for a target firm is essential, a complete acquisition might be suboptimal.

The underlying assumption in previous papers is that the purchase of a minority equity stake is a long-term commitment. However, minority equity stakes may also be transitory in nature. Povel and Sertsios (2014) argue that sometimes minority equity stakes (toeholds) are acquired to obtain additional information about the potential synergies with the target. In their model, a minority equity stake allows the acquirer to estimate synergies with the target more precisely by increasing the amount of information transmitted (e.g., through a board seat). Consistent with their model, Povel and Sertsios (2014) provide evidence that majority acquisitions are more likely preceded by minority equity stakes when information asymmetry is important.

3.3.2-Strategic alliances

Strategic alliances, such as joint ventures or licensing deals, are another type of hybrid organizational form. In simple terms, they are long-term contracts between distinct organizations. In recent years, this type of arrangement has become common in the U.S corporate landscape (Robinson, 2004).

Robinson (2008) provides a rationale for strategic alliances as an organizational form. In his model, certain actions, such as picking winning projects and allocating more capital ex-post to these projects, are non-contractible within organizations. However, they are legally enforceable between organizations. In this context, strategic alliances might improve the ex-ante incentives of division managers in charge of longshot projects, as managers have the guarantee that funds will not be taken away from their projects in the absence of immediate results. Consistent with the model predictions, Robinson (2008) empirically shows that alliances are more likely used when the activity in question is riskier than a firm's primary business.

Alliances and minority equity stakes often come hand-in-hand (Allen and Phillips 2000; Fee et al., 2006). Mathews (2006) formulates a theory for this observation. The starting point of his model is that the efficiency benefits of alliances often require the transfer of knowledge from an entrepreneurial firm to its established partner. This assumption finds support in data, as firms that are part of strategic alliances increase knowledge flows, measured by patent citations (Gomes-Casseres, Hagendoorn, and Jaffe, 2006). The transfer of knowledge, however, can motivate the entry of the established partner into the entrepreneurial firm's market. In this scenario, a partial equity stake on the entrepreneurial firm can be the optimal solution, as it mitigates the entry incentives of the established firm.

3.3.3-Franchising

Franchising is one of the most common forms of partnership agreements. In the U.S., this organizational form represents 1/3 of retail sales (Sertsios, 2015) and accounts for close to 5% of the total employment (Fan, Kuhn and Lafontaine, 2017). Franchising agreements lie between vertical integration and arm's-length relations: The franchisor contracts with a franchisee the sale of goods or services under its brand-name in exchange for an initial franchise fee and an ongoing royalty rate on sales. These contracts are typically long-term, with an average of over ten years. Franchise contracts balance proving powerful incentives to the franchisee, by making it the residual claimant on an outlet's profits, with the franchisor retaining control rights over the quality of goods and services. Franchisors enforce quality standards by threatening to terminate a contract before it expires if the outlet is not up to their standards during inspections.

While franchising as an organizational form has been studied mostly in the economics literature, it also has received some attention in the finance literature (e.g., Brickley and Dark, 1987; Klein, 1995; Bernstein and Sheen, 2016). I briefly summarize recent research on franchising, with an emphasis on how firms' financial and investment decisions interact with this organizational form.

Franchisors ask franchisees to invest upfront in the opening of a new unit (i.e., equipment, furniture, leasehold improvements, etc.), providing little financial assistance so that franchisees have more "skin-in-the-game." Sertsios (2015) shows that franchisors strategically modify the amount of investment they ask franchisees to make to deal with agency problems. He exploits the passing of state-level good-cause termination laws as a source of exogenous variation for the identification strategy. These laws restrict franchisors' ability to terminate a franchising contract at will, exacerbating agency conflicts as it is harder to terminate franchisees that are not fulfilling the franchisors' quality standard requirements. Sertsios (2015) finds that franchisors that were operating in states where good-cause laws were passed increased initial investment requirements, especially if investments have little salvage value. His findings are consistent with the idea that the initial investment requirements can act as a bonding mechanism in mitigating agency problems (Klein and Leffler, 1981; Williamson, 1983). In this context, franchisors force franchisees to increase the amount that would be lost in case of termination to overcome the weaker incentives associated with a lower likelihood of contract termination.[6]

[6] Kosova and Sertsios (2018) complement this finding using data from the hotel industry. They show that franchised hotels are larger and more likely in a higher quality tier when they are farther away from the parent headquarters and thus harder to monitor. These hotels also lose more in case of contract termination.

Bernstein and Sheen (2016) study the effects of private equity financing by levering on unique features of the franchising system. They exploit the fact that many franchisors have mixed operations — franchising some outlets while retaining others under management control. The benefit of operating company managed units is that franchisors have more influence over the way these outlets are run. The cost is weaker incentives since the manager of an outlet is a company employee and not a residual claimant. Bernstein and Sheen (2016) find that after a buyout of a franchisor in the restaurant industry, its company managed units (treated outlets) become cleaner, safer, and better maintained than its franchised units (control outlets). Their findings are consistent with private-equity buyouts having positive effects on firms' operational performance.

Fan et al. (2017) examine the effects of financial constraints on franchising activity. In their model, they relate housing collateral value with franchisees' effort. They argue that to the extent that the cost of default increases with the collateral pledged for the investment, more collateral increases franchisees' effort. As a result, franchising becomes a more attractive organizational form than company management when the value of collateral is higher. Fan et al. (2017) take the model to the data and simulate a 30% decrease in collateralizable housing wealth — a figure consistent with the decline in collateral value during the Great Recession. They find that this decline is associated with chains deferring their entry into franchising and, conditional on being in operation, chains would open fewer franchised outlets. They estimate that over ten years, the total number of outlets (franchised and company managed) would decline by 9%. Overall, Fan et al. (2017) present important new evidence on how financial conditions can affect firms' organizational form, with significant effects on the economy.

3.4-Internal organization of the firm

Finance scholars have devoted considerable attention to the study of incentives within organizations. Topics in this literature include managerial agency conflicts (Jensen and Meckling, 1976), executive compensation (Murphy, 2013), the characteristics of controllers and managers (Bennedsen, Nielsen, Perez-Gonzalez and Wolfenzon, 2006), and the relationship between ownership concentration and firm value (Morck, Shleifer, and Vishny 1988; Larrain, Roosenboom, Sertsios and Urzua, 2020). In recent years, with the rise of corporate-labor topics, new areas of research at the intersection of corporate finance and firms' internal organization have gained more attention. The themes studied comprise the role of non-executive ownership (Hochberg and Lindsay, 2010; Bova, Kolev, Thomas, and Zhang, 2015), internal labor markets (Tate and Yang, 2015), employee absenteeism (Bennedsen, Tsoutsoura, and Wolfenzon, 2019), within-firm pay inequality (Mueller, Ouimet, and Simintzi, 2017), teamwork (Cornelli, Simintzi, and Vig, 2020) and labor-market mobility (Klasa, Ortiz-Molina, Serfling, and Srinivasan 2018;

Zeng, 2020), among others. The literature on firms' internal organization and corporate finance is extensive, and summarizing it here goes beyond the scope of this paper. In this section, I restrict my attention to research that relates ownership structures and hierarchies with product-market competition.

3.4.1-The effects of competition on within-firm organization and ownership

Guadalupe and Wulf (2010) examine the impact of foreign competition — measured by import penetration -— on corporate hierarchies. Understanding hierarchies is relevant, as hierarchies are a form of governance through which managers supervise their subordinates. Guadalupe and Wulf (2010) use a unique panel dataset containing information on the internal organization of large U.S. manufacturing firms to construct measures of management layers. They find that product-market competition causes firms to flatten their organizations, which is consistent with the allocation of authority to lower-level business units.

Bena and Xu (2017) extend this analysis by examining the effects of competition on ownership structures. They study privately held European firms for which data on inside and outside shareholders is available. This data allows them to study the effects of competition in a context where the main agency problem is not managerial, but that of inside versus outside equityholders. They find that competition reduces inside ownership, which is consistent with a curtail in private benefits of control. Taken together, the findings by Guadalupe and Wulf (2010) and Bena and Xu (2017), highlight that competition plays a crucial role in curbing misalignment problems within organizations.

3.4.2-Common ownership

With the rise of institutional investment, it is nowadays frequent for institutional investors to have ownership stakes in competing firms (He and Huang, 2017; Azar, Schmalz, and Tecu, 2018). Such "common ownership" could have anticompetitive effects if rival firms sharing an owner have reduced incentives to compete in the product markets, or if it facilitates coordination between firms.

The potential anticompetitive effects of common ownership have spurred the interest of academics in the last few years. Lewellen and Lowry (2018) highlight that since 2017 at least twelve papers have documented that common ownership has real effects. Perhaps the most visible of these papers is the one by Azar, Schamlz, and Tecu (2018). Using data from the airline industry, they show that ticket prices rise with shared ownership. To get at causal effects, the authors exploit variation triggered by a consolidation event in the asset management industry.

The main takeaway from this paper is that common ownership reduces product market competition, so regulators should factor in these effects when designing competition policy.

Following the initial set of papers finding real effects of common ownership came an almost equally large wave of papers documenting the opposite, namely, that common ownership does not have anti-competitive effects in the product markets. Some of these papers argue that prior results can be attributed to confounding factors (Lewellen and Lowry, 2018). Others directly refute the findings of Azar et al. (2018) in the airline industry (Dennis, Gerardi, and Schenone, 2019). A recent paper by Koch, Panayides, and Thomas (2019) is particularly telling. Using a variety of industries, several measures of common ownership, and a myriad of potential outcomes (profitability, output prices, etc.), the authors provide convincing evidence that common ownership does not influence product-market competition. In their multiple analyses, they find point estimates close to zero with tight bounds.

Overall, while the potential anticompetitive effects of common ownership are still open for debate, the recent evidence seems to side with rejecting any significant effects. It appears that equity stakes might be too small to create enough control rights (Larrain, Sertsios, and Urzúa, 2020) or to have a substantial impact on managers' incentives to internalize competitive effects on rival firms (Gilje, Gormley, Levit, 2019).

4-Recent Developments

This special issue is a joint effort between the Journal of Corporate Finance and the International Finance and Banking Society (IFABS) conference held in Santiago, Chile, in December 2018. Among the more than 100 papers presented, some were invited to submit to the special issue. After a thorough editorial process, only four papers made their way to this special issue. These papers contribute directly, or indirectly, to the literature that intersects corporate finance, industrial organization, and organizational economics.

Banerji and Fang (2020) study an incumbent firm's capital structure decision in the context of a winner-take-all contest. In their model, there is an entrepreneurial firm (the incumbent) and a cash-rich potential entrant. The entrepreneurial firm chooses its capital structure anticipating potential entry. Due to the limited liability effect (Brander and Lewis, 1986), high debt makes the incumbent a more aggressive competitor. This aggressiveness may discourage the entry of the rival firm. However, conditional on entry, as competition is more intense, payoffs fall for all firms. In equilibrium, the optimal capital structure is either a high-leverage structure, which better deters entry, or a pure-equity structure when barriers to entry are low. Banerji and Fang (2020) contribute to the literature on financing and industrial organization by featuring

"cash-burning" competition, modeled as an all-pay auction. This type of competitive setting resembles many markets in the digital era, where only one firm often captures the lion's share of the market.

Thapa, Rao, Farag, and Koirala (2020) contribute to the literature on firms' organizational form and corporate finance. They study the differential effects for standalone and business group firms of a credit reform that strengthen creditor rights in India. If stronger creditor rights increase credit supply, financially constrained firms should benefit the most from the reform. Thapa et al. (2020) find that standalone firms increase their borrowing, investment, and operational performance more than business group firms in the post-reform period. Their findings are consistent with the idea that standalone firms benefit more from an expansion in credit given their lack of internal financial support.

Adra, Barbopoulos, and Saunders (2020) study the impact of monetary policy on M&A outcomes. They find that an increase in federal funds rates decreases the likelihood of deal completion and is associated with significant financing challenges in the post-acquisition phase. Adra et al. (2020) contribute to the literature on merger waves (Shleifer and Vishny, 2003; Rhodes-Kropf and Viswanathan, 2004; Harford, 2005) by showing that tight monetary policy has an important effect on how and when firms reshape their boundaries.

Chen, King, and Wen (2020) contribute to the literature on firms' internal organization by examining the role of non-executive ownership on firms' incentives. They find that higher non-executive ownership via retirement plans is associated with a drop in loan spreads. Compared to shareholders, non-executive employees are more sensitive to firm risk as their human capital is more closely related to a firm's solvency. So, to the extent that non-executives can influence firms' strategic plans, firms may take on less risk when non-executive ownership is high (Bova et al. 2015) and obtain lower loan spreads consequently. Consistent with this view, Chen et al. (2020) find a more pronounced negative association between non-executive ownership and loan spreads when: i) CEOs have stronger financial incentives to take on risk; ii) CEOs' characteristics are indicative of risk-taking preferences (CEO gender, age, etc.); and iii) firms face higher labor risk.

5-Conclusions

Corporate finance has been expanding its focus, borrowing elements from related areas in economics. In this paper, I summarize the literature on the interaction between corporate finance and the fields of industrial organization and organizational economics. The combination of these fields has led to much progress in the last four decades. Part of this progress has been possible

due to the exploitation of novel and detailed datasets. Some of the empirical work in this area adopted the single-industry study methodology, prevalent in industrial organization. The single-industry approach has advantages and disadvantages. An advantage is that the level of detail in single-industry studies allows for more precise testing of the theories. The cost is a more limited scope in terms of external validity. Corporate finance research would probably benefit from striking a balance between single- and multiple-industry approaches.

Some topics in this literature have received substantial attention (e.g., debt and product market competition), whereas others are yet to receive it (e.g., hierarchies and firm financing). Given the changing labor-market dynamics, it is likely that in the years to come, we will see an increase in the amount of work that relates firms' financial policies with how they organize their labor force.

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Table 1: Corporate Finance and Industrial Organization

Panel A: Corporate finance and competition

Year	Author(s)	Approach	Topic	Empirical setting & data sources	Main findings
1986	Brander and Lewis	Theory	Debt and competition		An exogenous increase in a firm's debt would lead to more aggressive behavior towards competitors
1988	Maksimovic	Theory	Debt and collusion		High debt destabilizes cartel agreements.

1990	Bolton and Scharfstein	Theory	Debt and competition		High debt increases predatory behavior by rivals. In a competitive equilibrium, firms self-select into risky vs. safe financial and production strategies.
1991	Maksimovic and Zechner	Theory	Debt and competition		
1992	Phillips	Theory	Debt and competition		High debt acts as a commitment towards higher investment costs, reducing firms' aggressiveness in the product markets.
1995	Phillips	Empirical	Debt and competition	Industries: Fiberglass insulation, tractor-trailer, polyethylene, and gypsum. Sources: Annual reports for fiberglass and gypsum; Bureau of Mines; Census Department Annual Survey of Manufactures; R.L. Polk & Co; Modern Plastics anual issues. Years: 1980-1990.	In three industries, output is negatively associated with the average industry debt ratio; in the gypsum industry the association is positive.

1995	Chevalier (a)	Empirical	Debt and competition	Supermarket industry. Sources: American Chamber of Commerce Researchers Association's quarterly price index; Progressive Grocer's Market Scope; quarterly editions of Mergers and Acquisitions. Years: 1981-1990.	Prices rise following LBOs in local markets in which the LBO firm's rivals are also highly leveraged
1995	Chevalier (b)	Empirical	Debt and competition	Supermarket industry. Sources: Progressive Grocer's Market Scope; quarterly editions of Mergers and Acquisitions. Years: 1985-1990.	Supermarket chains are more likely to enter and expand in a local market if a large share of the incumbent firms undertook LBOs
1997	Kovenock and Phillips	Empirical	Debt and competition	Ten manufacturing industries. Source: Longitudinal Research Database (LRD), Census of Manufacturers. Years: 1979-1990.	Recapitalizing firms are more likely to close plants and less likely to invest in concentrated industries.
1998	Zingales	Empirical	Debt and competition	Trucking industry. Source: American Trucking Association. Years: 1976-1985.	After the deregulation, firms with high pre-deregulation leverage were less likely to survive and more likely to exit.

2004	Povel and Raith	Theory	Debt and competition		Ex-ante, debt increases a firm's marginal cost and makes it less aggressive; ex post, debt does not make firms more aggressive, because the optimally designed financial contract eliminates risk-shifting incentives. The overall effect is that debt makes firms less aggressive.
2006	Campello	Both	Debt and competition	115 industries. Source: Compustat. Years: 1971-12000.	For firms with low leverage levels, higher debt boosts their competitive performance, but for firms with high debt levels it weakens it.
2007	Haushalter, Klasa, and Maxwell	Empirical	Cash and competition	Manufacturing firms. Source: S&P 500 manufacturing firms; Compustat. Years: 1993-1997.	Firms operating in industries with higher predation

					risk have higher cash holdings.
2010	Fresard	Empirical	Cash and competition	105 industries. Sources: Compustat; U.S. import data. Years: 1973-2006.	Firms with larger cash holdings before tariff reductions perform significantly better than their industry peers after competition intensifies.
2010	Hoberg and Phillips (a)	Empirical	Investment and strategic interactions	Multiple industries. Sources: Compustat; CRSP; Bureau of Labor Statistics (BLS). Years: 1972-2004.	In competitive industries, high industry-level stock market valuations and investment are followed by lower operating cash flows and predictably low abnormal returns.
2014	Hoberg, Phillips, and Prahbala	Empirical	Cash, payout and competition	Multiple industries. Sources: Compustat, CRSP, text-analysis from firms' 10Ks. Years: 1997-2008.	Firms facing stronger product-market threats exhibit more conservative cash and payout policies.

2016	Fresard and Valta	Empirical	Investment and competition	133 industries. Sources: Compustat; U.S. import data. Years: 1974-2005.	Incumbent firms reduce investment when facing entry threats.
2016	Povel, Sertsios, Kosova and Kumar	Both	Investment and strategic interactions	Hotel industry. Sources: Smith Travel Research (STR) Census and performance data; Census Bureau; BLS. Years: 1940-2009.	Investments made during local booms underperform similar hotel investments made outside boom periods.
2017	Cookson	Empirical	Debt and competition	American casino industry. Sources: Casino City's Online Gaming Business Directory; Compustat; CRSP. Years: 2003-2012.	High leverage prevents incumbents from responding to entry threats.
2017	Billett, Garfinkel, and Yu	Empirical	Information asymmetry and competition	Multiple industries. Sources: Compustat; CRSP; Institutional Brokers' Estimate System (I/B/E/S). Years: 1981-2011.	Higher information asymmetry due to the loss of analyst coverage leads to worse industry-adjusted sales growth.
2019	Dasgupta and Zaldokas	Empirical	Debt and competition	Multiple industries, 63 countries. Sources: Compustat Global and North America; Getting the Deal Through; LexisNexis. Years: 1990-2012.	When competition increases due to the passing of leniency laws, firms increase their financial

					flexibility by financing investments with equity. Firms respond by increasing their capital investment when rivals' restructuring news are positive, if they have low debt.
2020	Simintzi	Empirical	Debt and competition	Manufacturing firms in the U.K. Sources: Bureau van Dijk's AMADEUS; hand collected data. Years: 2002-2008.	
2020	Ferres, Ormazabal, Povel,and Sertsios	Empirical	Debt and collusion	56 industries, U.S. firms involved in international cartels. Sources: Private International Cartels (PIC) database; Compustat. Years: 1990-2012.	Cartel firms exhibit lower leverage during collusion periods; leverage returns to pre-collusion levels once the cartel breaks down.
2020	Heath and Mace	Empirical	Investment and market power	Multiple industries. Sources: U.S. Patent and Trademark Office (USPTO); Compustat. Years: 1989-2002.	Firms reduce their R&D expenses after experiencing an increase in market power.
2020	Bustamante and Fresard	Both	Investment and strategic interactions	Multiple industries. Sources: Compustat; Text-based Network Industry Classification (TNIC). Years: 1996-2011.	Sizable investment peer effect in product markets, especially in concentrated

					industries.
2020	Hoberg and Maksimoic	Empirical	Investment and product life cycle	Multiple industries. Sources: Compustat; 10-K text-based descriptions of product life-cycles. Years: 1997-2017.	Conditioning on product life cycle improves significantly the explanatory power of investment-q models.

Panel B: Corporate finance and customer-supplier relations

Year	Author(s)	Approach	Topic	Data sources	Main findings
1984	Titman	Theory	Firms' financials and customer-supplier relationships		A firm's liquidation can impose costs on its customers, and suppliers. In response, the firm may choose a lower leverage ratio to improve its terms of trade.
1988	Titman and Wessels	Empirical	Firms' financials and customer-supplier relationships	Multiple industries. Sources: Compustat; BLS. Years: 1974-1982.	Firms with more unique products have lower financial leverage.
1991	Maksimovic and Titman	Theory	Firms' financials and product quality		High financial leverage can reduce a firm's incentives to

					produce high-quality goods.
2007	Kale and Shahrur	Empirical	Firms' financials and customer-supplier relationships	Multiple industries. Sources: Compustat; Compustat's industry segment files; Bureau of Economic Analysis (BEA) Input-Output tables. Years: 1984-2003.	A firm's financial leverage is decreasing in the level of R&D intensities of their customers and suppliers. Firms in bilateral relations are more likely to maintain lower leverage ratios if they produce durable goods.
2008	Banerjee, Dasgupta, and Kim	Empirical	Firms' financials and customer-supplier relationships	U.S. manufacturing firms. Sources: Compustat; Compustat's industry segment files. Years: 1979-1997.	Suppliers experience a negative abnormal upon the announcement of a downstream firm's LBO. Following the completion of a downstream LBO, suppliers' operating margins decline, especially if those suppliers have likely made relations
2009	Brown, Fee, and Thomas	Empirical	Firms' financials and customer-supplier relationships	Multiple industries. Sources: Compustat; Compustat's industry segment files; Factiva; recaps from Denis and Denis (1993); Securities Data Corporation (SDC) Mergers & Acquisitions database. Years: 1980-2001.	

					hip-specific investments.
2011	Matsa	Empirical	Firms' financials and product quality	Supermarket industry. Sources: Commodity and Services Survey (BLS);Trade Dimensions Retail Site Database; Compustat. Years: 1988-2004.	Supermarket stockouts are negatively correlated with measures of corporate liquidity and positively correlated with measures of financial constraints.
2013	Phillips and Sertsios	Empirical	Firms' financials and product quality	Airline industry. Sources: Transtats and Travel Consumer Reports (Bureau of Transportation Services); Compustat; CRSP; BEA; ASCEND. Years: 1997-2008.	Product quality decreases in periods of financial distress relative to non-distress periods; it increases during bankruptcy episodes relative to distress periods.
2017	Campello and Gao	Empirical	Firms' financials and customer-supplier relationships	U.S. manufacturing firms. Sources: Compustat; Compustat's industry segment files; Dealscan. Years: 1985-2010.	Supplier firms with higher customer concentration face higher interest rates in

					loan contracts.
2018	Kini, Shenoy, and Subramaniam	Empirical	Firms' financials and product quality	97 industries. Sources: Food and Drug Administration (FDA); Consumer Product Safety Commission (CPSC); National Highway Traffic Safety Administration (NHTSA); Compustat; CRSP. Years: 2006-2010.	Financial distress is associated with more recalls and with the severity of the product failure underlying the recall.
2020	Moon and Phillips	Empirical	Firms' financials and customer-supplier relationships	Multiple industries. Sources: Compustat; 10-K text-based data of purchase obligations. Years: 2004-2010.	Firms that contract with suppliers more intensively maintain lower financial leverage ratios.
2020	Towner	Empirical	Firms' financials and customer-supplier relationships	Hospital industry. Sources: American Hospital Directory (AHD); Centers for Medicare and Medicaid Services (CMS). Years: 2008-2012.	Reimbursement rates increase with hospitals' debt. The effect is stronger for hospitals with weaker ex-ante bargaining power.

Table 2: Corporate Finance and Organizational Economics

Panel A: Conglomerates and business groups

Year	Author(s)	Approach	Topic	Empirical setting & data sources	Main findings

1994	Lang and Stulz	Empirical	Conglomerates	Multiple industries. Sources: Compustat; Compustat's industry segment files. Years: 1978-1990.	Diversified firms have lower valuation than comparable portfolios of pure-play firms.
1995	Berger and Ofek	Empirical	Conglomerates	Multiple industries. Sources: Compustat; Compustat's industry segment files. Years: 1986-1991.	Conglomerates are valued at a discount relative to the sum of standalone counterparts.
1997	Stein	Theory	Conglomerates		Conglomerates can create value by picking winner projects.
2000	Rajan, Servaes, and Zingales	Both	Conglomerates	Multiple industries. Sources: Compustat; Compustat's industry segment files. Years: 1979-1993.	Diversity in resources and opportunities between divisions in diversified firms can lead to inefficient investment decisions.
2001	Khana and Tice	Empirical	Conglomerates and competition	U.S. discount department store industry. Sources: Directory of Discount Department Stores; Directory of Corporate Affiliations Who Owns Whom; Wards Business Directory. Years: 1975-1996.	Discount divisions of diversified retailers are quicker than focused firms in deciding to quit or to stay and fight.
2002	Bertrand, Mehta and Mullanaithan	Empirical	Business groups	Multiple industries, Indian business groups. Source: Prowess. Years: 1989-1999.	Significant evidence of tunneling in business groups.
2002	Matsusaka and Nanda	Theoretical	Conglomerates		Internal resource flexibility exacerbates the overinvestment agency problem.
2002	Maksimovic and Phillips	Both	Conglomerates	Manufacturing firms. Source: Plant-level data from LRD, Census Bureau. Years: 1974-1992.	Neoclassical explanation to understand the differences between conglomerate

					s and standalone firms.
2002	Campa and Kedia	Empirical	Conglomerates	Multiple industries. Sources: Compustat; Compustat's industry segment files. Years: 1978-1996.	The diversification discount is due to self-selection. Firms that diversify experience a net reduction in productivity.
2002	Schoar	Empirical	Conglomerates	Manufacturing firms. Source: Plant-level data from LRD, Census Bureau; Compustat. Years: 1977-1995.	Acquired plants increase productivity, but incumbent plants suffer.
2004	Villalonga	Empirical	Conglomerates	Multiple industries. Sources: Compustat; Business Information Tracking Series (BITS), Census Bureau. Years: 1989-1996.	Diversified firms are valued at a premium relative to comparable standalone firms when measuring segments using a more detailed database.
2006	Almeida and Wolfenzon (a)	Theory	Business groups		When setting up a new firm, a pyramid allows a family to access all retained earnings of a firm it already controls.
2006	Almeida and Wolfenzon (b)	Theory	Business groups' externalities		Business groups' bias for internal capital allocation can decrease allocative efficiency, because a substantial presence of business groups might make it harder

					for other firms in the economy to raise capital.
2008	Mathews and Robinson	Theory	Conglomerates		Internal capital markets provide ex-post resource flexibility at the cost of lack of ex-ante commitment.
2008	Maksimovic and Phillips	Empirical	Conglomerates and industry life cycle	Manufacturing firms. Source: Plant-level data from LRD, Census Bureau. Years: 1974-2000.	Conglomerates are more successful in reducing the effects of financial dependence on their most productive segments in growth industries.
2013	Hann, Ogneva and Ozbas	Empirical	Conglomerates	Multiple industries. Sources: Compustat; Compustat's industry segment files; I/B/E/S; CRSP. Years: 1988-2006.	Coinsurance among a firm's business units can reduce systemic risk in a conglomerate, leading to a lower cost of capital than comparable porfolios of stand-alone firms.
2013	Bena and Ortiz-Molina	Empirical	Business groups	Multiple industries in 38 European countries. Source: Bureau van Dijk's AMADEUS. Years: 2001-2008.	Pyramids arise because they provide a financing advantage in setting up new firms when the pledgeability of assets to outside financiers is limited.
2013	Boutin, Cestone, Fumagalli, Pica and Serrano-Velarde	Empirical	Business groups and competition	Multiple industries for French firms. Source: French Fiscal Administration; Ministry of Industry annual survey:	Entry to a firm's industry is negatively related to the

				Enquete Liasons Financieres yearly survey; Bureau van Dijk's AMADEUS. Years: 1995-2004.	cash hoarded by that firm's business group, even after controlling for the firm's financial position.
2014	Seru	Empirical	Conglomerates	Multiple industries. Sources: Compustat; Compustat's industry segment files; National Bureau of Economic Research (NBER) patent data; USPTO; LexisNexis; SDC. Years: 1978-1990.	Firms acquired in diversifying mergers produce both a smaller number of innovations and also less-novel innovations.
2019	Kandel, Kosenko, Morck and Yafeh	Empirical	Business groups	Multiple industries. Sources: Moody's; Wall Street Journal; Directory of Obsolete Securities. Years: 1926-1950.	Explains why business groups are abstent in the U.S nowadays.
2019	Larrain, Sertsios, Urzúa	Empirical	Business groups	Pairs of firms in unrelated industries with a common owner in 16 European countries. Sources: Bureau van Dijk's AMADEUS; hand collected data on commodity and regulatory shocks. Years: 2009-2013.	Leaving a group leads to a substantial reduction in debt financing and investment.
2020	Bai	Empirical	Conglomerates and competition	Manufacturing firms. Sources: Annual Survey of Manufacturers (ASM) and the Census of Manufacturers (CMF) from the Census Bureau; U.S. import data. Years: 1976-2004.	Conglomerates are more likely to restructure after trade-liberalization episodes, focusing on their core competency.
2020	Naaraayanan and Wolfenzon	Empirical	Business groups' externalities	Multiple industries, Indian business groups. Sources: Prowess; Center for Monitoring of the Indian Economy; Reserve bank of India. Years: 1989-2016.	Standalone firms are more deprived of bank financing in areas more populated by business group firms.

Panel B: M&As

Year	Author(s)	Approach	Topic	Empirical setting & data sources	Main findings

1983	Eckbo	Empirical	Efficiency vs anticompetitive motives in M&As	Mining and manufacturing firms. Sources: Federal Trade Commission's Statistical Report on Mergers and Acquisitions; CRSP; multiple hand collected sources. Years: 1963-1978.	Little evidence that horizontal mergers have collusive or anticompetitive effects.
2004	Fee and Thomas	Empirical	Efficiency vs anticompetitive motives in M&As	Multiple industries. Sources: SDC; CRSP; Compustat; Compustat's industry segment file. Years: 1980-1997.	Little evidence consistent with horizontal mergers increasing monopolistic collusion. The evidence is consistent with improved productive efficiency.
2005	Shahrur	Empirical	Efficiency vs anticompetitive motives in M&As	Multiple industries. Sources: SDC; CRSP; Compustat; Compustat's industry segment file. Years: 1987-1999.	Results inconsistent with collusion and buyer power motives in horizontal M&As.
2010	Hoberg and Phillips (e)	Empirical	Sources of synergies in M&As	Multiple industries. Sources: Developed product descriptions from firms' 10-Ks in SEC's EDGAR database; SDC; CRSP; Compustat. Years: 1997-2006.	Using text-based analysis of 10-K product descriptions, they show that firms exploit product market synergies through asset complementarities in M&As.
2012	Shenoy	Empirical	Efficiency vs anticompetitive motives in M&As	Multiple industries. Sources: SDC; CRSP; Compustat; Compustat's industry segment file; BEA Input-Output tables. Years: 1981-2004.	Efficiency motives seem to drive vertical acquisitions.
2014	Bena and Li	Empirical	Sources of synergies in M&As	Multiple industries. Sources: SDC; CRSP; Compustat; National Bureau of Economic Research (NBER) patent data; USPTO. Years: 1984-2006.	Acquirers that were previously technologically linked to their targets produce more patents after

					the merger.
2014	Ahern and Harford	Empirical	M&As and vertical links	Multiple industries. Sources: SDC; Compustat; Hoberg-Phillips similarity measure; BEA Input-Output tables; U.S. Census Bureau's County Business Patterns (CBP) database. Years: 1986-2010.	Stronger product market connections through customer-supplier trade flows lead to a greater incidence of cross-industry mergers.
2017	Fairhurst and Williams	Empirical	Efficiency vs anticompetitive motives in M&As	Multiple industries. Sources: SDC; CRSP; TNIC industry classifications; EDGAR; Compustat; Compustat's industry segment file. Years: 1994-2012.	Positive rival reactions and negative customer reactions when the bidder and target operate in similar geographic regions, consistent with M&As' anticompetitive effects.
2019	Dong, Massa and Zaldokas	Empirical	Efficiency vs anticompetitive motives in M&As	Multiple industries, 63 countries. Sources: SDC; Compustat Global and North America; Getting the Deal Through; LexisNexis. Years: 1990-2012.	M&A activity goes up after the passage of leniency laws.
2020	Bai, Jin and Serfling	Empirical	Sources of synergies in M&As	Manufacturing firms. Sources: ASM, CMF, and LBD from the Census Bureau. Years: 2005-2010.	Firms with more structured management practices tend to acquire establishments with less structured management practices. Following the acquisition, targets adopt more structured practices.

2020	Fresard, Hoberg and Phillips	Empirical	M&As and vertical links	Multiple industries. Sources: Developed business descriptions from firms' 10-Ks in EDGAR; BEA Input-Output table; SDC; Compustat; National Bureau of Economic Research (NBER) patent data; USPTO. Years: 1996-2013.	R&D-intensive firms are less likely to become targets in vertical acquisitions. In contrast, firms with patented innovation are more likely to sell to vertically-related buyers.

Panel C: Hybrid organizational forms

Year	Author(s)	Approach	Topic	Empirical setting & data sources	Main findings
1987	Brickley and Dark	Empirical	Franchising	Franchising, 9 industries. Source: Hand collected sample from franchise-disclosure documents. Year: 1984.	Monitoring costs increase the likelihood of franchising relative to operating company managed units.
1995	Klein	Theory	Franchising		Explains franchise contracts and the structure of credible commitments within self-enforcing arrangements.
2000	Allen and Phillips	Empirical	Partial ownership	Multiple industries. Sources: SDC; CRSP; Compustat; Spectrum 5; Wall Street Journal. Years: 1982-1991.	After a minority acquisition, targets' industry-adjusted operating cash flow increase, if they operate in R&D-intensive industries.
2006	Fee, Handlock and Thomas	Empirical	Partial ownership	Multiple industries. Sources: SDC; CRSP; Compustat; Compustat's industry segment file; Compact Disclosure. Years: 1988-2001.	Customer firms are more likely to have equity stakes in R&D-intensive suppliers.

2006	Mathews	Theory	Strategic alliances		In a strategic alliance context, a partial equity stake by the established firm on the entrepreneurial firm mitigates the entry incentives of the established firm into the entrepreneurial firm's market.
2006	Gomes-Casseres, Hagendoorn and Jaffe	Empirical	Strategic alliances	Multiple industries. Sources: Cooperative Agreements and Technology Indicators (CATI); USPTO; Compustat. Years: 1975-1999.	Interfirm alliances promote the sharing of technological knowledge.
2008	Robinson	Both	Strategic alliances	Multiple industries. Sources: SDC; Compustat; CRSP; Jay Ritter's IPO website. Years: 1985-2001.	Alliances are more likely used when the activity in question is riskier than a firm's primary activity.
2013	Ouimet	Empirical	Partial ownership	Multiple industries. Sources: SDC; CRSP; Compustat. Years: 1994-2006.	Minority acquisitions are more common when keeping target managerial incentives intact is important and when the target is financially constrained.
2014	Povel and Sertsios	Both	Partial ownership	Multiple industries. Sources: Capital IQ; SDC. Years: 1998-2010.	Minority acquisitions may be transitory with the goal of learning about potential synergies. Majority acquisitions are more

					likely preceded by minority equity stakes when information asymmetry is important. Franchisors strategically increase the amount of investment they ask franchisees when agency problems are more severe.
2015	Sertsios	Empirical	Franchising	Franchising, 42 industries. Source: Hand collected sample from the Handbook of Franchise Opportunities (HFO). Years: 1976-1987.	
2016	Bernstein and Sheen	Empirical	Franchising	Restaurant industry. Sources: Capital IQ; Florida Department of Business and Professional Regulation; InfoUSA; Datassential; Yelp.com. Years: 2002-2012.	After the buyout of a franchisor, its company managed restaurants become cleaner, safer and better maintained than its franchised units.
2017	Fan, Kuhn and Lafontaine	Empirical	Franchising	Franchising, six sectors. Sources: Entrepreneur magazine's "Annual Franchise 500" surveys; Bond's Franchise Guide; Federal Housing Finance Agency; Census Bureau; National Federation of Independent Business's (NFIB); Small Business Economic Survey. Years: 1984-2006.	A decline in housing collateral value decreases franchising activity and the total number of outlets.
2018	Kosova and Sertsios	Empirical	Franchising	Franchising, hotel industry. Sources: Smith Travel Research (STR) Census and performance data; Census Bureau; BLS. Years: 2000-2008.	Franchised hotels are larger and more likely in a higher quality tier when they are farther away from the parent headquarters and thus harder to monitor.

Panel D: Internal organization of the firm

Year	Author(s)	Approach	Topic	Empirical setting & data sources	Main findings
2010	Guadalupe and Wulf	Empirical	Hierarchies and competition	Multiple industries. Sources: Hewitt Associates survey; U.S. import data. Years: 1986-1999.	Product-market competition causes firms to flatten their organizations.
2017	Bena and Xu	Empirical	Ownership and competition	Multiple industries in 18 European countries. Sources: Bureau van Dijk's AMADEUS and Orbis; Eurostat's Comext; Eurostat's Structural Business Statistics database (SBS). Years: 2002-2011.	Competition reduces inside ownership.
2017	He and Huang	Empirical	Common ownership and competition	Multiple industries. Sources: Compustat; Thomson's CDA/Spectrum database (form 13F); EDGAR. Years: 1980-2014.	Cross-held firms experience significantly higher market share growth than non-cross-held firms.
2018	Azar, Schamlz and Tecu	Empirical	Common ownership and competition	Airline industry. Sources: Department of Transportation's Airline Origin and Destination Survey DB1B database; BTS's T100 Segment database; BEA; Thomson's Spectrum database (form 13F). Years: 2001-2014.	Within-route changes in common ownership concentration robustly correlate with route-level changes in ticket prices.
2018	Lewellen and Lowry	Empirical	Common ownership and competition	Multiple industries. Sources: Compustat; Thomson's CDA/Spectrum database (form 13F); EDGAR; CRSP; S&P 500. Years: 1980-2012.	Little robust evidence that common ownership affects firm behavior, in spite of the large number of studies that offer evidence to the contrary.
2019	Dennis, Gerardi and Schenone	Empirical	Common ownership and competition	Airline industry. Sources: Department of Transportation's Airline Origin and Destination Survey DB1B database; BTS's T100 Segment database; BEA; Thomson's Spectrum database (form 13F). Years: 2001-2014.	The positive relationship between average ticket prices and common ownership previously documented in the

2019	Koch and Panayides and Thomas	Empirical	Common ownership and competition	Multiple industries. Sources: Compustat; Thomson's CDA/Spectrum database (form 13F); EDGAR; CRSP; S&P 500; BLS; EDGAR. Years: 1985-2012.	literature is generated by the endogenous market share component. Common ownership is neither robustly positively related with industry profitability or output prices.
2020	Larrain, Sertsios and Urzúa	Empirical	Common ownership and control rights	Pairs of firms in unrelated industries with a common owner in 10 European countries. Sources: Bureau van Dijk's AMADEUS; hand collected data on commodity and regulatory shocks. Years: 2004-2014.	Shocks are not transmitted between pairs of firms that share a common owner when equity stakes are lower than 20%.
2019	Gilje, Gormley, Levit	Both	Common ownership and managers' incentives	Multiple industries. Sources: Compustat; Thomson's CDA/Spectrum database (form 13F); EDGAR; CRSP; several stock-market indices. Years: 1980-2012.	Potential drivers of common ownership, including mergers in the asset management industry, could diminish managerial motives to internalize externalities.

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