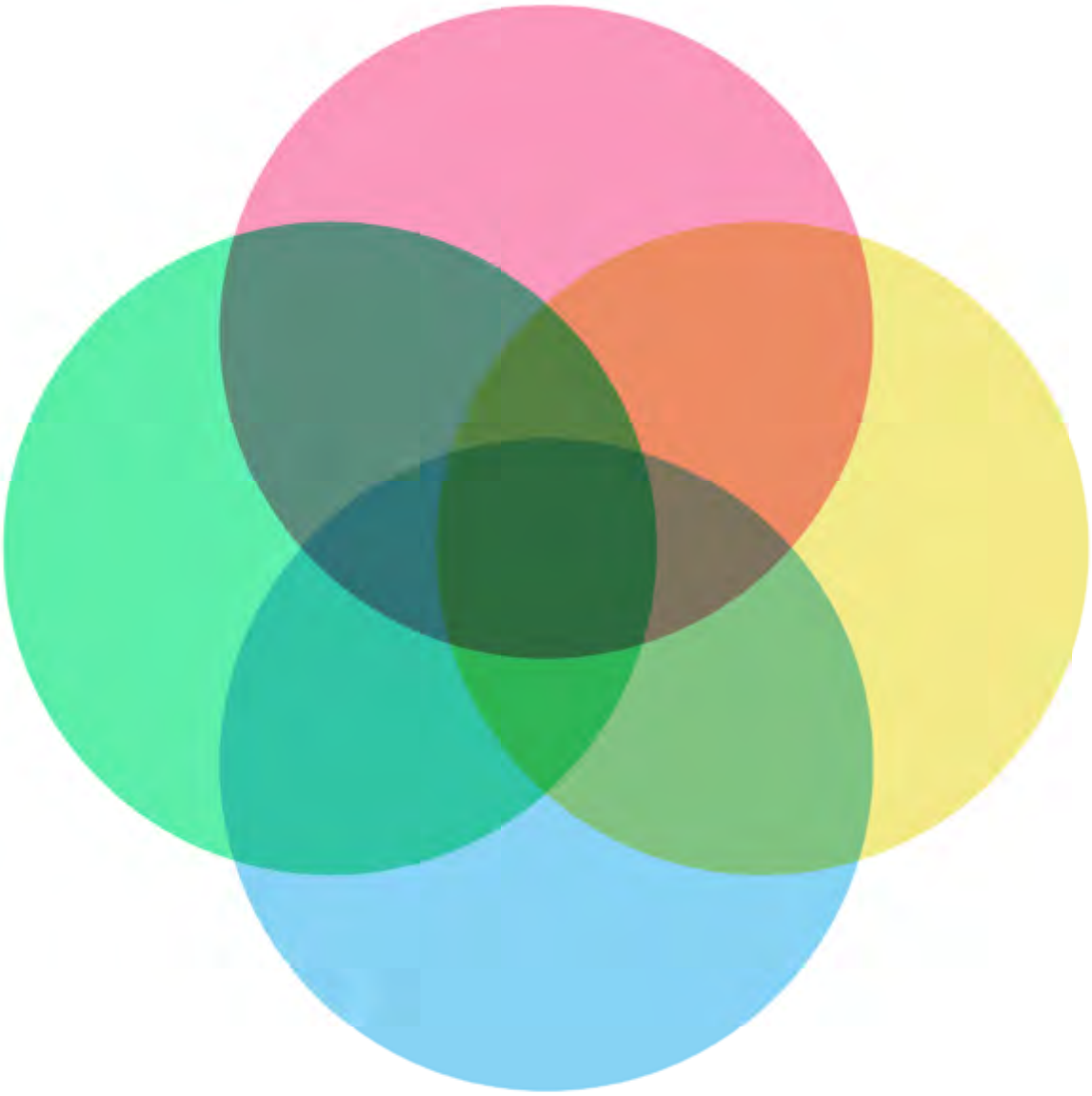
OVERLAPPING OWNERSHIP & MARKET POWER ENTRENCHMENT



BY RICARDO M. RIBEIRO[1]

1 Associate Professor, Católica Porto Business School.

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By Ricardo M. Ribeiro

Overlapping ownership links may create the incentive for managers to internalize the preferences that their shareholders have in other firms. If they do (and firms in the industry impose a negative externality on each other), product market competition may be reduced. This article addresses three key empirical questions to understand the impact of overlapping ownership on market outcomes and its potential to preserve or entrench market power: (i) how can we quantify the potential internalization of shareholder preferences induced by overlapping ownership links? (ii) how empirically relevant is such potential internalization? and (iii) what impact do overlapping ownership links actually have on market outcomes?

I. INTRODUCTION

Overlapping ownership links between firms have gained considerable momentum in the last decades. The unprecedented growth and concentration of the asset management industry over recent decades has led major asset managers to hold significant stakes in almost all the major firms of a multitude of industries.[2] Further, in some industries, in addition to common-ownership links, by shareholders external to the industry, there are also cross-ownership links, by shareholders that are internal to the industry (often motivated as a way to reduce development costs of new products and promote the rate of innovation). In such cases, firms within an industry are themselves shareholders of other firms in the industry. Examples of industries in which these cross-ownership links are important include automobiles,[3] banking,[4] media,[5] electric power,[6] steel,[7] and insurance.[8]

Overlapping ownership links may lead to a failure of the competitiveness condition, according to which shareholders unanimously agree on own-profit maximization.[9] To see why, note, for example, that if firm A imposes a negative externality on firm B, a shareholder of firm A who also holds a stake in firm B typically wants the manager of firm A to pursue a less aggressive strategy than the strategy desired by a shareholder with no stake in firm B. As a consequence, the managers of firms with overlapping ownership links may not simply maximize their own profit. Instead, they have the incentives to (partial or fully) internalize the preferences that their shareholders may have in other firms.[10] *If* (and this constitutes a big if) managers do internalize the preferences of their shareholders in those rivals, managers will (in their decision making) assign a positive weight to the profits of competing firms, which – if firms in the industry impose a negative externality on each other – can soften product market competition.[11] This implies that the acquisition of ownership links has the potential to allow firms in the industry to preserve or entrench their market power.

In this article, I address three questions that (I think) are key to empirically understanding the impact of overlapping ownership on market outcomes and its potential to preserve or entrench market power:

- How can we quantify the potential internalization of shareholder preferences induced by overlapping ownership links?
- How empirically relevant is such potential internalization?
- What impact do overlapping ownership links actually have on market outcomes?

II. QUANTIFYING THE POTENTIAL INTERNALIZATION OF SHAREHOLDER PREFERENCES

The potential internalization of shareholder preferences induced by overlapping ownership links can be quantified by computing the weights that managers would assign to the profits of competing firms as a result of overlapping ownership links.

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2 Chris McIntyre *et al., From tailwinds to turbulence - global asset management 2022*, Technical report, Boston Consulting Group (2022).

3 See, for example, Wilson A. Alley, *Partial Ownership Arrangements and Collusion in the Automobile industry*, Journal of Industrial Economics, 45, 191-205 (1997); Hiroshi Ono *et al., Partial Ownership Arrangements in the Japanese Automobile Industry; 1990-2000*, Journal of Applied Economics, 12 (2), 355-367 (2004); Mário Neto *et al., Corporate Ownership Network in the Automobile Industry: Owners, Shareholders and Passive Investment Funds*, Research in Globalization, 2,100016 (2020); Cristian Huse, Ricardo Ribeiro & Frank Verboven, *Common-Ownership vs. Cross-Ownership: Evidence from the Automobile Industry*, Journal of Industrial Economics, Forthcoming (2024).

4 See, for example, Erik Dietzenbacher, Bert Smid & Bjørn Volkerink, *Horizontal Integration in the Dutch Financial Sector*, International Journal of Industrial Organization, 18, 1223-1242 (2000); Umed Termushoev & Stanislav Stakhovych, *Cross-Shareholding in the Japanese Banking Sector, Tacit Collusion, and Market Power* (Working Paper, 2009).

5 See, for example, James M. Ferguson, Daily Newspaper Advertising Rates, Local Media Cross-Ownership, Newspaper Chains, and Media Competition, Journal of Law and Economics, 26, 635–654 (1983).

6 See, for example, Eirik S. Amundsen & Lars Bergman, *Will Cross-Ownership Re-Establish Market Power in the Nordic Power Market?*, Energy Journal, 23, 73–95 (2002).

7 See, for example, David Gilo, Yossi Moshe & Yossi Spiegel, *Partial Cross Ownership and Tacit Collusion*, The RAND Journal of Economics, 37, 81-99 (2006).

8 See, for example, Rafael La Porta, Florencio Lopez-de-Silanes, & Andrei Shleifer, *Corporate Ownership around the World*, The Journal of Finance, 54, 471–517 (1999).

9 Oliver Hart, *On Shareholder Unanimity in Large Stock Market Economies*, Econometrica, 47 (5), 1057-1083 (1979).

10 Julio J. Rotemberg, *Financial Transaction Costs and Industrial Performance* (Working Paper, 1984); Robert Hansen & John R. Lott, *Externalities and Corporate Objectives in a World with Diversified Shareholder/Consumers*, The Journal of Financial and Quantitative Analysis, 31 (1), 43–68 (1996).

11 If firms in the industry impose a positive externality on each other, overlapping ownership links may also have a bright side, as the internalization of shareholder preferences may (i) promote cost-reducing investments (see, for example, Ángel L. López & Xavier Vives, *Overlapping Ownership, R&D Spillovers, and Antitrust Policy*, Journal of Political Economy, 127, 2394–2437 (2019)); (ii) facilitate the transfer of tacit knowledge and product innovation (see, for example, Arghya Ghosh & Hodaka Morita, *Knowledge Transfer and Partial Equity Ownership*, The RAND Journal of Economics, 48, 1044–1067 (2017)); and (iii) reduce intra-industry portfolio risks (see, for example, Oz Shy & Rune Stenbacka, Common Ownership, Institutional Investors, and Welfare, Journal of Economics & Management Strategy, 29 (3), 706-723 (2020).

The dominant formulation for these weights is due to O'Brien & Salop.[12] Incorporating features from Rotemberg and Bresnahan & Salop,[13] they assume that (i) the preferences of shareholders are captured by their (financial) returns; and (ii) the managers of firms with overlapping ownership links would maximize a control-weighted sum of the returns of the firm's shareholders. This is entirely equivalent to assuming that managers maximize a control-weighted sum of the profits of all the firms in the industry in which the firm's shareholders have preferences on, with the weights being determined by (i) the corporate control of shareholders over decision-making within the firm; and (ii) the financial stakes of the firm's shareholders in the different firms of the industry. [14]

Naturally, these assumptions constitute a reduced form model of the decision-making process and the knowledge structure within the firm. Operational decision variable(s) may be often decided, not by top managers, but by middle managers, who may not know the extent of the stakes of the firm's shareholders in other firms. Antón at al. show that, even in those cases, managerial incentives can serve as a mechanism (which requires no communication or coordination between the different players) that links overlapping ownership with operational decision variable(s).[15]

III. EXTENT OF THE POTENTIAL INTERNALIZATION OF SHAREHOLDER PREFERENCES

Recent work has extensively documented the rise in overlapping ownership links over the past decades, and showed how it translates into higher profit weights attached by managers to rival firms. We can divide this work into two strands, one focused on documenting common-ownership links and another more focused on documenting cross-ownership links. I begin by addressing the former.

Backus, Conlon & Sinkinson and Amel-Zadeh, Kasperk & Schmalz examine the set of S&P 500 firms between 1980 and 2017.[16] Backus, Conlon & Sinkinson consider the holdings of S&P 500 firms by large institutional shareholders and show that the average weight assigned by the managers of S&P 500 firms to the profit of the remaining S&P 500 firms has increased from 0.2 in 1980 to almost 0.7 in 2017. Amel-Zadeh, Kasperk & Schmalz consider the holdings not only of institutional shareholders, but also of corporate insiders and blockholders. They show that once we account for these holdings, the weight assigned by the managers of S&P 500 firms to the profit of the remaining S&P 500 firms is, in fact, lower, with most profit weights decreasing by between 5-25 percent.

Boot, Seldeslachts & Banal-Estañol examine the same question for the set of S&P Europe 350 firms between 2004 and 2015.[17] They show that the average weight assigned by the managers of S&P Europe 350 firms to the profit of the remaining S&P Europe 350 firms has increased from 0.08 in 2004 to 0.21 in 2015. This implies that while the average weight is lower than for the set of S&P 500 firms, the increase has been steeper in Europe than in the United States.

I now address the latter. The literature on the prevalence of cross-ownership links is typically industry-specific.[18] Nain & Wang as well as Heim *et al.* constitute some notable exceptions.[19] Nain & Wang quantify the prevalence of cross-ownership links, by examining acquisitions

12 Daniel P. O'Brien & Steven C. Salop, *Competitive Effects of Partial Ownership: Financial Interest and Corporate Control*, Antitrust Law Journal, 67, 559-614 (2000).

13 Rotemberg, *supra* note 10; Bresnahan & Salop, *supra* note 10.

14 José Azar, *Portfolio Diversification, Market Power, and the Theory of the Firm* (Working Paper, 2017); Duarte Brito *et al., Unilateral Effects Screens for Partial Horizontal Acquisitions: The Generalized HHI and GUPPI*, International Journal of Industrial Organization, 59, 127-189 (2018); and Alexandr Moskalev, *Objective Function of a Non-Price-Taking Firm with Heterogeneous Shareholders* (Working Paper, 2019) microfound the dominant formulation of these profit weights through a voting model in which shareholders vote to elect the manager from two potential candidates, an incumbent and a challenger, with conceivably differing strategy proposals to the firm (or alternatively vote to express whether they approve or not of a managerial change in the firm's status quo strategic plan). Candidates are assumed to care about holding office. In turn, shareholders are assumed to care about the returns that result from the different strategy proposals and to have an additive profit-irrelevant bias for (or against) the challenger. Voting is probabilistic in the sense that the bias, while known to voters, is unobserved by candidates, who treat it as random. This microfoundation is consistent with empirical evidence establishing that shareholders' voting impacts the objective function of managers (Reena Aggarwal, Sandeep Dahiya & Nagpurnanand R. Prabhala, *The Power of Shareholder Votes: Evidence from Uncontested Director Elections*, Journal of Financial Economics, 133 (1), 134–153 (2019)).

15 Miguel Antón *et al., Common Ownership, Competition, and Top Management Incentives*, Journal of Political Economy, 131 (5), 1294-1355 (2023).

16 Matthew Backus, Christopher Conlon & Michael Sinkinson, *Common Ownership in America: 1980-2017*, American Economic Journal: Microeconomics, 13 (3), 273–308 (2021); Amir Amel-Zadeh, Fiona Kasperk, and Martin C. Schmalz, *Mavericks, Universal, and Common Owners - The Largest Shareholders of U.S. Public Firms* (Working Paper, 2022).

17 Nuria Boot, Jo Seldeslachts & Albert Banal-Estañol, *Common Ownership: Europe vs. the US* (Working Paper, 2022).

18 Alley, *supra* note 3; Ono *et al.*, *supra* note 3; Neto *et al.*, *supra* note 3; Huse, Ribeiro & Verboven, *supra* note 3; Dietzenbacher, Smid & Volkerink, *supra* note 4; Termushoev & Stakhovych, *supra* note 4; Ferguson, *supra* note 5; Amundsen & Bergman, *supra* note 6; Gilo, Moshe & Spiegel, *supra* note 7; La Porta, Lopez-de-Silanes & Shleifer, *supra* note 8.

19 Amrita Nain & Yan Wang, *The Product Market Impact of Minority Stake Acquisitions*, Management Science, 64 (2), 825-844 (2018); and Sven Heim *et al., The Anticompetitive Effect of Minority Share Acquisitions: Evidence from the Introduction of National Leniency Programs*, American Economic Journal: Microeconomics, 14 (1), 366-410 (2022).

for which the reported final ownership stake is below 50 percent. In particular, they focus on horizontal acquisitions (in which the acquirer and target are active in the same industry) announced between 1980 and 2010 in the U.S. manufacturing industries. They report that a large fraction of these (minority) acquisitions are not motivated by investment purposes (and thus, truly passive). Instead, they involve some business interaction (like sharing marketing and distribution networks or co-development of products), technology transfers or technology sharing. Further, they report an average cross-ownership acquisition stake of 14.8 percent, although with substantial heterogeneity across industries, with the Printing, Publishing and Allied industries having the highest average acquisition stake (29.7 percent) and the Leather and Leather Products industry having the lowest average acquisition stake (almost null). Furthermore, they report that the average cross-ownership acquisition stake has increased over time, from 11.4 percent (between 1980 and 1989) to 18.1 percent (between 2000 and 2010).

Heim *et al.* examine a similar question with a broader focus, by examining acquisitions for which the reported final ownership stake is below 50 percent across 63 countries between 1990 and 2013. They identify 47,675 of such acquisitions, of which 32,683 are domestic (the acquirer and target are from the same country) and 14,992 are cross-border acquisitions. Out of these, 12,934 and 7,689 are horizontal domestic and cross-border acquisitions, respectively. Focusing on new domestic horizontal acquisitions, they report that the distribution of the number of acquisitions is close to uniform across stake sizes, with the average cross-ownership acquisition stake being 23 percent.

Overall, the magnitudes of cross-ownership links reported by Nain & Wang and Heim *et al.* suggest that the weight assigned by managers to the profit of their rivals due to (minority) cross-ownership links can be substantially lower than that due to common-ownership links. However, this does not necessarily imply that cross-ownership links do not raise (or raise lower) competition policy concerns. The reason being that cross-ownership links, in addition to directly reducing the incentives to compete, can also *reinforce* existing common-ownership links.

To see why, consider, for example, an industry with three firms: firms A, B and C. To begin with, consider a shareholder structure with solely common-ownership links. In particular, consider that firm A has two shareholders: shareholders 1 and 2, with shareholder 1 being an external non-common shareholder with a stake solely in firm A and shareholder 2 being an external common shareholder with stakes in firms A and B. This shareholder structure implies, as discussed above, that the manager of firm A may not maximize own profit. Instead, this manager may weigh also the profit of firm B (as shareholder 2 has a direct preference in the profit of firm B), although not the profit of firm C (as no shareholder has a direct preference in the profit of firm C).

Consider now a shareholder structure with (additionally) cross-ownership links among the firms in the industry. In particular, consider that firm A has a stake in firm B and that firm B has a stake in firm C. These cross-ownership links have several qualitative implications. First, the ultimate interest of shareholder 2 in firm B is greater than her direct stake in the firm, because she now also has an indirect preference in the profit of firm B (via the profit of firm A). Second, although shareholder 1 has a stake solely in firm A, the cross-ownership link between firms A and B turns her ultimately into a common shareholder of firm B, because she now has an indirect preference in the profit of this firm (via the profit of firm A). Third, although none of the shareholders of firm A have direct a stake in firm C, the cross-ownership links between the three firms turn these shareholders ultimately into common shareholders of firm C, because they now have an indirect preference in the profit of this firm (via the profit of firms A and B).

This example suggests that cross-ownership links have the potential to reinforce common-ownership links in two dimensions: (i) increase the positive weight that, due to common-ownership, is assigned by managers to the profit of rivals; and (ii) increase the number of firms considered in the weighted average of the manager.

Huse, Ribeiro & Verboven empirically examine this reinforcing role of cross-ownership links in the global automobile industry between 2007 and 2021.20,[21] They document that, during their sample period, common-ownership links in the industry amount to 31–39 percent, while cross-ownership links amount to 6–9 percent of automobile manufacturers' stock. They subsequently show that accounting for these relatively modest cross-ownership links has important implications for the profit weights assigned to other firms. They find that accounting for cross-ownership links can increase the average weight assigned by managers to the profit of competitors by between 33–68 percent.

20 Huse, Ribeiro & Verboven, *supra* note 3.

21 This industry is ideally suited for such a study as the automobile industry is characterized by prevalent common- and cross-ownership links. First, automobile manufacturers command a substantial share of the global GDP. Thus, it is not surprising that major asset managers have holdings in the major manufacturers. Second, automobile manufacturers engage in different types of partnerships (which include, among others, cross-ownership links) to share high development costs, reduce sourcing costs, gain access to new markets, establish economies of scale or gain access to complementary resources (David Robertson & Karl Ulrich, *Planning for Product Platforms*, Sloan Management Review, 39 (4), 19-31 (July 15, 1998)).

IV. EMPIRICAL IMPACT OF OVERLAPPING OWNERSHIP ON MARKET OUTCOMES

The dominant formulation (due to O'Brien & Salop) for the weights that managers can assign to the profits of competing firms as a result of overlapping ownership links implicitly assumes that the preferences of shareholders are *fully* internalized by managers.[22] As such, we may view the profit weights documented in the literature as a measure of the degree of internalization that could be induced by overlapping ownership if managers fully internalized the returns of shareholders. Naturally, this may differ from the *actual* degree of internalization induced by overlapping ownership. This cautionary remark may help to explain the ongoing debate on the competitive effects of overlapping ownership.

Reduced-form evidence suggests that overlapping ownership may (i) increase product prices,[23] but without being very explicit on the underlying mechanisms; (ii) increase stock returns;[24] and (iii) reduce entry.[25] This suggests that managers do (even if only partially) internalize the heterogenous shareholder preferences that result from overlapping ownership links. Evidence from structural models has, however, been more mixed and industry specific. Some studies find no evidence that managers internalize shareholders preferences,[26] while others find the opposite result.[27]

V. CONCLUSION

The managers of firms with overlapping ownership links may not simply maximize their own profit. Instead, they have the incentives to (partial or fully) internalize the preferences that their shareholders may have in other firms.

If managers do internalize the preferences of their shareholders in those rivals, managers will (in their decision making) assign a positive weight to the profits of competing firms, which -– if firms in the industry impose a negative externality on each other -– can soften product market competition. This implies that the acquisition of ownership links has the *potential* to allow firms in the industry to preserve or entrench their market power.

The *actual* impact of overlapping ownership on market outcomes will, thereby, depend on the *degree* of internalization of shareholder preferences by managers. Empirical evidence from structural models has been mixed and industry specific, which seems to suggest that more studies are needed to comprehensively assess the actual impact of overlapping ownership on market outcomes.

22 O'Brien & Salop, *supra* note 12.

23 José Azar, Martin C. Schmalz & Isabel Tecu, *Anticompetitive Effects of Common Ownership*, The Journal of Finance, 73 (4), 1513-1565 (2018); José Azar, Sahil Raina & Martin C. Schmalz, *Ultimate Ownership and Bank Competition*, Financial Management, 51 (1), 227-269 (2022).

24 Lysle Boller & Fiona M. Scott Morton, *Testing the Theory of Common Stock Ownership* (Working Paper, 2020).

25 Melissa Newham, Joe Seldeslachts & Albert Banal-Estañol, *Common Ownership and Market Entry: Evidence from Pharmaceutical Industry* (Working Paper, 2022).

26 Pauline Kennedy *et al., The Competitive Effects of Common Ownership: Economic Foundations and Empirical Evidence* (Working Paper, 2017); Matthew Backus, Christopher Conlon & Michael Sinkinson, *Common Ownership and Competition in the Ready-to-Eat Cereal Industry* (Working Paper, 2021).

27 Alex H. Park & Kyoungwon Seo, *Common Ownership and Product Market Competition: Evidence from the U.S. Airline Industry*, Korean Journal of Financial Studies, 48 (5), 617-640 (2019); José Azar & Ricardo Ribeiro, *Estimating Oligopoly with Shareholder Voting Models* (Working Paper, 2022).

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