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## BREAKING DOWN ASSET MANAGERS: ACTIVE AND PASSIVE FUND INCENTIVES FOR ANTI-COMPETITION

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Breaking Down Asset Managers:  
Active and Passive Fund Incentives for Anti-Competition  
*A Response to Azar et al.*

*John Abraham*  
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**Abstract:**

Large asset managers house trillions of dollars in savings and have led to a dramatic concentration of capital. In two recent papers, Azar, Schmalz and Tecu and Azar, Raina and Schmalz have presented potential evidence that these large asset managers reduce incentives for competition among portfolio companies.

This paper raises doubts about the Azar *et al.* formulation. The principal question this paper seeks to address is whether or not monopolistic-outcomes among competing portfolio companies are necessarily in the best interest of large asset managers. If such “soft competition” is not in their best interest *financially*, it would be hard to see how or why large asset managers would induce monopoly behavior. To answer the question, the paper breaks down large asset managers and examines the financial incentives of their two primary businesses: actively and passively managed funds. In short, both fund types are incentivized to maximize assets under management, and *not* returns. Active funds compete in a market where relative performance, not absolute returns, determines fund inflows and thus profits. Thus they do not desire maximum returns from *all* portfolio companies. Further, the aggregate portfolio of assets held in passive funds differs substantially across asset managers. The varying portfolios in turn imply that different portfolio managers desire different types of competition among portfolio firms. Finally, because these large firms comprise hundreds or thousands of individual funds, their incentives are complex and difficult to predict, even for themselves, with regard to competition in specific markets. In conclusion, while the authors have triggered important research about the effects of large asset managers in capital markets, looking closely at the interworking of the firms themselves reveals serious reasons to doubt incentives for anti-competition exist.

**Acknowledgements:**

I would like to thank Professors Hal Scott, Louis Kaplow, and Jessie Fried for their valuable comments and input into this paper.

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## Section I: Introduction

The rise of large asset managers has led to a concentration of capital and altered the historic norm of diffuse ownership in US publicly held companies. The emergence of firms that manage trillions of dollars US savings such as Blackrock, Vanguard, Fidelity and State Street has naturally raised questions about agency costs between money managers and investors, the influence such firms exert on management, and the role “dumb money” in the market. Another such concern that has captured the attention of academics and market regulators is the extent to which such concentration of ownership causes anti-competitive pressure in portfolio companies.

Briefly stated, the argument is that “common ownership of natural competitors by the same investors reduces incentives to compete.”<sup>1</sup> Azar *et al.* suggest that because asset managers hold stakes in competing companies, they prefer those companies to behave collectively as a monopoly. This behavior will in turn maximize the asset manager’s portfolio return. They argue that portfolio companies internalize and act upon this preference. They present some evidence of possible monopolistic outcomes in the airline<sup>2</sup> and banking<sup>3</sup> industries – higher prices and lower supply – in markets with higher levels of common ownership.

This paper analyzes the incentives of large asset managers and raises doubts about the Azar *et al.* formulation. The principal question this paper seeks to address is whether or not monopolistic-outcomes among competing portfolio companies are necessarily in the best interest of large asset managers. If such outcomes are not, the Azar causal mechanism is nipped in the

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<sup>1</sup> See José Azar, Martin C. Schmalz & Isabel Tecu, *Anti-Competitive Effects of Common Ownership* 1 (Univ. of Mich. Ross Sch. of Bus., Working Paper No. 1235, 2015), <http://papers.ssrn.com/abstract=2427345> [<https://perma.cc/3CKH-X75N>].

<sup>2</sup> See *id.*

<sup>3</sup> See José Azar, Sahil Raina & Martin C. Schmalz, *Ultimate Ownership and Bank Competition* (Jan. 8, 2016), <http://ssrn.com/abstract=2710252> [<https://perma.cc/UD9E-8H7M>].

but since portfolio companies would have no asset-manager preference to internalize. Indeed, this paper finds there are serious reasons to doubt such an incentive exists.

Specifically, the authors' work builds on two simplistic assumptions: 1) that it is necessarily in an asset manager's best interest for all portfolio stocks to achieve strong growth – the bigger the better – and 2) that a firm's aggregate holdings, at the family of funds level, face uniform incentives. An exploration of the business models of large asset managers proves neither of these assumptions reliable.

To see why these assumptions prove false, this paper will examine the two business lines of large asset managers: actively managed mutual funds and passively managed index funds. In the case of actively managed funds, because asset managers earn revenue through fixed fees on assets under management (AUM) and are engaged in *relative* competition to attract fund inflows, their preference for portfolio stock growth depends strictly on their exposure to a particular stock *relative to peers*. An asset manager only prefers positive growth for those companies to which it is over-exposed. Similarly, in the case of passively managed index funds, diverse ownership profiles among asset managers causes differing incentives for competition. Variations in ownership levels of competing firms can lead an asset manager to prefer competitive outcomes to monopolistic ones. Thus, since monopolistic outcomes are not necessarily in the best interest of large asset managers, it is hard to see how such portfolio managers would induce any outsized pressure for monopoly behavior in the market.

This paper will proceed as follows: Section I will review the Azar thesis and point out their analyses' key implicit assumptions. Section II will briefly describe the rise of large asset managers and their footprint in equity markets. Section III will explore the fee structure and business model of asset managers. It will also briefly review literature showing that asset

managers compete for AUM. Section IV will dig deeper into the incentives at the fund level and examine the two main products offered by large managers: mutual funds and index funds. We will see that funds do not desire maximum growth for all equities in their portfolio and that Azar's first assumption is faulty. Section V will move from examining funds to examining family-of-funds. We will briefly explore what can (and cannot) be said about the incentives of the parent asset manager. Here, we will see that Azar's second assumption is not reliable. Section VI will conclude.

## **Section II: The Azar Thesis**

### **The Main Argument**

Azar *et al.* lay out their argument in two papers, Azar 2015 analyzing the airline industry and their follow up study in 2016 analyzing the banking industry.<sup>4</sup> Principally, the authors assert that common ownership of competitors reduces an asset manager's incentive to encourage competition among portfolio companies. When an owner has a stake in multiple competing companies, one competitor's gain is another's loss, and therefore the investor who is exposed to both firms, has little incentive to encourage competitive outcomes. Instead, the owner seeks to maximize profit across all holdings, and not on an individual company basis. In that case, two competing firms might be thought of as partners in achieving a monopolistic outcome for the investor. We can call this form of cooperation between companies "soft-competition," or "anti-competition" since it does not necessarily imply collusion between firms, but rather a reduced form of intense market competition.

It is important to note that the two Azar papers suggest that a pressure for anti-competition accompanies common ownership *above and beyond* what exists without common

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<sup>4</sup> See Azar, Schmalz & Tecu, *supra* note 1; Azar Raina & Schmalz, *supra* note 3.

ownership. Of course, any investor would benefit from monopolistic pricing, whether or not that owner hold shares of multiple competitors. Indeed, monopolistic outcomes are always more profitable than competitive results. Importantly, however, the authors' argument suggests that common ownership of competitors leads to a *greater* risk that managers will acquiesce to pressure for soft-competition.

There is some support for this argument from related industrial organization academic work.<sup>5</sup> The idea is that an owner who holds shares in competing companies has an incentive to maximize profits over its entire portfolio instead of on a company-by-company basis. Therefore, such "shared" ownership in rival firms causes the shareholder to have a strong incentive for (or ability to achieve) collusive outcomes.<sup>6</sup> The literature describes that common ownership of rivals may help reduce negative externalities of competition and "foster implicit or explicit coordination."<sup>7</sup> While one study by Huang and He linked institutional cross ownership to higher market share growth,<sup>8</sup> no study before Azar has demonstrated the impact of common institutional ownership on product market performance and pricing.

In fact, none of the literature cited by Azar specifically addresses the effects of asset *intermediaries* and speak only to ownership by beneficial owners or cross-corporate holdings of

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<sup>5</sup> The following are articles cited by Azar, Schmalz & Tecu, *supra* note 1, at 1. Importantly, however, none of these papers address the effects of "shareholders" who are intermediaries and not beneficial owners (i.e. asset managers), and several address passive ownership of one company by a direct competitor (i.e. intercompany ownership), which is a different matter entirely: Roger H. Gordon, *Do Publicly Traded Corporations Act in the Public Interest?*, 3(1) *Advances in Econ. Analysis & Pol'y* (1990); David Gilo, *The Anticompetitive Effect of Passive Investment*, 99(1) *Mich. L. Rev.* (2000); Daniel P. O'Brien & Steven C. Salop, *Competitive Effects of Partial Ownership: Financial Interest and Corporate Control*, 67(3) *Antitrust L. J.* (2000); David Gilo, Yossi Moshe & Yossi Spiegel, *Partial Cross Ownership and Tacit Collusion*, *RAND J. of Econ.* (2006).

<sup>6</sup> See Gordon, *supra* note 5.

<sup>7</sup> Jie (Jack) He & Jiekun Huang, *Product Market Competition in a World of Cross Ownership: Evidence from Institutional Blockholdings*, 2 *Rev. of Fin. Stud.* (forthcoming 2017).

<sup>8</sup> *Id.*

competing companies. Rock and Rubinfeld discuss why it is “a heroic (and unconvincing) assumption” for the Azar thesis to rely on similar theoretical underpinning.<sup>9</sup>

To demonstrate their claim, they examine markets in which the total holdings of large asset managers – the aggregation of all holdings in funds within a family of funds – include stakes in multiple competing companies within the airline and banking industries. In both cases, the authors use a delta between measures of market concentration that exclude the degree of common ownership and those that include them. They then regress airline route prices and bank interest rates on this delta, using it as an explanatory variable. A positive coefficient on the delta variable would in theory demonstrate that common ownership is associated with higher prices and more monopolistic outcomes. In airline flight pricing, they find ticket prices are 3-5% higher than would be the case under separate ownership.<sup>10</sup> In financial services, they find “greater levels of common ownership cause higher prices for deposit products.”<sup>11</sup>

The authors also point to an emerging stream of financial commentary that describes the degree of influence large asset managers exert on portfolio companies. They suggest that passive owners in reality attempt to influence portfolio companies in line with their desires as shareholders. Indeed, asset managers themselves have described their business as “passive investing; active owners.” It is not clear, however, what exactly “active” means. Large asset

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<sup>9</sup> Edward B. Rock & Daniel L. Rubinfeld, *Defusing the Antitrust Threat to Institutional Investor Involvement in Corporate Governance*, 4 (New York Univ. Sch. of Law, Law & Econ. Research Paper Series, Working Paper No. 17-05, 2017).

<sup>10</sup> See Azar, Schmalz & Tecu, *supra* note 1.

<sup>11</sup> This paper is a response to the causal mechanism the Azar papers lay out to explain how common ownership might induce monopolistic pressure. I will not address on the econometric analysis or evidence they find. It is briefly worth pointing out that there are several econometric issues worth examining more closely. For example, in Azar 2015, the analysis potentially incorporates omitted variable bias by using a very large data set with many degrees of freedom and very few explanatory variables. Further, the event study analysis presents an extremely long window after the market event (concentration) of a year and a half. It is possible that this large window introduces erroneously attributed causation since numerous causes could be found, e.g. normal disruptions at airports from maintenance. Further, there is a mechanical relationship between MHHI and HHI, which requires robustness checks. Finally, in the banking analysis, a potential source of substantial omitted variable bias is the size of banks. Those banks with higher degrees of common ownership are also larger national banks, so observed differences in pricing dynamics could be the result of other factors rather than the common ownership itself.



managers do not dedicate many resources to the corporate governance departments, which decide how to vote shares at the family level.<sup>12</sup> Many postulate that large asset managers exert influence in areas with “one size fits all” solutions. Examples of such matters might include board composition, voting procedures, and other governance related issues. Systematically studying the influence that asset managers have on portfolio companies is notoriously difficult.<sup>13</sup> Channels of communication are often informal, “behind closed doors,” and impossible to monitor.<sup>14</sup>

In any case, the Azar papers assert that we need not explore the exact mechanism for communication because if large owners have a particular incentive set, corporate managers will incorporate them into their decisions. They argue that over time corporate managers will be rewarded for behavior that maximizes profits for their owners.<sup>15</sup> They point out that this process may not even be conscious. “Managers who—through either conscious calculation, intuition, or pure luck— propose broad strategic plans that correctly represent shareholder interests will tend to be selected to run the firms.”<sup>16</sup>

## The Key Assumptions

The most distilled form of the Azar argument is as follows: Large asset managers have a greater-than-normal desire for monopolistic outcomes because they own competing firms’ stock, and portfolio companies internalize that desire.

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<sup>12</sup> Sarah Krouse, David Benoit & Tom McGinty, *The New Corporate Power Brokers: Passive Investors; Index-fund managers such as Vanguard often cast deciding shareholder votes on issues such as mergers and leadership changes*, Wall St. J., Oct. 24, 2016, <https://www.wsj.com/articles/the-new-corporate-power-brokers-passive-investors-1477320101>.

<sup>13</sup> See Joseph A. McCahery, Zacharias Sautner & Laura T. Starks, *Behind the Scenes: The Corporate Governance Preferences of Institutional Investors*, 71 J. of Fin. 2905 (2016).

<sup>14</sup> Krouse, Benoit & McGinty, *supra* note 12.

<sup>15</sup> See Einer Elhauge, *Horizontal Shareholding*, 129 Harv. L. Rev. 1267, 1278 (2016) (building on this theory, arguing that some academic evidence that CEO’s are compensated in line with industry performance, rather than their stock’s performance. This accords with the Azar theory that asset managers are inducing collusive outcomes.).

<sup>16</sup> Azar Raina & Schmalz, *supra* note 3, at 5.

This argument builds upon two implicit and unstated assumptions. The first pertains to the asset managers' incentives. The authors assume that it is necessarily in an asset manager's best interest for all portfolio stocks to achieve uniform and strong growth. Because asset managers are competing for fund flows to maximize AUM, and *not* absolute return, their interests diverge from a standard investor. The papers draw no distinction between an asset manager, which invests clients' money, and an investor who invests his *own* money. A beneficial stockholder of course desires maximal return from all held investments. But, the intermediary is simply seeking to maximize AUM in order to increase its fee collections. Thus, this assumption proves untrue.

Second, Azar aggregates holdings across individual funds and assumes they face the same incentives. For example, they point to aggregate holdings by BlackRock, Vanguard, Fidelity, and State Street in pharmacies, technology firms, and banks (e.g. saying that BlackRock owns X% of Company Y).<sup>17</sup> However, the authors do not address the dispersion of that ownership at the fund level or what the individual funds' motivations are with those holdings. Looking at the aggregate holdings and the family-of-funds level to understand the influence an asset manager has at a portfolio company can only make sense if all the underlying funds desire the same outcome for their holdings of that company. In Section IV, this paper will explore why this is not a reliable assumption.

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<sup>17</sup> Azar, Schmalz & Tecu, *supra* note 1, at 48 tbl.1.

## Section III: The Rise of Large Asset Managers

### Re-concentration of Ownership

Institutional investors that deploy large pools of capital dominate US public equity markets. Institutional ownership in 1950 constituted 6.1%<sup>18</sup> of outstanding corporate equity, and in 2016 it comprised 63%<sup>19, 20</sup>. The largest asset manager, BlackRock total assets under management exceeded \$5 trillion dollars in the third quarter of 2016.<sup>21</sup> Today, Vanguard holds \$4 trillion in AUM, State Street \$2.3 trillion, and Fidelity \$2.1 trillion.

Investors with such dramatic amounts of capital stand in stark contrast to the “atomistic” shareholder of generations gone by. Bebchuk, Cohen, and Hirst (forthcoming) describe a “reversal of the trend toward dispersion [of shareholdings], due to the rise of institutional investors.”<sup>22</sup> Berle & Means pointed out in 1932 that “management control” was likely since each shareholder’s “personal vote will count for little or nothing at the meeting...the stockholder is practically reduced to the alternative of not voting at all or else of handing over his vote” to management.<sup>23</sup> The last time ownership was as concentrated as it is today was during the time of John D. Rockefeller and J.P. Morgan.<sup>24</sup>

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<sup>18</sup> Matteo Tonello & Stephan Rahim Rabimov, *The 2010 Institutional Investment Report: Trends in Asset Allocation and Portfolio Composition*, The Conference Board Research Report, Nov. 11, 2010, <https://ssrn.com/abstract=1707512>.

<sup>19</sup> See Board of Governors of the Federal Reserve System (2016) Z.1 Financial Accounts of the United States Flow of Funds, Balance Sheets, and Integrated Macroeconomic Accounts, Second Quarter 2016, at 130

<sup>20</sup> See also Kristian Rydqvist, Joshua Spizman & Ilya Strebulaev, *Government Policy and Ownership of Equity Securities*, 111(1) J. of Fin. Econ. 70 (2014) (documenting the dramatic rise in institutional assets under management and point to tax law and other policies regarding pension funds and 401(k)s as contributing factors.).

<sup>21</sup> Sarah Krouse & Austen Hufford, *BlackRock Exceeds \$5 Trillion in Assets*, Wall St. J., Oct. 19, 2016, at C1. (Wall Street Journal)

<sup>22</sup> Lucian A. Bebchuk, Alma Cohen & Scott Hirst, *Institutional Investors and the Modern Corporation* (forthcoming 2017).

<sup>23</sup> Adolf A. Berle & Gardiner C. Means, *The Modern Corporation and Private Property* (1932).

<sup>24</sup> Jan Fichtner, Eelke M. Heemskerk & Javier Garcia-Bernardo, *Hidden Power of the Big Three? Passive Index Funds, Re-Concentration of Corporate Ownership, and New Financial Risk*, at 2 (Feb. 7, 2017), [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2798653](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2798653).

Large asset managers have since dramatically altered the dispersed ownership landscape that existed in 1932. BlackRock was reported to be the single largest shareholder in one fifth of all American firms in 2013.<sup>25</sup> Together BlackRock, Vanguard, and State Street constitute the largest shareholder in 88% of the S&P500.<sup>26</sup> As Azar points out, the same players are repeatedly among the top 5 shareholders in the largest technology firms, pharmacy companies, and banks.

### **Asset Managers as Intermediaries**

However, the mere scale of asset manager's positions is not the only difference with the "atomistic" owners of the past. There are two other important attributes of large asset managers that are key to understanding their role in equity markets. First, asset managers are not "investors" at all in the classical sense. They are intermediaries who do not directly realize the gains of a portfolio's performance. Second, large asset managers are composed of hundreds of underlying funds, each of which competes to attract capital. Thus the parent company cannot be thought of as a monolithic warehouse of capital. We will explore each of these issues in Section V and Section VI.

## **Section IV: Asset Manager Business Model**

### **The Fixed Fee Structure**

Large asset managers are intermediaries that do not directly realize the gains of a portfolio's performance. Unlike hedge funds or private equity investors, they do not receive "carry" or a percent of the portfolio's positive performance. Instead, asset managers who run

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<sup>25</sup> Susanne Craig, *The Giant of Shareholders, Quietly Stirring*, N.Y. Times, May 18, 2013, <http://www.nytimes.com/2013/05/19/business/blackrock-a-shareholding-giant-is-quietly-stirring.html>.

<sup>26</sup> Fichtner, Heemskerk & Garcia-Bernardo, *supra* note 24, at 15.

index funds and actively managed mutual funds earn revenue entirely based on fixed fees on the volume of AUM.

More specifically, mutual funds charge investors two types of fees: load fees and ongoing expenses. Load fees are charged to compensate investment management advisors who help select funds for an investor.<sup>27</sup> Ongoing expenses are expressed as an expense ratio, which is the percentage of fund assets deducted each year to cover management fees charged by the fund manager, administrative fees, operating costs, and 12-b1 fees (distribution costs).<sup>28</sup> The management fee is the key charge from our perspective. It is the fee charged to compensate the fund operator, and is charged as a percentage of the amount invested, not on directly on the performance of the fund. Therefore, aggregating across all investors in a fund, the manager earns its fee based on a fund's AUM.

### **Superior Returns and AUM Flows**

Because asset managers are rewarded based on the volume of AUM, they compete with each other to attract AUM inflows and organically grow the value of their investments. Both attracting inflows and achieving capital appreciation of invested assets grows AUM and thus the profits of the asset manager. Thus the incentives of the asset manager are clear: maximize AUM.

In order to attract inflows, asset managers seek to provide superior return than competitors. Asset returns are the ultimate goal of investor-clients, so asset managers compete with one another to attract client inflows.<sup>29</sup> Investors can quickly sell mutual fund shares, change asset managers, and thus exert pressure on the asset management market.

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<sup>27</sup> See FINRA, *Funds and Fees*, <http://www.finra.org/investors/funds-and-fees> (last visited Jan 1, 2017).

<sup>28</sup> *Id.*

<sup>29</sup> Of course, investors might also reward asset managers who provide better services, more comprehensive services, different fee structures, asset research services etc. These are undoubtedly important features of competition in the industry, and they do not change the analysis above. Overall, the investor will still seek maximal return. In this context, ancillary services can be thought of as separate transactions. If an asset manager provides greater services

There is a large body of academic literature linking fund performance to asset flows. Sirri and Tufano find a “striking performance-flow relationship: Mutual fund consumer chase returns, flocking to funds with the highest recent returns.”<sup>30</sup> Similarly, Ippolito finds “that investors react to new information about product quality ... [and they] allocat[e] investable monies to reward recent good performers.”<sup>31</sup> These are two important studies in the field, but there are substantially more demonstrating the sensitivity of asset flows to relative performance.

There is also substantial evidence linking asset fund flows to industry ratings like Morningstar Rankings. Del Gueriko and Tkac show that fund flows are correlated with Morningstar Rankings.<sup>32</sup> Similarly, Khorana shows that higher Morningstar ratings attract more funds and improve fund market share.<sup>33</sup> Finally, Wall Street coverage of asset managers regularly looks to Morningstar rankings as an indicator of quality and predictor of fund flows. A recent Morgan Stanley report demonstrated the power of Morningstar ratings and Lipper quartiles. They point out that inflows correlate strongly with higher rankings in both.<sup>34</sup>

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and charges concomitant fees, it's an indicator that investors are willing to pay for those separate services at a particular price. That price is the difference between the market rate for the invested money and the greater fee, which provides for the services.

<sup>30</sup> Erik R. Sirri & Peter Tufano, *Costly Search and Mutual Fund Flows*, 53(5) J. of Fin., 1589, at 1590 (1998).

<sup>31</sup> Richard A. Ippolito, *Consumer Reaction to Measures of Poor Quality: Evidence from the Mutual Fund Industry*, 35 J. L. & Econ 45, 54 (1992).

<sup>32</sup> Diane Del Guercio & Paula A. Tkac, *Star Power: The Effect of Morningstar Ratings on Mutual Fund Flows*, 43 J. Fin. Quant. Anal. 907 (2008).

<sup>33</sup> Ajay Khorana & Henri Servaes, *What Drives Market Share in the Mutual Fund Industry?*, 16(1) Rev. of Fin (2012).

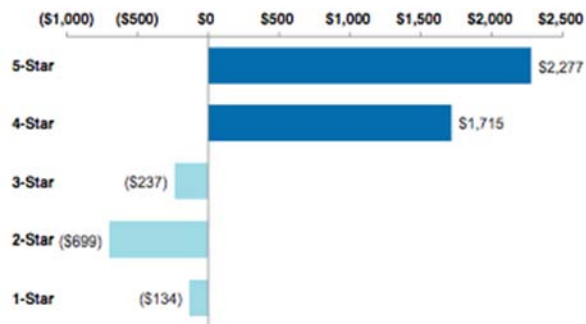
<sup>34</sup> Michael Cyprys, *Brokers and Asset Managers*, Morgan Stanley Research (Nov. 14, 2016).

## 1) Organic Growth Top-Rated Funds Attract the Flows

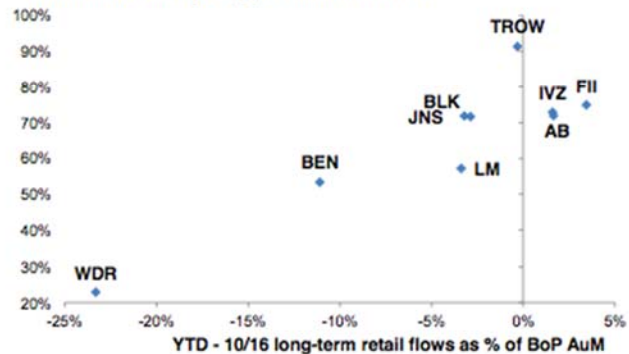
4- and 5-Star Funds Attract the Money...

...and Best-Performing Managers Have Benefited

Industry Flows (\$B) by Morningstar Rating since 1996



% of retail AuM in Top 2 Lipper Quartiles - 3 Year



Achieving superior performance is the primary mode of competition for all forms of asset management competition, but is particularly accentuated among actively managed mutual funds. Index funds have little or no discretion over investment decisions. Actively managed funds on the other hand, must demonstrate their value as stock-pickers by outperforming peers and index measures.<sup>35</sup> They will in turn be rewarded with asset inflows, boosting AUM, and boosting their fee revenues. Importantly, however, they seek to provide relative, and not absolute, return.

### Fee Competition

Competition to enhance investor return can also come in the form of fee reductions. The topic is dominating news media and driving substantial flows into passively managed index funds. Fee competition is present in both actively managed funds<sup>36</sup> and index funds, though the effect is strikingly pronounced among index funds. Index funds have no allocation discretion and

<sup>35</sup> The importance of relative performance and outperforming peers is evidenced in the financial statements of the large asset managers themselves. *See, e.g.* BlackRock 2015 10K: “Historically the Company has competed principally on the basis of its long-term investment performance track record.” “In order to grow its business, BlackRock must be able to compete effectively for AUM.”

<sup>36</sup> *See* John C. Coates & R. Glenn Hubbard, *Competition in the Mutual Fund Industry: Evidence and Implications for Policy*, (John M. Olin Cent. for L. Econ. and Bus., Discussion Paper No. 592, 2007) at 7 for a thorough history of fee competition among actively managed mutual funds. There is some debate in the academic literature as to whether investors respond to higher fees, though there is a great deal of literature to suggest they do.

simply mimic a given index. Thus the primary way to provide superior returns is through fee reductions.

The intensity of fee competition among index funds has driven them close to zero and dominates the media. Bill McNabb, Vanguard's chairman and chief executive commented, "Our structure ensures that we can, as a result of scale and flows, continue to *return value to investors in the form of lower costs*."<sup>37</sup> Headlines and stories appear regularly in financial news.

"Competition between Vanguard and BlackRock is intense in the rapidly expanding ETF industry where both are fighting a cut-throat price war to win market share."<sup>38</sup> "Both [BlackRock and Vanguard] announced additional fee cuts in December, escalating the price war that is hurting their competitors."<sup>39</sup> "Competition has driven the cost of index funds very close to zero."<sup>40</sup>

The low fee index structure has driven massive inflows into the passive management space. Morningstar reports that passive index funds have attracted \$3.03 trillion of net inflows during the past 10 years, compared with only \$160 billion going to their higher fee, actively-managed peers.<sup>41</sup> Such inflows have dramatically increased the presence of index fund ownership of public companies. A decade ago passive funds owned 4.6% of the S&P500; today they own 11.6%.<sup>42</sup> Such inflows have also changed the ownership structures of the largest companies. For

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<sup>37</sup> Miles Johnson & Chris Flood, *BlackRock and Vanguard Enjoy Record Inflows*, Fin. Times, Jan. 13, 2017, <https://www.ft.com/content/22a50eb4-d9ae-11e6-944b-e7eb37a6aa8e> (emphasis added).

<sup>38</sup> *Id.*

<sup>39</sup> Chris Flood, *BlackRock and Vanguard Crush Smaller ETF Rivals*, Fin. Times, Jan. 26, 2017, <https://www.ft.com/content/2588d692-e23c-11e6-8405-9e5580d6e5fb>

<sup>40</sup> Burton G. Malkiel, *Is Indexing Worse Than Marxism?*, Wall St. J., Nov. 22, 2016, <https://www.wsj.com/articles/is-indexing-worse-than-marxism-1479857852>

<sup>41</sup> Michael Rawson & Ben Johnson, *2015 Fee Study: Investors Are Driving Expense Ratios Down*, Morningstar Manager Research.

<sup>42</sup> Krouse, Benoit & McGinty, *supra* note 12.



example, while Vanguard owned 5% or more of only three S&P500 companies in 2005, today they own 5% or more of 468 companies, or 94% of the index.<sup>43</sup>

In addition, intense focus on fees is changing the structure of asset managers themselves, favoring passive over active funds. In the third quarter of 2016, BlackRock proved to be a “microcosm for the fund industry” as 93% of its \$55 billion net inflows went to its lower fee iShares index business.<sup>44</sup> Such shifts reduce the profit margins for large asset managers significantly.

In sum, asset managers compete fiercely for AUM, and their pay structure determines the mode of competition. Relative performance is crucial to attracting inflows.

## **Legal Infrastructure**

While a detailed review of legal infrastructure supporting the mutual fund industry is unnecessary here, it is worth briefly noting the ways in which regulations enhance and support competition in the business. Primarily, regulatory disclosure requirements about returns and fees enhance competition by allowing investors to easily compare funds.

Regulations achieve transparency in a number of ways.<sup>45</sup> Fee extraction through means other than the pre-determined advisory fee is prohibited. Fees in turn are subject to substantial disclosure requirements. Managers must disclose all fees through filings in filings with the SEC and materials sent to investors. To enhance transparency further, regulators and third parties have emerged to also make comparison among funds easy to understand and accessible, e.g. FINRA, Morningstar. All regulations are actively enforced by the SEC. Finally, a floating NAV and

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<sup>43</sup> *Id.*

<sup>44</sup> Chris Dieterich, *BlackRock's Earnings: A Microcosm for the Fund Industry*, Wall St. J., Oct. 18, 2016, <http://blogs.wsj.com/moneybeat/2016/10/18/blackrocks-earnings-a-microcosm-for-the-fund-industry/>.

<sup>45</sup> A network of regulation governs the mutual fund industry. The Investment Company Act of 1940 is the primary source of law and the SEC is the primary empowered regulator.

redeemable shares give investors daily information about fund performance and the opportunity to withdraw at any time. In sum, the network of regulation under the IAC provides for substantial disclosure, easily digestible information to investors, and the basis for strong competition among funds.

## **Section V: What's in the Best Interest of Asset Managers?**

Acknowledging the industry fee structure, evidence to suggest there is strong competition in the asset management industry, and that asset flows are responsive to returns, we can now ask a concrete question to address Azar's causal mechanism: is it necessarily in the best interest of funds to have competing portfolio companies engage in soft-competition?

To answer the question, we will first examine actively managed mutual funds, then passively managed index funds. We will see that for neither fund type is Azar's assumption true. It is not always in the best interest of the funds to have portfolio companies avoid competition.

### **Actively Managed Mutual Funds**

The analysis below demonstrates that competition for flows dominates the desire for capital appreciation, rendering relative performance among competing funds a more important driver of incentives than absolute fund return. As a result, asset managers desire strong performance from companies or industries in which they are overweight, but hope for weak performance from companies in which they are underweight relative to market. Thus, funds do not desire anti-competition among portfolio stocks in which they are underweight.

The fixed fee revenue model implies asset managers have one objective: to maximize the volume of assets under management. AUM has two drivers: 1) the level of portfolio capital

appreciation and 2) the net fund inflows. Increased levels of either boosts AUM and thus the fees earned by the asset manager.

Briefly ignoring the effect of flows and focusing solely on capital appreciation can help demonstrate how these two profit drivers interact with the desire for anti-competition. In a hypothetical world without asset flows or an inability to sell shares in a mutual fund, portfolio managers would simply seek to maximize absolute return. They would have no alternative means of boosting AUM, and fund performance relative to peers would not matter. In this limited context, soft-competition among portfolio companies could increase capital appreciation.

### **Example 1**

To demonstrate the point, imagine a hypothetical actively-managed fund invests \$1 billion spread evenly across four companies (Companies A, B, C, and D), \$250 million in each. Further assume that each company is capable of engaging in soft-competition with other rivals – perhaps because each of the four companies operate in different markets, geographies, industries, etc. If we assume each company grows at 3%, but that a company (say, Company D) could coordinate with its rivals and boost its stock price by an additional 2%, then it would boost the overall fund AUM simply by virtue of greater capital appreciation. If Company D does not engage in soft-competition, the \$1 billion fund would grow at 3% and result in a total fund size of \$1.030 billion after a year. If Company D does engage in soft-competition, the total fund size would rise to \$1.035 billion, gaining an extra \$5 million over the more intensely competitive outcome because of Company D's boost. If the asset manager collected a fee of 0.5% on all assets under management, then soft-competition would increase the fee by \$25,000. Thus, this monopolistic outcome is in the fund's best interest.

Without flows between asset managers, *all* asset managers, regardless of their allocation of funds among the four companies, would prefer soft-competition. In this example, capital appreciation is the only means of achieving increased AUM. So, regardless of whether a fund is underexposed or overexposed to a particular company relative to its peers, it would always prefer soft-competition to maximize AUM growth. This is true despite that a fund underexposed to Company D would gain less than a fund overexposed to Company D. The basic point here is that when fund flows are not a concern, capital appreciation is a limitless good, always to be sought, *regardless of whether such appreciation helps your rivals more than it helps you.*<sup>46</sup>

## **Example 2**

In contrast, the real-world dynamic of flows between worse- and better-performing funds rewards purely relative performance. Asset managers strive to outperform peers to attract fund inflows and prevent current investors from selling shares and investing with rival managers.

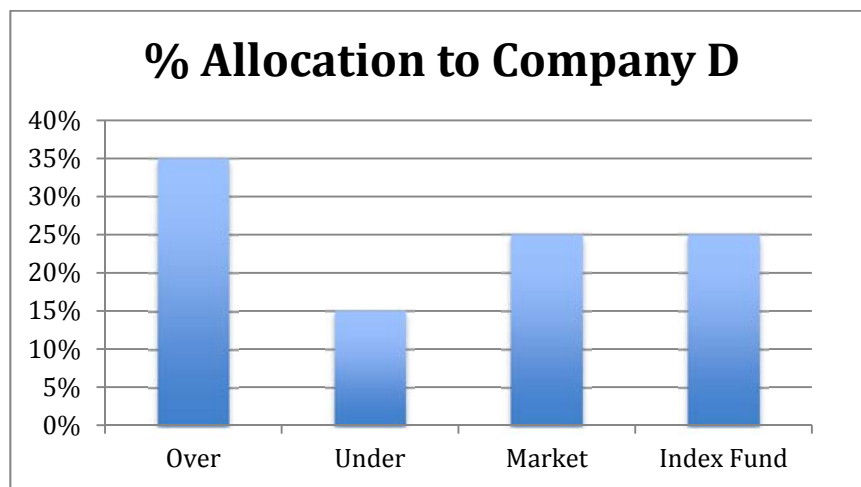
In this context, the benefits a fund might receive from anti-competitive capital appreciation must be weighed against the harm caused by fund flows. As shown above, when capital appreciation is the only objective of fund managers, soft-competition can only benefit all funds, regardless of their allocation. With flows however, if soft-competition or coordination among firms helps a rival more than it helps you, the rival fund will attract future net inflows, not you. As a result, a fund will only desire soft-competition among portfolio companies to which it has allocated greater than index proportions of capital.

To demonstrate the competitive dynamics among asset managers, a stylized example involving four funds will be helpful. Imagine there are four hypothetical funds, and each has

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<sup>46</sup> Note that this conclusion assumes that soft-competition is actually beneficial to capital appreciation and does not have harmful effects on other parts of its portfolio. Those harmful effects would have to be weighed against capital appreciation, a topic explored below.

allocated its capital across four companies (A, B, C, and D) in different proportions. Our focus will be on Company D. The funds are named Over, Under, Market, and Index according to the proportion of funds allocated to Company D. Fund Over will be overexposed to Company D relative to the index weighting, and Fund Under will be underexposed. Market and Index each distribute capital evenly across the companies and thus have a 25% allocation to Company D, which we will call the index weighting. Assume the funds evenly allocate the remainder of their available assets evenly across the other Companies, A, B, and C. The graph below plots the percent of assets each fund has allocated to Company D.



To see the interaction between capital appreciation and fund flows as a revenue source, assume that Companies A, B, and C grow at 5% without soft-competition, and Company D grows at 10% with soft-competition. That is to say, after a given period, say a year, the stock value of assets in each company will appreciate by 5% or 10%, depending on whether or not there is soft-competition. To see if all funds benefit from soft-competition, we can compare the performance of each fund after a year of growth.

While all funds experience an AUM boost from higher growth in Company D, the gains from soft-competition will not be evenly distributed. Because funds have different amounts

invested in Company D, the highest performing industry, each fund will differ in its total, year-end AUM. Fund Over will gain the most (ending at \$1.068 billion), and Under the least (\$1.058 billion), with the Market and Index funds in between (\$1.063 billion).

The fees earned by each fund will differ accordingly. Here, Funds Over, Under, and Market are all actively managed mutual funds and charge a fixed fee of 0.5% on total AUM. Fund Index is a passively managed index fund, and charges a much lower rate of 0.1%. The table below shows the dispersion of AUM appreciation and fees collected.

<b>Table 1</b>	<b>Starting AUM</b>	<b>Year-End AUM</b>	<b>Fees Collected</b>	<b>Returns</b>
<b>Over</b>	\$1.000 B	\$1.068 B	5.34 M	6.22%
<b>Under</b>	\$1.000 B	\$1.058 B	5.29 M	5.22%
<b>Market</b>	\$1.000 B	\$1.063 B	5.31 M	5.72%
<b>Index Fund</b>	\$1.000 B	\$1.063 B	1.06 M	6.14%

The differences in AUM growth also imply differences in fund performance. After subtracting fees from the overall fund gains, we can calculate the level of net returns, which of course varies with the amount of exposure to the higher performing Company D. In this example, the actively managed funds yield 6.22% (Over), 5.72% (Market), and 5.22% (Under). The passively managed Index fund, with a return of 6.14%, demonstrates the impact of fees on performance. Taken together, funds with greater exposures to Company D and lower fees outperformed other funds.

Difference in performance will trigger a response from investors who will chase the highest performing funds. Investors will sell shares in underperforming funds and reinvest in higher performing funds, and the losses from this punishment will outweigh the gains from soft-competition for funds that are *underexposed* to Company D. All funds benefit from the capital-

gains AUM boost that soft-competition provides, but when investors chase high performance by withdrawing money from a poorer performer, the AUM benefits from soft-competition can be eroded by withdrawals.

In reality, foregone inflows are equally damaging as outflows and present the same profit maximization question for a fund as in the case where it faces withdrawals. That is, a fund would weigh the current benefit received from a soft-competition-based AUM boost against the loss of fee income from forgone inflows in the future.

For simplicity, we will look at the level of withdrawals required to eliminate any potential gains from soft-competition. Investors need to withdraw the amount of AUM required to generate the amount of fees that soft-competition provided. Here, we take the difference in fees between the anticompetitive and competitive outcomes, and divide the result by the fee amount. These results tell us that for the AUM boost from soft-competition to be eliminated in our example, investors need to withdraw 0.71% of AUM in the case of Under, and 1.18% of assets in the case of Market and Index. The table below provides the calculations.

	[X]	[Y]	[X - Y]	[Z]	[(X - Y) / Z]	Percent of
<b>Table 2</b>	<b>Fees With Soft-comp</b>	<b>Fees Without Soft-comp</b>	<b>Difference in Fees</b>	<b>Fee Amount</b>	<b>Outflow Required to Eliminate Gains</b>	<b>Fund to Elim. Gains</b>
<b>Over</b>	5.34 M	5.25 M	87,500	0.50%	-	-
<b>Under</b>	5.29 M	5.25 M	37,500	0.50%	7,500,000	0.71%
<b>Market</b>	5.31 M	5.25 M	62,500	0.50%	12,500,000	1.18%
<b>Index</b>	1.06 M	1.05 M	12,500	0.10%	12,500,000	1.18%

The precise question raised by Azar is whether or not all asset managers benefit from soft-competition in a particular industry like airlines or banks. This example demonstrates that it is only in the interest of funds that are underexposed to such a company, if the punishment from

underperformance does not outweigh the soft-competition based AUM gains. Here, if the punishment for underperforming reaches 0.71% or 1.18%, then soft-competition is *not* in the best interest of the funds that are underexposed to Company D.

A substantial body of academic literature suggests the magnitude of reward for highly performing funds – and punishment for poor performers – is large, and much larger than that required in our simplistic example. As noted, while we calculated the amount of withdrawals necessary to eliminate gains from soft-competition, the literature suggests that punishment to poorly performing funds actually comes in the form of foregone inflows.<sup>47</sup> Nonetheless we can get a sense for the orders of magnitude involved.<sup>48</sup> It is clear from the following research that the flows related to performance are substantial and dominate any AUM related asset boost:

Khorana and Servaes examine funds from 1976 to 2009 and find that improvement from the 25<sup>th</sup> percentile to the 75<sup>th</sup> percentile “results in an increase in *market share* of 4.7%.”<sup>49</sup> They further find that top performers are rewarded more substantially. Having a top 5% fund in the family led to an increase in market share of 42%.<sup>50</sup> Sirri and Tufano study the period between 1971 and 1990 and show the performance-flow relationship is “very strong” for the top 20<sup>th</sup> percentile.<sup>51</sup> In their study, moving from the 85<sup>th</sup> percentile to the 90<sup>th</sup> percentile implied 8.4%

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<sup>47</sup> Studies specifically addressing asymmetries and nonlinearities in fund rewards include Ippolito, *supra* note 31; Khorana, & Servaes, *supra* note 33; William Goetzmann & Peles Nadav, *Cognitive Dissonance and Mutual Fund Investors*, 20(2) J. of Fin. Res. (1997); Judith Chevalier & Glenn Ellison, *Risk Taking by Mutual Funds as a Response to Incentives*, J. of Pol. Econ. (1997); Martin J. Gruber, *Another puzzle: The Growth in Actively Managed Mutual Funds*, 51(3) J. of Fin. (1996).

<sup>48</sup> There is a robust body of literature documenting the relationship between relative performance of mutual funds and flows. The studies mentioned are important, but in not comprehensive. The following studies document the phenomenon as well: Chevalier & Ellison, *supra* note 47; Roger M. Edelen, *Investor Flows and the Assessed Performance of Open-End Mutual Funds*, 53 J. Fin. Econ. (1999); Gruber, *supra* note 47; Ilan Guedj and Jannette Papstaikoudi, *Can Mutual Fund Families Affect the Performance of their Funds?*, Working Paper, Sloan School of Management, MIT (2005).

<sup>49</sup> Khorana & Servaes, *supra* note 33, at 97 (emphasis added).

<sup>50</sup> *Id.* at 97-98.

<sup>51</sup> Sirri & Tufano, *supra* note 30, at 1599-1600.



greater inflow.<sup>52</sup> Ippolito studied 143 funds from the period 1965 to 1984 and found that annual growth rates are 1.4% higher *annually* for funds that outperform the index by 2% in each of the past three years.<sup>53</sup> The author also found that most recent year's performance has 150% the effect the two years prior.<sup>54</sup>

The example here demonstrates a simple and intuitive point: asset managers desire industries and companies to which they are overexposed to outperform, and companies to which they are underexposed to underperform. It is not in the best interest of all mutual funds to have soft-competition occur among portfolio companies, instead it is only in the best interest of funds that have taken bets on the companies in question by increasing their exposure above market levels. Relative performance is key to winning inflows, and thus asset managers are concerned not just with how much a particular outcome helps the fund itself, but also with how much it helps rivals. The potential gains from soft-competition can easily be eroded by withdrawals or foregone inflows if such soft-competition causes well-positioned rivals to achieve superior returns.

### **Closet Indexing, Agency Costs, and The Magnitude of Gains to Soft-competition**

Before examining the incentives of index funds, it is worth briefly examining three other facets of actively managed mutual fund incentives: 1) “closet indexing” and 2) agency issues and 3) the magnitude of gains from soft-competition.

#### ***Closet Indexing***

Actively managed mutual funds may not deviate significantly from passive index allocations of capital. Instead, there is evidence that funds merely tweak exposures to index

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<sup>52</sup> *Id.*

<sup>53</sup> Ippolito, *supra* note 31, at 60.

<sup>54</sup> *Id.*

allocations, making the fund slightly overweight some stocks and underweight others.<sup>55</sup> For example, Cremers and Petajisto develop a measure called “Active Share” which represents the degree to which an actively managed fund simply replicates an index. A fund with a 0% Active Share would perfectly replicate index allocations, and they consider funds in the range of 20-60% Active Share to be “closet indexers.” They find that 73% of actively managed funds were closet indexers.

The evidence of closet indexing is consistent with our findings that superior relative returns are crucial to competing in the asset management business. First, closet indexing reflects an acknowledgment by asset managers of the power of relative performance. Simply put, they may be fearful of straying too far from the pack. By replicating the index, funds ensure they will not be the loser among funds investing in a particular market. By deviating too much from an index – say by dropping an important equity or committing outsized proportions to a particular sector – the fund risks being a bottom performer and missing out on fund inflows in future periods.

Second, it is possible that closet indexing is a strategy to boost returns (and thus relative performance) by reducing expenses. Stock picking can be expensive business. It requires hiring highly paid professionals and teams of analysts crunching numbers. In the numerical example above, it was clear that fees could impact the investor’s net fund returns considerably. It is possible then that closet indexing is a way for funds to increase returns by cheaply replicating indexes. In doing so, they can reduce fees to investors and inflate their net-of-fee returns.

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<sup>55</sup> See, e.g., K. J. Martijn Cremers & Antti Petajisto, *How Active Is Your Fund Manager? A New Measure That Predicts Performance*, 22(9) Rev. of Fin. Stud. (2009).

Finally, complementary research by Del Guerico and Reuter suggest that attracting fund flows are the key motivating force behind the relatively few funds that avoid closet indexing.<sup>56</sup> In their research, they segment mutual funds by the type of investor holding the funds. Some investors buy through brokers and are typically less sophisticated. Others buy directly, and are more active investors. The authors show that the degree of active management varies according to the propensity of the investor class to chase funds with superior performance.<sup>57</sup> More sophisticated investors are flighty and chase returns. Overall, funds will only spend resources on increasing their Active Share “to the extent they expect the investments to increase investor flow.”<sup>58</sup> That is, funds will spend more money on being active managers if they will be rewarded through asset inflows to boost their AUM. Faced with slower moving investors, funds will be less active. Their work demonstrates the importance of fund flows as a motivating force for active mutual funds.

### ***Agency Issues***

A complimentary question to this paper would ask whether or not asset managers would be willing to spend resources to achieve the anti-competitive outcomes that Azar asserts are in their best interest. This paper does not address the issue directly because Azar’s thesis somewhat preempts the question. He asserts that portfolio companies will coordinate for monopolistic outcomes because it is in the best interest of the asset-manager shareholders, not necessarily because asset managers are exerting influence to achieve these aims (though he leaves open that

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<sup>56</sup> Diane Del Guercio & Jonathan Reuter, *Mutual Fund Performance and the Incentive to Generate Alpha*, 69(4) J. of Fin., (2014).

<sup>57</sup> *Id.* at 1684.

<sup>58</sup> *Id.* at 1674.

possibility).<sup>59</sup> As a result, this paper has merely focused on what outcomes would be in an asset manager's best interest.

A natural follow up study would focus on asset managers' willingness to spend resources to achieve anti-competitive outcomes. Recent research by Bebchuk and Hirst sheds some light on the question.<sup>60</sup> The authors look at agency problems that exist between asset managers and their investor clients. They point out that one key agency problem driver is that asset managers "bear the cost of engagement but capture only a small fraction of the benefits" in fixed fees.<sup>61</sup> For example, if an asset manager has a \$1 billion stake in a company, charges a fixed fee of 1%, and is aware of a \$1 million value enhancing project, the manager will only be willing to invest \$10,000 to achieve the gains.<sup>62</sup>

For actively managed funds that compete on a relative basis, however, the effect is more pronounced.<sup>63</sup> As discussed above, for all companies that are underweight in the fund's portfolio, value-enhancing projects would actually worsen the fund's performance relative to an index. But, for overweight companies, a fund's willingness to invest in value-enhancing projects would "depend on the extent to which the company is overweight in the portfolio." That is, a fund's willingness to invest will be limited by the *marginal* amount of exposure between the fund and the index. If market weight is 1%, and fund has a 1.2% exposure, it's the 0.2% that provides the incentive to invest in positive net present value projects. Thus, the incentive is obviously quite small.

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<sup>59</sup> Azar, Schmalz & Tecu, *supra* note 1, at 5, notes "It is important to realize again that it is both unlikely and unnecessary that shareholders give their portfolio firms explicit directions with respect to the desired intensity of competition in particular markets." Azar Raina & Schmalz, *supra* note 3, at 5 concludes, "[i]n sum, the outcomes we document can be implemented either by active involvement in corporate governance on behalf of the mutual fund companies, or, more simply, by the index funds' failure to push firms to compete hard, implement "steep" compensation contract, and by preventing activist campaigns that would otherwise pursue such goals."

<sup>60</sup> Bebchuk & Hirst, *supra* note 22, at 10.

<sup>61</sup> *Id.* at 6.

<sup>62</sup> *Id.*

<sup>63</sup> *Id.* at 10.

The same framework is helpful in thinking about anti-competitive outcomes. As noted above, Azar left open the possibility that portfolio companies internalize the best interests of asset managers, but they also do provide “circumstantial evidence” that asset managers “engage” with portfolio firms to “reduce the incidence of...undesirable price wars between their commonly owned firms.”<sup>64</sup> Bebchuk and Hirst point out that the amounts such firms would be willing to invest in resources to “engage” with portfolio firms would be very small. This is an artifact of the low- and fixed-fee pricing model. They would capture relatively little of the “improved,” more profitable anti-competitive outcome by virtue of their small ownership percentage and small fee. This analysis accords with the reality that the largest asset managers dedicate very few resources to corporate governance departments and teams that decide how to vote an institution’s shares.<sup>65</sup>

### ***The Magnitude of Gains from Soft-competition***

It is worth noting that although this paper does not thoroughly investigate what the potential gains to soft-competition could be for an asset manager, the exact magnitude of the effect is irrelevant to our results. The example above used a 5% gain over standard industry growth, which was the upper end of the 3% to 5% range that Azar estimates could be the impact of asset manager collusive pressure in the airline industry. However, a very high level of rewards to soft-competition would only increase the dispersion of returns among asset managers. Smaller deviations for index-level *allocations* would then result in larger deviations from index-level *returns*. In turn, while those over exposed to an industry would benefit more from soft-competition, those underexposed would be punished more severely. As long as funds compete

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<sup>64</sup> Azar, Schmalz & Tecu, *supra* note 1, at 5.

<sup>65</sup> Krouse, Benoit & McGinty, *supra* note 12.

with each other on relative performance, then there will still be losers if soft-competition occurs in some corner of the market.

## **Index Funds**

Over the past decade, index funds have absorbed massive amounts of capital and have grown much more quickly than their actively managed counterparts. Both index mutual funds and exchange traded index funds (ETFs) are growing rapidly. As of year-end 2015, index mutual funds held \$2.2 trillion in assets, an \$800 billion gain over a decade prior.<sup>66</sup> Meanwhile, the number of ETF funds has increased from 19 in 1997 to 1,594 in 2015, with assets over \$2 trillion.<sup>67</sup>

Again, the central question of interest is: Is soft-competition among portfolio companies in the best interest of passive index funds?

The analysis below will demonstrate that soft-competition is not necessarily in the best interest of index funds. Large asset managers offer a variety of different indexed products with substantially different investor popularity. As a result, the aggregate portfolio of assets held in index funds differs substantially across asset managers. The varying portfolios in turn imply that different portfolio managers desire different types of competition among portfolio firms. Asymmetries in investment positions in rival firms can mean that for some asset managers, the gains from soft-competition can be outweighed by competitive gains in companies in which the asset manager has a greater stake.

A related point to the analysis above is that broad market exposures of index funds further complicate any potential gains from soft-competition. Since large index fund managers

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<sup>66</sup> ICI 2016 Investment Company Factbook, at 44-45, [www.icifactbook.org](http://www.icifactbook.org) [[https://www.ici.org/pdf/2016\\_factbook.pdf](https://www.ici.org/pdf/2016_factbook.pdf)].

<sup>67</sup> *Id.* at 22, 61.

are exposed to industries and the vast majority of public equities, monopolistic pricing among some companies can harm other portfolio equities in related industries.

### Industry Concentration and Variation in Index Products

Despite substantial industry concentration in providing passively managed index funds, there is substantial variation in the products offered and the popularity of such products across asset managers.

In a recent study from the University of Amsterdam<sup>68</sup>, the authors aggregate data to show that few of the overall largest asset managers have a presence in the equity index space. The chart below, recreated from the authors' data, is based on June 2016 data show that BlackRock, Vanguard and State Street hold the vast majority of assets in the index market. And further, outside of those players, there are few others.

<b>Table 3</b>	<b>Total AUM in Equity (\$B)</b>	<b>AUM in Passive Equity Index Funds (\$B)</b>
<b>BlackRock</b>	2,644	2,166
<b>Vanguard</b>	2,270	1,839
<b>State Street</b>	1,377	1,275
<b>Fidelity</b>	1,004	170
<b>Invesco</b>	377	85
<b>T. Rowe Price</b>	337	30
<b>BNY Mellon</b>	247	14
<b>Capital Group</b>	838	0
<b>Wellington Mgmt</b>	476	0
<b>JP Morgan Chase</b>	342	0
<b>Affiliated Managers</b>	336	0
<b>Franklin Templeton</b>	297	0
<b>Goldman Sachs</b>	254	0
<b>Dimensional F. Adv.</b>	245	0
<b>Legg Mason</b>	204	0

<sup>68</sup> Fichtner, Heemskerk & Garcia-Bernardo, *supra* note 24, at 7.

However, in considering the concentration of the industry, it is important to note that these data do not include other types of asset managers that are experimenting with entering the rapidly growing index business. For example, Goldman Sachs, which is not a traditional asset manager *per se*, has recently launched an ETF platform, and in only 18 months, has raised over \$3 billion dollars.<sup>69</sup> Similarly, but less recently, Deutsche Bank entered the market and currently manages \$13 billion in indexed ETF assets.<sup>70</sup> Wisdom Tree reports \$42 billion in equity ETF assets as of March 2017.<sup>71</sup> Others including Guggenheim, Invesco and Charles Schwab also offer indexed equity ETFs. Although most new funds do not attract assets as rapidly as Goldman Sachs, other large investment players like Morgan Stanley, JP Morgan, etc., may decide to get into the business to offer a one-stop-shop platform and prevent customers from taking funds elsewhere.

In any case, commentators also emphasize that index funds offered by asset managers recreate very broad indexes. For example, Adams, Mansi and Nishikawa look at the universe of index fund assets from 1998 to 2007. They find that the S&P 500 is the most frequently used index in the sample, and represents roughly half of all index funds in the sample.<sup>72</sup> The ICI 2016 Factbook reports that funds indexed to the S&P 500 represent 31% of all indexed assets.<sup>73</sup>

However, in aggregate the portfolio of investments held via index instruments at a large asset manager can differ because of substantially different product offerings and different popularities of products across firms. The two facts pointed out above – 1) that there are

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<sup>69</sup> Asjylyn Loder, *Goldman's \$3 Billion Drop in the ETF Bucket*, Wall St. J., Mar. 2, 2017, <https://www.wsj.com/articles/goldmans-3-billion-drop-in-the-etf-bucket-1488483434>.

<sup>70</sup> Asjylyn Loder, *ETFs Provide Some Good News at Deutsche Bank*, Wall St. J., Feb. 27, 2017, <https://www.wsj.com/articles/etfs-provide-some-good-news-at-deutsche-bank-1488191402>.

<sup>71</sup> WisdomTree, <https://www.wisdomtree.com/etfs> (last visited Mar. 24, 2017).

<sup>72</sup> John C. Adams, Sattar A. Mansi & Takeshi Nishikawa, *Internal Governance Mechanisms and Operational Performance: Evidence From Index Mutual Funds*, 23(3) Rev. of Fin. Stud. (2009).

<sup>73</sup> ICI 2016 Investment Company Factbook, *supra* note 66 at 45.



relatively few players offering index products and 2) that most assets are held in broad based funds – do not imply that two large asset manager index portfolios look the same or even similar.

There are three reasons why the aggregate index fund portfolio of a large asset manager can differ substantially from that of a peer. First, large asset managers may choose to follow different indexes. Of course, all index fund sponsors are likely to offer the S&P 500, but variations occur in other, less standardized segments of the market. For example, the most popular BlackRock small-cap index fund is the iShares Russell 2000 ETF while the most popular Vanguard small-cap index is the Vanguard Small-Cap ETF which tracks the CRSP US Small Cap Index<sup>74, 75</sup> As of February 2017, the CRSP index included 822 companies, less than half of the Russell 2000. Similarly, in the mid-cap space, the most popular State Street tracks the S&P 400 Mid-Cap index while the Vanguard fund tracks another CRSP index. The point here is that spectrum of offerings across firms, while they certainly have similarities in the most popular market segments, are not identical.

Second, in addition to different tracking indexes, index funds offer more customized rules based investing, less commonly replicated by peers. There are several index product types, for example, that are not “index tracking” in the common use of the term. That is, to qualify as an index fund, a fund must invest according to preset and transparent rules. However, that does not necessarily imply that the fund must re-create what is already a standard “index.” Therefore, an index mutual fund can be unique among its peers, with different rules governing its investment decisions.

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<sup>74</sup> Center for Research in Securities Prices, <http://www.crsp.com/> (last visited Mar. 24, 2017). CRSP provides market-monitoring indexes.

<sup>75</sup> ETF.com, <http://etfdb.com/type/size/small-cap/> (last visited Mar. 24, 2017).

Two recent developments demonstrate the importance of this category of index instrument: 1) target date funds and 2) smart beta funds.<sup>76</sup> Target date funds choose a target date for retirement, and over time, the investment portfolio evolves and rebalances according to preset rules. Thus, it is not indexed in a traditional sense, but it has transparent investment rules. Target date funds have ballooned from operating \$323 billion in 2010 to \$936 billion as of February 2017.<sup>77</sup> Smart beta funds balance portfolio assets according to attributes other than the traditional market capitalization like book value or earnings. Thus the allocations of smart beta funds vary significantly when compared to standard index funds. There are many dimensions of weighting indexes for a smart beta fund to customize, e.g. value, growth, dividend screens, fundamental weights, and multi factor weightings. Indeed each of these categories has many metrics that alone or in combination can “weight” companies in a portfolio.<sup>78</sup> These funds have also seen explosive growth over the past six years, increasing from just \$185 billion at the end of 2010 to \$746 billion as of February 2017.<sup>79</sup> Each of these fund types have been described by John Bogel, founder of Vanguard, as mixing attributes of active and passive investing and thus offer unique (as in, not standardized index) solutions to investors.<sup>80</sup>

Third, and perhaps most importantly, the popularity of various product offerings will render the exposures of each firm very different. For example, in the small-cap index space, BlackRock holds \$38 billion in their Russell 2000 Index, \$36 billion in their Russell 1000 Value ETF, \$33 Billion in their Russell 1000 Growth ETF, and \$29 billion in their Core S&P Small-

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<sup>76</sup> Daisy Maxey, *Where to Find Active Fund Strategies in a Passive World*, Wall. St. J., Mar.17, 2017, <https://www.wsj.com/articles/where-to-find-active-fund-strategies-in-a-passive-world-1489780320>.

<sup>77</sup> *Id.*

<sup>78</sup> Morningstar Strategic Beta Guide, <https://corporate.morningstar.com/US/documents/Indexes/Strategic-Beta-FAQ.pdf>.

<sup>79</sup> Daisy Maxey, *supra* note 76.

<sup>80</sup> *Id.*

Cap ETF.<sup>81</sup> The ratio of all funds to each other are 1.3 to 1.2 to 1.1 to 1.0, respectively. The analogous Vanguard funds have significantly less AUM (though Vanguard has substantially more in other small-cap indexes), and they have the following profile: \$1.6 billion, \$2.6 billion, \$3.3 billion, and \$1.1 billion.<sup>82</sup> The ratios among them are 1.5 to 2.4 to 3.0 to 1.0. This is one small example in one index investment strategy at only two firms. But the key point is that across the hundreds of funds offered by the all index mutual fund and ETF providers – across all industries, strategies, and sectors – there will be substantial variety in the amount of exposure to any particular company.

### **Variation in Ownership at the Corporate Level**

Does the variety predicted by the analysis above bear out in data about specific company ownership? That is, is there substantial variation in the amounts large index fund sponsors hold in competing firms?

There are two recent data sources to suggest the answer is ‘yes.’

First, the University of Amsterdam study shows the number of companies in which large asset managers hold differing percentages of ownership.<sup>83</sup> That is, for several asset managers, the authors show the number of companies of which the asset manager owns between 3-5% of outstanding shares, between 5-10% shares, and greater than 10%. I’ve reproduced five lines of their table here.<sup>84</sup> We can see that indeed, there is significant variety in the percentage of companies that the large asset managers hold. The authors do not show the number of companies

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<sup>81</sup> BlackRock, <https://www.blackrock.com/investing/products/product-list-fund#!type=ishares&tab=overview&view=list> (last visited Mar. 23, 2017).

<sup>82</sup> Vanguard, <https://investor.vanguard.com/etf/list#/etf/asset-class/month-end-returns> (last visited Mar. 23, 2017).

<sup>83</sup> Fichtner, Heemskerk & Garcia-Bernardo, *supra* note 24, at 14.

<sup>84</sup> *Id.* I have modified the calculations slightly so that the figures are not inclusive of one another. That is, the authors included in the 3-5% category, all companies in which the manager also held greater than 5%, for example.

of which asset managers hold less than 3%, but we can see that there is clearly wide range of ownership ranging between less than 3% and 10%.

<b>Table 4</b>	<b>Holdings &gt; 3%</b>	<b>Holdings &gt; 5%</b>	<b>Holdings &gt; 10%</b>
<b>BlackRock</b>	1,391	2,257	375
<b>Vanguard</b>	1,129	1,692	163
<b>Fidelity</b>	1,153	803	506
<b>Dim. Fund Adv.</b>	1,122	586	4
<b>State Street</b>	845	268	13

While this table does not specifically isolate assets held in index funds, and is mixed with actively managed funds, there is strong reason to believe the data reflect underlying variation in the index fund ownership. In Table 3 above (page 28), we can see that for BlackRock, Vanguard, and State Street, the vast majority of their equity holdings are held in index funds. The authors calculate that share of equity assets held in passive funds is 81.3%, 81.1% and 96.9%, respectively.<sup>85</sup> Thus, while it is theoretically possible that this variation in corporate level ownership is solely coming from the actively managed funds in their businesses, it doesn't seem likely.

Second, recent work by Rock and Rubinfeld show significant variation in ownership of airlines among large asset managers.<sup>86</sup> I have reproduced three lines of their data below, which demonstrate that the three largest asset managers have far from uniform ownership stakes in the four airlines listed. Again here, the data reflect both active and passive equity, but for the reasons explained above, there may be good reason to think that underlying variation in ownership stakes emanates from index holdings.

<sup>85</sup> Fichtner, Heemskerk & Garcia-Bernardo, *supra* note 24, at 7.

<sup>86</sup> Rock & Rubinfeld, *supra* note 9, at 6.

<b>Table 5<sup>87</sup></b> <b>(% ownership)</b>	<b>Delta</b>	<b>United</b>	<b>Southwest</b>	<b>JetBlue</b>
<b>BlackRock</b>	4.7	8.3	4.5	6.6
<b>Vanguard</b>	5.2	4.8	6.2	4.9
<b>State Street</b>	0.0	0.0	3.7	0.0

### **Variation in Equity Holdings Effects on Competition**

What does this variation imply for our question of interest, whether or not index fund managers would benefit from soft-competition among rival portfolio firms? When asset managers have substantial variation in the amount of funds invested in particular companies and differences in the allocation of funds among rivals, it implies those funds have different incentives for competition as shareholders.

Imagine there are two rivals of roughly equivalent market capitalization deciding how to compete with each other. Further imagine that there is an investment firm that holds both rivals' stocks, but holds 6% of one and 2% of the other. Would it always be in the best interest of the investment firm if the two companies engaged in soft-competition? The theoretical answer is "it depends." It depends on what soft-competition will do for the two firms. If they would both be able raise prices dramatically and increase profits concomitantly, then perhaps the investment firm would prefer this outcome. However, we must recognize that the investment firm is *three times as sensitive* to outcomes at the 6% company as it is to the 2% company. If the 6% company is able to, say, steal market share successfully and operate profitably, the investment firm may prefer this outcome. Thus, the realistic answer is that the investment firm prefers that the 6% to do as well as it can.

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<sup>87</sup> *Id.*

Further, asymmetrical holdings will make soft-competition outcomes unstable and difficult to maintain. Imagine in our example above that the two companies were engaged a soft-competition arrangement. In a standard collusive arrangement, there is always an incentive to cheat. OPEC and other cartels face the problem that once prices are high, everyone has an incentive to lower their price, just a little bit, to experience a dramatic increase in demand. The incentives to cheat for the 6% company would be dramatically heightened. It would know that the investment firm would benefit by a factor of three for undercutting its 2% rival. Asymmetries like these can make soft-competition arrangements unstable.

Another odd artifact of the theoretical example above is that if our two companies' managers truly did internalize the incentives of the investment firms, there might be situations in which the 2% company seeks to sacrifice itself, if it thinks it can help the 6% company achieve outsized gains. The investment firm would be perfectly happy to lose its 2% investment if that resulted in one-third that value or more in gains to the company to which it is three times as sensitive. While this scenario certainly seems farfetched in reality, it demonstrates that corporate managers that attempt to behave purely in the best interests of their asset-manager investors, and not to maximize their own return, would face complex and odd incentives.

### **The Corporate Manager's Problem of Incorporating Incentives**

Although this paper is primarily concerned with whether or not soft-competition is in the best interest of the managers, it is worth pausing here and asking what our two corporate managers would need to know in order to behave in the asset managers' best interest.

Corporate managers undoubtedly know who their top investors are, but that would not be enough. They would also need to know which of its rivals the asset manager is exposed to, and in what amount relative to itself. The corporate manager attuned to the investment advisor's

interests, would thus have to incorporate a matrix of incentives into his decisions. On one axis would be a list of investors, and on another would be which of its rivals that company holds.

But the problem is actually even deeper than that because often decisions about pricing (and thus soft-competition) do not happen anywhere near the C-suite. Thus the teams pricing the company's product would need to be aware not only of which asset managers are top holders, but which of their rivals those investors hold. They could then know how firm they should be with which rivals in price competition. A sophisticated player might even incorporate the proportions of the investors' assets, giving more deference to those companies to which it is overexposed.

In the case of airlines, it is not impossible that pricing groups incorporate some of this information. Airlines price flights using algorithms that theoretically could incorporate investor information into their models.

Although this section is purely confined to the topic of index funds, as noted above Rock and Rubinfeld aggregate data on asset manager ownership of four airlines. The full table is reproduced as an appendix of this paper. It demonstrates that BlackRock and Vanguard are in fact the only two advisors that own all stock in all four airlines (Delta, United, Southwest, and JetBlue). Of the other 20 investors they show, they often hold only one or two of the stocks. That implies a complex landscape for companies that, according to Azar, attempt to incorporate the effects of strategic decisions on rivals mutually held by their asset manager investors.

### **The Complication of Broad Market Exposure**

A further complication, briefly worth noting, is that the breadth of index funds investments would imply that monopolistic outcomes in some markets could impair returns in others. In his response to the Azar airlines analysis, Woodbury points out that the airlines

industry – or any industry – is a small “component of the portfolios of institutional investors.”<sup>88</sup>

Large institutional investors “also have interests in complementary products such as airline-related services – e.g., maintenance, baggage, and food services – and online travel agencies...[I]ncreases in airline fares are likely to result in reduced demands for these complementary inputs and so reduce the profits of the institutional investors.”<sup>89</sup>

Woodbury is on strong ground. Monopolistic pricing, compared to competitive outcomes, extracts greater surplus from those it does business with. Either by reducing demand to suppliers and thus depressing related industry growth or by extracting consumer surplus which would reduce their overall spending capability, monopolistic pricing is not a guaranteed way to increase profits for asset managers exposed to every sector, industry, and virtually every public company.

## Section Conclusion

This section tested what Azar assumes in his papers: that it is necessarily in the best interest of large asset managers if portfolio companies collude. All companies’ incentives stem from their revenue model, and asset managers are no different. By examining the two major businesses of large asset managers, actively managed mutual funds and passively managed index funds, and how those businesses earn profits, we can better understand the incentives of each fund type. Azar’s presumption that maximizing return through soft-competition seems to stumble in both cases.

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<sup>88</sup> John Woodbury, Paper Trail: Working Papers and Recent Scholarship. Vol. 14, No. 2. (Dec. 2014) at 6; *see also* Rock & Rubinfeld, *supra* note 9, at 7 (when one realizes that BlackRock and Vanguard also manage funds that own shares of the airlines’ suppliers (e.g., Exxon, Boeing) and customers (e.g. GE, GM, and IBM) ...factoring in the effect of an airline’s strategy on the fund’s portfolio would be an extremely complex endeavor that would require determining the extent to which overcharging can or cannot be passed along to the ultimate consumers).

<sup>89</sup> *Id.*



## Section VI: Aggregation of Fund Interests at the Family Level: The Re-Dispersion of Ownership

The second key assumption of the Azar thesis is that the aggregate holdings at the family level, comprising the holdings of hundreds of legally distinct funds, face uniform incentives for a company's performance. This presumption proves to be untrue.

The collective stakes of a large asset manager in any particular company has no obvious incentive for particular corporate outcomes. In their papers, Azar refer to the fact that large asset managers, are among the largest shareholders in many large public companies. For example, Vanguard owns 6.02% of Apple. However, that 6.02% is not held within any one particular fund; it comprises the holdings of possibly hundreds of funds. As shown in the previous sections, the underlying funds may have differing desires for the Apple stock. Some may be short the stock (i.e. underweight) and others may be long (overweight). Thus, the aggregate figure of Vanguard's holdings tells us little about its incentive with regard to the stock.

Indeed, given the scale, breadth, and complexity of firms like Vanguard, it is quite possible that they *themselves* are not aware of what type of performance from Apple is in their best interest. To know for sure it would need to know not only the aggregate holdings, but whether or not underlying funds are under or overexposed to the stock relative to peers. Perhaps then they could know directionally, what would optimize their profit with respect to Apple stock performance. However, that does not fully solve the problem. It would further need to estimate how sensitive each fund's investors are to under/over performance. That is, perhaps the technology sector investors are much more flighty than other fund investors. The result is that perhaps technology sector managed funds should be given deference over other funds that have differing exposures. But further, the firm would need to compare profitability of the various

funds. Higher fee funds are of course more valuable to the manager. The list of questions could go on, but the key point is that the family-level holdings are not indicators of how the underlying funds are exposed to a particular stock.

This analysis accords with the reality that large asset managers invest relatively little in corporate governance departments that decide how to vote shares. A recent Wall Street Journal report found that Vanguard has 15 people overseeing corporate governance and voting of 13,000 companies; BlackRock has about 24 working on governance issues at some 14,000 companies; and Boston-based State Street Global Advisors, part of State Street Corp., has fewer than 10 employees overseeing governance at 9,000 companies.<sup>90</sup> As Bebchuk and Hirst point out, these figures indicate that these asset managers “devote less than a person-workday...to monitoring and engagement with each of its portfolio companies, even though each of these investment managers is likely to hold several percentages of the company’s stock and to be among of its largest shareholders.”<sup>91</sup>

However, while it is true large asset managers do not have large teams in governance departments as of yet, they have recently committed to increasing resources committed to governance and continually report that they are committed to actively encouraging good governance practices. BlackRock, Vanguard, and State Street have all increased the size of their governance teams over the past several years, and all report they will continue to do so.<sup>92</sup> Smaller funds have done the same.<sup>93</sup> There are at least two reasons why encouraging good governance is in their best interest. First, there is a market expectation that they will use their large voting blocks to improve governance. It is their responsibility as shareholders. As the University of

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<sup>90</sup> Krouse, Benoit & McGinty, *supra* note 12.

<sup>91</sup> Bebchuk & Hirst, *supra* note 22, at 13.

<sup>92</sup> Madison Marriage, *BlackRock, Vanguard and State Street bulk up governance staff*, Fin. Times, Jan. 28, 2017, <https://www.ft.com/content/657b243c-e492-11e6-9645-c9357a75844a>.

<sup>93</sup> *Id.*

Amsterdam study points out, “whereas in previous times the concentration of corporate control and the concomitant influence of large blockholders was seen as problematic, today the opposite is true: large blockholders are expected to vote because otherwise managers would be too powerful.”<sup>94</sup> Second, large asset managers often do not have the option to sell shares in a company. In the case of index funds, they are literally stuck with the shares. As Vanguard noted, “Because the funds’ holdings tend to be long term in nature (in the case of index funds, we’re essentially permanent shareholders), it’s crucial that we demand the highest standards of stewardship from the companies in which our funds invest.”<sup>95</sup>

This section points out that although asset managers may be among the largest shareholders of many companies, an observer (including a portfolio company) cannot determine what outcomes are in the best interest of the overall family of funds based simply on such ownership statistics. The question is significantly more complicated and depends not only on actively managed relative exposures, but the particular ownership structure and relative sensitivities the index fund business is exposed to. Aggregating this information might be impossible, even for the asset managers themselves. Thus, while the market today has “re-concentrated” ownership in the hands of large asset managers, it has also “re-dispersed” ownership via the underlying funds.

## **Section VII: Conclusion**

The Azar papers have spurred a conversation among lawyers and economists about the effects of large asset managers in equity markets. They have posited that stakes in competing

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<sup>94</sup> Fichtner, Heemskerk & Garcia-Bernardo, *supra* note 24, at 11.

<sup>95</sup> As quoted in Fichtner, Heemskerk & Garcia-Bernardo, *supra* note 24, at 11. See Vanguard, *Our engagement efforts and proxy voting: An update*, Jun. 30, 2016, available at <https://about.vanguard.com/vanguard-proxy-voting/update-on-voting/>.

companies may induce anti-competitive effects in downstream product markets. The authors suggest that since it is in asset managers' best interests, portfolio companies will, one way or another, placate these important shareholders.

As this paper has shown, however, asset managers are not typical investors. They are intermediaries attempting to maximize profit. Their revenue structure and competition landscape drive their incentives. To fully understand these incentives, one must look under the hood of these large institutions at the underlying businesses. It seems that for both actively managed funds and passively managed index funds, incentives to realize soft-competition in downstream markets is doubtful. Depending on the funds' asset allocations, such soft-competition could actually *worsen* a manager's position relative to peers. Moreover, large asset managers are not monolithic warehouses of capital with uniform interests. They comprise hundreds of underlying funds, each with its own strategy to attract AUM.

The theory presented by Azar *et al.* has important market implications and raises many worthy policy questions. Future research should investigate questions surrounding market structure, equity price discovery, agency costs between asset managers and shareholders, and competitive effects in downstream product markets, to name a few issues. But before we can wisely act, we must spend the time to thoroughly understand the incentives of large asset managers, risks they pose, and the value at stake.

## Appendix

Reproduced table from Rock and Rubinfeld (2017). Shows the percent ownership of the four airlines by the listed asset managers.

	<b>Delta</b>	<b>United</b>	<b>Southwest</b>	<b>JetBlue</b>
Bankmont	0	0	2.8	0
BlackRock	4.7	8.3	4.5	6.6
Capital	4.9	14	4.3	0
Deutsche Lufthansa	0	0	0	16.6
Dimensional	0	0	0	8
Donald Smith	0	0	2.2	10.4
Eagle Asset	0	0	0	3.2
Evercore	0	2.3	0	0
Fidelity	2.7	5.7	3	6.9
GMT	0	3.1	0	0
Janus	3.7	6.5	0	0
Lansdowne	4.1	0	0	0
Manning & Napier	0	0	2.8	0
Odey	1.6	0	0	0
Primecap	0	0	11.2	7.6
Scopia	0	0	0	3.9
State Street	0	0	3.7	0
T Rowe Price	0	13.9	5.3	0
Vanguard	5.2	4.8	6.2	4.9
Wayzata	4	0	0	0
Wellington	6.3	6.8	0	8.9
Winslow	1.6	0	0	0