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**IPO Underpricing in an Era of Asset Manager Capitalism: Theory, Evidence, and Policy**

**I. Scientific Background**

Over the past few decades, global stock markets have undergone significant transformations. Traditional retail investors have gradually ceded their positions as the main market players to large institutional investors (Çelik & Isaksson 2014, p. 54; Gilson & Gordon 2013, pp. 874–876), which now have substantial ownership in listed equities worldwide (Franks 2020, pp. 7–8). This shift toward intermediated markets has been particularly pronounced in the United States where institutional investors own approximately two-thirds of the capital market (Lund 2022, p. 93). In a further shift, the asset management industry has become highly concentrated (Ben-David et al. 2021), with just twenty-five institutional investors owning more than 30% of the US capital market (Kahan & Rock 2019, pp. 939–940). Collectively, the “Big Three” asset managers—BlackRock Group, Vanguard Group, and Fidelity Investments—boast assets under management (AUM) of $24 trillion. Together with the fourth largest asset manager, State Street Global Advisors, they control more than 20% of the voting power in S&P 500 companies, representing a concentration of corporate influence hitherto unheard of in American economic history (Coates 2023).

The paradigm shift to intermediated markets, in which powerful institutional investors wield enormous influence over capital markets and the companies participating in these markets, presents a myriad of economic, political, and social challenges (Azar, Tecu & Schmalz 2018; Bebchuk, Cohen & Hirst 2017; Brav, Malenko & Malenko 2023; Coates 2023). A rapidly growing body of theoretical and empirical literature has begun to identify these challenges, exploring how recent market changes entail significant anticompetitive risks in product markets (Azar, Tecu & Schmalz 2018; Elhauge 2016; Rock & Bluminfeld 2020), shortcomings in monitoring and stewardship (Bebchuk & Hirst 2019; Gilson & Gordon 2013; Lund 2018), inequality (Goshen & Levit 2022; Klein 2022), compliance failures (Chaim 2023a), market inefficiencies (Libson & Parchomovsky 2020) and sustainability problems (Christie 2021; Hannes, Libson & Parchomovsky 2023). However, the presence of giant institutional investors in twenty-first century capital markets may inhibit disruptive effects and market distortions in wider contexts that have not been identified, prompting the need for further research.

The proposed project responds to this imperative by exposing a critical yet overlooked arena in which concentration in the asset management industry and the rising dominance of giant institutional investors is manifesting additional deleterious consequences: capital markets, specifically in the context of initial public offerings (IPOs). Our hypothesis is that concentration in the asset management industry and the rise of financial behemoths that exert enormous influence over financial markets has empowered these entities with significant market power in the primary market. This market power can be strategically leveraged by giants such as the Big Three to depress stock prices in IPOs, holding important explanatory power for the documented surge in IPO underpricing.

IPO underpricing—measured as the difference between the offer price and the stock’s (higher) closing price on the first day of trading—has reached unprecedented levels in recent years. Over the past decade, it averaged nearly 25% (Ritter 2022, pp. 11–12), with enormous sums being “left on the table” by issuers, totaling over $90 billion (Ritter 2023, p .3). We intend to show, both theoretically and empirically, that the participation of the largest institutional investors—namely, the Big Three—in IPOs is linked to underpricing, and introduce a novel theory explaining this correlation.

IPO underpricing has long been a focus of academic and media attention, with an extensive body of research exploring its correlates (Aggarwal 2003; Aggarwal, Prabhala & Puri 2002; Colaco et al. 2009; Corwin & Schultz 2005; Grinblatt & Hwang 1989; Ibbotson & Jaffe 1975; Loughran & Ritter 2002; Ritter 1998; Rock 1986; Welch 1992; Welch 1989). Yet the majority of the existing literature has not fully grasped the primary drivers of underpricing (Katti & Phani 2016, p. 35). In fact, some of the leading theories explaining IPO underpricing have limited applicability given current market conditions, the regulatory environment, and the prevalence of the book-building method as the primary mechanism for selling IPOs in the United States. In the remainder of this section, we review some of the leading theories explaining IPO underpricing. The goal of our research is not to invalidate these theories but to examine their limitations and propose an additional potential explanation for this phenomenon. We posit that IPO underpricing is attributable to multiple factors, and we seek to introduce a novel cause that, to the best of our knowledge, has not been previously suggested in the literature.

1. Information asymmetry theories

Over the years, researchers have identified and modeled information asymmetry as a crucial factor in IPO underpricing (Baron 1982; Rock 1986; Welch 1992). These information asymmetry models—which were also extended to other financial market transactions such as equity crowdfunding (Ahlers et al. 2015) and the initial offering of digital coins (Ofir & Sadeh 2020)—view information asymmetry as a crucial market friction that hampers investors’ ability to estimate an asset’s true value. One of the prevailing theories in this area is Rock’s (1986) “winner’s curse” theory, namely that IPO underpricing occurs because the winning bidder in an IPO auction typically overestimates the stock’s value. To avoid overpaying, the winning bidder may demand a lower price, leading to underpricing.

However, Rock’s theory exhibits several limitations when applied to today’s capital markets. Notably, the theory is primarily relevant to situations with a strict pro-rata allocation and is irrelevant to the book-building method (Ljungqvist 2007, p. 389). Today, in the United States and an increasing number of other countries, underwriters bringing issues to the market usually follow a book-building approach (Jagannathan, Jirnyi & Sherman 2015, pp. 285–291; Jovanovic & Szentes 2007, p. 1; Katti & Phani 2016, p. 41; Sherman 2005, p. 615) designed to mitigate the magnitude of information asymmetry (Ljungqvist 2007, p. 391). Under this method, offer prices are conditioned on nonbinding pre-offer indications of interest, allowing prospective investors to place flexible bids within a predetermined price range (Katti & Phani 2016, p. 43). During this process, bidders indicate to the book-builder the number of shares that they are interested in and the corresponding price at which they are willing to purchase. These bids are recorded and then analyzed by the underwriter to arrive at the final offer price for the issued security.

The prevailing view in the literature is that book-building incentivizes investors to accurately report any information they hold, mitigating the winner’s curse effect (Benveniste & Spindt 1989, pp. 347–354; Benveniste & Wilhelm 1990, pp. 193–195). The incentive arises because using book-building, underwriters can allocate IPO shares in a discriminatory fashion by favoring investors who reveal positive information and bid aggressively, while allocating fewer (or no) shares to those who bid conservatively (Ljungqvist 2007, p. 390). Thus, the concern that informed investors would crowd out the uninformed in “good” offerings and withdraw from “bad” ones becomes less relevant when the book-building method is utilized.

1. Principal-agent theories

Researchers have also explored IPO underpricing through the lens of the agency relationship between issuers and underwriters. A widely accepted agency model in the IPO literature is predicated on the idea that underwriters abuse their discretionary powers in share allocation during IPOs by giving preferential treatment to certain bidders, particularly institutional investors with whom they have ongoing business relationships as buy-side investors, on a quid pro quo basis (Baron & Holmström, 1980; Loughran & Ritter 2004). Some scholars even argue that this behavior may indicate potential collusion between underwriters and informed investors to maximize profits at the expense of issuing firms and existing investors.

The empirical evidence supports the idea that underwriters’ rent-seeking behavior contributes to IPO underpricing (Griffin, Harris & Topaloglu 2007; Ljungqvist 2003; Ljungqvist & Wilhelm 2003; Loughran & Ritter 2004; Muscarella & Vetsuypens 1989; Ritter 1984). However, there has been very little research on the ways in which the growing domination of institutional investors, now accounting for approximately 90% of share allocation in IPOs (Fidelity, n. d.), affects the behavior of rent-seeking underwriters. Our proposed project intends to address this gap in the research.

1. Ownership and control theories

According to the IPO literature, underpricing may serve as a tool to mold a company’s shareholder base after an IPO. Two main hypotheses (which directly oppose each other) have been investigated: the “entrenchment of managerial control” hypothesis and the “limitation of private benefits” hypothesis.

The former, proposed by Brennan and Franks (1997), suggests that underpricing serves as a means whereby the managers of issuers can entrench managerial control by allocating shares in a way that avoids those large shareholders who are more likely to monitor management. This theory sheds light on the intricacies of IPO pricing and allocation mechanisms as well as the strategic decisions companies and underwriters make during the IPO process. Its core premise is that because underpricing leads to excess demand, owner-managers can allocate shares to investors so as to reduce the size of new shareholdings held by large investors who are more likely to scrutinize rent-seeking behavior (Shleifer & Vishny 1986). However, it is worth acknowledging that Brennan and Franks’ model only applies to IPO mechanisms involving fixed prices and pro-rata allocation. The argument does not apply to a book-building regime, since issuers can discriminate against conservative investors and omit them from allocations, without having to underprice the offering (Ljungqvist 2007, pp. 411–412). Moreover, the fact that underpricing occurs at particularly high levels despite the significant participation of institutional investors in public offerings suggests that factors beyond managerial control may be at play. Our theory aims to identify such factors by illuminating the link between institutional investors and IPO underpricing.

The “limitation of private benefits” hypothesis, on the other hand, suggests that owner-managers may try to limit their ability to obtain private benefits if agency costs cause IPO proceeds and share price to decline (Stoughton & Zechner 1998). By optimally rationing the allotment of shares to small investors, owner-managers can capture the benefits of better monitoring by institutional shareholders. However, because monitoring is difficult to observe, a free-rider problem exists and large monitoring shareholders would require compensation in the form of underpricing and favorable allocation treatment (Ljungqvist 2007, p. 411; Stoughton & Zechner 1998).

1. Behavioral theories

While most explanations for IPO underpricing are located within the rational actor framework, some scholars have explored this phenomenon from the perspective of irrational behavior, as has been done in other financial pricing contexts (Griffin 2010; Baker et al. 2012; Aran 2023). One prominent explanation within this domain is the information cascade model (Welch 1992). According to this model, investors make investment decisions sequentially: The bids of some investors are made only after observing the bids of earlier investors, disregarding their own information about the investment. This sequential decision making leads to an informational cascade, wherein early investors gain market power and can demand underpricing as a benefit for committing to the IPO and initiating a positive cascade (Ljungqvist 2007, p. 413). Recent research on institutional investors’ voting behavior provides empirical evidence for the underlying mechanisms behind these cascades, including information channels, peer effects, hedging, or a combination of these (Dressler 2020; Dressler & Mugerman 2023; Mugerman et al. 2014).

Our proposal takes the potential for informational cascade into account, maintaining that, due to their market position and reputation, market-leading institutional investors such as the Big Three can demand deeper underpricing in exchange for their participation and the informational cascade that it is likely to generate. In this context, it is noteworthy that while issuers and book-builders can theoretically maintain secrecy over book development (Katti & Phani 2016), the identities of other investors in the book are of particular interest to prospective institutional bidders, who often obtain such information from the book-builder (Financial Conduct Authority 2019, pp. 32, 40).

Our novel proposition fills a critical gap in current scholarly and regulatory approaches to underpricing. It positions the market power of large institutional investors as a key driver of IPO underpricing and considers how the distinctive features of the IPO pricing process, coupled with recent market shifts associated with concentration in the asset management industry and the emergence of behemoth asset managers, exacerbates IPO underpricing.

Giant asset managers such as the Big Three, repeat players in the IPO market, have gained significant power and influence in primary markets over the years. This power is attributed, among other factors, to their market status, significant order volume, and pricing role. We maintain that their unprecedented market power is used to gain leverage over issuers and underwriters during the book-building process, which is particularly susceptible to strategic behavior by institutional bidders. This, in turn, forces lower offer prices and exacerbates underpricing. Moreover, information sharing and communication among giant asset managers who are repeat players in the primary market and interact with each other in numerous offerings (Brown & Kovbasyuk 2016; Financial Conduct Authority, pp. 22–23) has become more common in recent years (Sharfman 2018, pp. 1–6; Chaim, forthcoming, pp. 11–14). In this context, we note recent statements by several asset managers that information sharing is “an accepted and essential aspect of the price formation process in IPOs and placings” and that bids they submit during price discovery relied on “the perceived level of interest from other investors that was obtained from conversations with other asset managers” (Kwan 2024, p. 5).

By sharing information related to an offering, such as price feedback, bidding intentions, or general impressions about the offering—an action that is not explicitly forbidden under US securities law—institutional investors can secure informational advantage over issuers and leverage their market power to force lower offer prices. If the investors sharing information account for a large share of total volumes, the effect of reductions in their bids is more significant (Financial Conduct Authority, p. 44).

These critical factors are likely to impact the efficiency and integrity of pricing and allocation mechanisms in the primary market. Yet they are virtually absent from the current theoretical and empirical literature on IPO underpricing. We intend to fill this gap and investigate these factors from both theoretical and empirical perspectives.

**II. Objectives and Expected Significance**

Objectives:

The proposed project will introduce a novel, market power–based explanation for IPO underpricing that takes into account shifts in the US capital market landscape, particularly the escalating market power of a few *giant institutional investors,* as an important driver of IPO underpricing. We aim to conduct theoretical and empirical analyses to reveal how the joint participation of dominant market actors in IPOs affects underpricing levels. We also intend to identify key junctures in the IPO process where strategic behavior by institutional investors is likely to occur, and to expose shortcomings in the current regulatory regime. Specifically, we will identify the susceptibility of the book-building process—originally designed to facilitate efficient price discovery by incorporating market information from sophisticated institutional investors—to the abuse of market power by powerful institutional investors.

This research will enable us to offer normative recommendations aimed at fostering a more transparent and competitive IPO process in an era of agency capitalism. By shedding light on the key role of institutional investors in underpricing, we further aim to draw attention to this overlooked, troubling consequence of the increasing concentration of power among a core group of giant institutional investors. The growing literature on institutional ownership focuses on the potential market distortions that ensue in the markets in which the portfolio companies held by large, diversified institutional investors compete (Azar, Tecu & Schmalz 2018; Azar, Marinescu & Steinbaum 2022). We advocate a shift in focus, redirecting attention to the *primary and secondary markets* where these investors directly compete with each other.

Significance:

Our proposed project will make significant contributions to legal scholarship. First, our theory aims to add an important piece to the IPO underpricing puzzle. Despite the plethora of studies examining this phenomenon, the persistence of IPO underpricing continues to challenge our understanding of market efficiency and the dynamics of capital formation (Katti & Phani 2016, p. 35; Ljungqvist & Wilhelm 2003, p. 723). Our analysis incorporates major capital market developments, most notably the increasing concentration in the asset management industry and the emergence of industry behemoths who are powerful repeat players in the primary market. By shifting the focus to the role of these actors, our theory offers explanatory power for the marked increase in IPO underpricing in recent years, which coincided with the rise of asset manager capitalism. This approach, therefore, addresses a significant gap in existing research, which has yet to fully account for the implications of these seismic shifts in the financial landscape.

Second, our theory underscores the importance of the institutional framework within which IPOs are conducted. We will demonstrate that the effect of this framework on the capital-raising process depends largely on the structure of capital markets. Specifically, we call into question the efficiency of the traditional book-building method in modern US capital markets. The book-building method was originally devised to facilitate price discovery in a cost-effective way, by enabling issuers and underwriters to incorporate market information from sophisticated institutional investors into the final offer price and aligning it more closely with the intrinsic value of the stock (Biais & Faugeron-Crouzet 2002). We expect to show that this process fails to serve its purpose when many of the key participants in the process are concentrated, interconnected institutional investors possessing market power over issuers and underwriters.

Third, the proposed project adds a significant dimension to the case law and literature analyzing the intersection between capital markets and competition law (Chaim 2023b; Piraino 2008; Rock 1992; Waller 2011). Our research aims to uncover a major peril associated with the growing power and concentration of institutional investors, complementing the existing literature exploring the market distortions and suboptimal economic outcomes caused by the concentration of power among a core group of giant institutional investors (Azar, Marinescu & Steinbaum 2022; Azar, Tecu & Schmalz 2018; Bebchuk, Brav, Malenko & Malenko 2023; Bebchuk & Hirst 2019; Chaim 2023a, 2023b; Christie 2021; Coates 2023; Cohen & Hirst 2017; Gilson & Gordon 2013; Goshen & Levit 2022; Schmalz 2018). While the growing literature in this field has primarily focused on the product and labor markets where the portfolio companies of these powerful market players compete, our work redirects attention toward markets where these investors compete directly. As we demonstrate, the primary market, where institutional investor compete on share allocation, is particularly susceptible to the exercise of market power by these institutions.

Finally, upon empirical validation of our proposed theory of IPO underpricing, we aim to formulate evidence-based policy recommendations. We will offer several policy proposals aimed at reshaping the landscape of primary market regulation and will propose a reform of the US book-building process to make it less susceptible to the potential abuse of market power by dominant institutional investors. In this context, we will propose a two-pronged approach: First, implementing market-structure changes to limit the size and associated market clout of asset managers; and, second, recalibrating the book-building method by enhancing transparency and imposing communication restrictions among prospective bidders during the pricing process.

Our theoretical predictions and empirical findings on underpricing in book-built IPOs are expected to bear on financial markets worldwide. In recent decades, sealed-bid IPO auctions have been abandoned in favor of book-building in many countries (Jagannathan & Sherman 2015, pp. 285–291; Jovanovic & Szentes 2007, p. 1; Kati & Phani 2016, p. 41; Sherman 2005, p. 615). Policymakers tend to focus on the advantages of registries but fail to explore their potential vulnerability to strategic behavior by giant institutional investors. Hence, our proposed project should serve as a clarion call to policymakers outside the United States, inspiring them to evaluate the utility of this method in their respective regions.

## III. Detailed Description of the Proposed Research

### A. Working Hypothesis

Our working hypothesis posits that large institutional investors utilize their market power to pressure issuers to sell shares in IPOs at a price lower than their intrinsic value, contributing to the unprecedented levels of IPO underpricing documented in the last two decades.

Our initial focus will be on BlackRock, Vanguard, and Fidelity, which are currently the three largest institutional investors in terms of AUM and equity under management (EUM) (Lund & Robertson 2023, pp. 2, 14). Furthermore, when considering their actively managed mutual funds, which bear greater relevance to the IPO market—index funds typically do not invest in IPOs, as new issuers are not automatically added to market indices—these three giants hold significant market share. Combined, they have approximately $18.5 trillion in actively managed mutual funds (Lund & Robertson 2023, p. 14).

We argue that the market power of these titans in the primary market manifests in two distinct forms, direct and indirect. The *direct* form stems from their sheer size in terms of AUM and their substantial order volume in IPOs. As our preliminary empirical data reveals, the Big Three participate in a significant number of offerings and are consistently prominent players in the primary market. Moreover, as of 2023, each of these institutions held equity positions in approximately 5,000 US companies, collectively controlling around 23% of the average S&P 500 company. As the literature suggests, institutional investors that place larger bids and are more frequent bidders are have a stronger effect on the final issue price (Cornelli & Goldreich 2003, p. 1423). This observation informs our focus on the Big Three.

The *indirect* market power of the Big Three is attributed to several factors. First, the influence giant institutional investors have on the behavior of other market players, which has been observed in the primary market (Financial Conduct Authority 2019) and in other contexts such as proxy contests (McHugh & Goldfarb 2024) and the adoption of investment guidelines (Eckstein 2023, pp. 962–975), is pronounced. In the IPO setting, these giants’ participation in IPOs sends a positive message to the markets, thus boosting the offering’s prospects. Specifically, when high-profile asset managers such as the Big Three allocate funds to an IPO, their involvement often serves as a de facto “seal of approval” for the issuing company, conveying a positive signal about its prospects. This creates a strong incentive for issuers to include these institutions in their shareholder base, granting these investors the ability to receive share allocation despite undervaluing the issuer. Second, as sophisticated, informed investors, institutional investors such as the Big Three provide feedback on the value of the issuer during roadshows and, more recently, during test-the-water (TTW) communications. The essential role that these institutions play as providers of valuation feedback grants them significant pricing power, which amplifies their ability to influence both the initial price range as well as the final offer price.

While each of the Big Three is a dominant player in the primary market and may strategically leverage its position to negotiate lower offer prices, when these competitors engage in various forms of convergent, parallel, or coordinated behavior, their market power can be wielded more effectively, leading to an even deeper underpricing. Indeed, evidence of signaling, direct communication, and even coordination among large institutional investors during IPOs, as detailed below, is available. In our research, we intend to pinpoint the mechanisms through which the Big Three may leverage their collective market power in public offerings to depress offer prices and benefit from increased underpricing.

*Signaling* can occur during the pricing process, and particularly in book-built offerings. Normal book-building processes allow some information flows between the book-builder and the investors. For example, investors may receive information on the development of the book from the book-builder, including the coverage of the book at different price ranges, as well as the level of interest from other institutional investors (Financial Conduct Authority 2019, pp. 40, 49). By signaling their bidding intentions, often through third-parties such as the book-builder or other market participants, these powerful institutional investors can align their bidding strategies to force lower offer prices.

As to *direct communication*, recent empirical evidence suggests that institutional investors do, indeed, engage in word-of-mouth communication and information sharing in both primary (Financial Conduct Authority 2019, pp. 68–79) and secondary (Chemmanur et al. 2022; Hong, Kubik & Stein 2005; Pool, Stoffman & Yonker 2015) markets. In the IPO context, such communication and information sharing regarding offerings, and particularly insights that can affect assessments of issuer value, can occur in formal settings such as roadshows and meetings with issuers and underwriters, where multiple institutional investors may be present. Informal discussions and exchanges of information can also happen in more casual settings, such as professional conferences or even social events. Since the underwriter relies on the bids made by institutional investors to gauge overall interest in the company, such information sharing may result in lower offer prices, undermining the credibility of the book-building process as a means of raising capital for companies (Financial Conduct Authority 2019, pp. 44–45).In this context, it is important to emphasize that such information sharing is not explicitly forbidden under US securities law and might even be encouraged as a tool to achieve greater price efficiency.

*Coordination* among institutional investors, which may be more suggestive of potential antitrust violations, has recently been observed in the context of corporate governance arrangements adopted by newly issued companies that institutional investors typically view as suboptimal, such as those with dual-class share structures. Evidence shows that not only do institutional investors such as the Big Three tend to hold similarly negative views on a variety of governance arrangements (Cook 2020), they typically factor these aspects into IPO pricing, potentially leading to reduced offer prices (Choi 2023). A notable illustration is the coalition against dual-class shares, a share capital structure that features two classes of stock with unequal voting rights. Over the last decade, a coalition of various institutional investors, including dominant investors such as the Big Three, has actively and openly campaigned to ban dual-class stock listings and exclude dual-class stock from leading market indices. Some large institutions have even made public statements against dual-class structures, in some instances specifying the discount rate they believe should apply to dual-class stock compared to single-class stock (Chaim, forthcoming, p. 37). It may therefore be the case that during price discovery, powerful institutional investors such as the Big Three could provide similar feedback to the issuer on the topic of any such arrangements it has in place. In other words, it is conceivable that they could all give the issuer a similar sense of the “penalty” they would impose (the discount they would expect) if any such governance arrangement were adopted. Curiously, recent scholarship finds that the level of IPO underpricing for multi-class stock is almost twice that of single-class companies’ stock (Tallarita 2018, p. 7), with multi-class issuers accounting for the vast majority of the most underpriced IPOs in history (Ritter 2022, p. 2).

In addition to the mechanisms mentioned above, we intend to identify additional ways in which the Big Three may be leveraging their collective market power in public offerings to depress offer prices and benefit from increased underpricing. This novel analysis of IPO underpricing through the lens of institutional-investor market power, which we intend to substantiate empirically, adds a crucial piece to the IPO underpricing puzzle and illuminates the marked correlation between rising underpricing levels and the ascendancy of asset manager capitalism.

### B. Research Design and Methods

There will be five phases in our research. The first and most important phase of our research is to examine the relationship between the joint participation of the three largest institutional investors (BlackRock, Vanguard, and Fidelity) in US IPOs and the degree of underpricing. A positive correlation between the joint participation of these three financial giants and underpricing will provide empirical support for the possible existence of collusion between these institutional investors, giving rise to a coalition of bidders in the primary market that depresses offering prices. Since the correlation in itself is not sufficient for inferring that collusion is taking place, we will explore other potential explanations for such correlation, and control for the independent variables that are key to alternative explanations, such as the market cap of the issuers and the sector in which it operates, as well as investor sentiment and the relationship between underwriters and certain institutional investors. This meticulous approach will ensure a comprehensive analysis that considers various factors influencing the observed correlation, allowing us to discern whether collusion is a primary driver of the underpricing phenomenon in US IPOs involving the identified institutional investors.

In the second phase, we aim to strengthen the identification of giant institutional investors as a casual factor in underpricing. This will be achieved by examining the period following the enactment of the Jumpstarting Our Business Sector Act (the “JOBS Act”) in 2012 until 2019. In this period, the JOBS Act has exclusively permitted so-called emerging growth companies (EGCs)—issuers which have an annual revenue of less than one billion dollars—to engage in TTW communicating with investors in connection to a contemplated IPO, before registering the IPO with the Securities and Exchange Commission (SEC). According to our theory, we would expect that the capacity of the Big Three to influence the perception of the issuer and the underwriter prior to setting the initial offer price range would exacerbate IPO underpricing. In 2019, this special treatment of EGCs was effectively abolished by permitting all companies to engage in TTW communication. We plan to collect data on all EGCs that engaged in TTW communication during the period 2012–2019 and employ a difference-in-difference regression to compare the underpricing of EGCs to that of non-EGC companies over that period. Any significant disparity in underpricing between these two categories of companies would strengthen the identification of giant institutional investors’ influence over pricing as a causal factor for underpricing.

In the third phase, we aim at further strengthening the identification of giant institutional investors as a casual factor for underpricing by conducting a longitudinal study exploring the relationship between the proportional size of institutional investors compared to the size of the market and the degree of underpricing. In addition, we will examine the relationship between the degree of market concentration in the asset management industry and the degree of underpricing. The longitudinal study will include the period from 1959 to 2023—a span of 65 years, the longest period for which such data is readily available. A positive correlation between the relative size of institutional investors in the market and the degree of concentration in the sector of institutional investors will reinforce our hypothesis that the clout of giant institutional investors is a casual factor for underpricing.

In the fourth phase, we will examine whether additional market actors also affect IPO underpricing. Although many scholars tend to focus on the power of giants like BlackRock, Vanguard, Fidelity, and State Street (Bebchuk & Hirst 2022; Fichtner, Heemskerk & Garcia-Bernardo 2017, pp. 288–299; Strine 2020), some have also looked into the market power of other dominant institutional investors. For instance, Kahan & Rock (2019, pp. 939–940) have emphasized the power of the twenty-five largest institutional investors, something we also intend to explore in the context of IPO underpricing. Moreover, because the size of the AUM is not necessarily the only factor reflecting the potential influence of various institutional investors on IPO underpricing, we intend to identify other characteristics. AUM invested in equities, the ratio of the institutional investors’ active and passive funds, the geographic concentration of these funds, and general investment strategies will also be considered. When considering these various characteristics, we may detect other potentially powerful institutional investors who may influence offer prices. For instance, based on Brown & Kovbaynuk (2016) and the attributes listed above, T. Rowe Price, J.P. Morgan Investment Management, Janus Capital, and PNC Bank could also potentially be part of a powerful coalition of bidders that induces underpricing. Many large pension funds, such as California Public Employees’ Retirement System (CalPERS), California State Teachers’ Retirement System (CalSTRS), and New York City Employees’ Retirement System (NYCERS), maintain close business relations with large mutual funds as sponsors, and we would also like to examine the possibility that these pension funds are capable of using their power and influence to depress IPO prices. Logistic regression will be used to determine whether the participation of these other “suspected” institutional investors together with the Big Three is correlated with deeper underpricing, while controlling for the factors we have noted in the first phase.

The fifth phase will involve a comparative analysis of IPO underpricing across several countries, emphasizing the impact of institutional frameworks on underpricing levels. As part of this analysis, we will focus on outlier countries with notably high and low levels of underpricing. Specifically, our study will look at four countries, two within Europe and two outside. In Europe, we will examine Greece, which has an exceptionally high average underpricing of 50.8% (Ritter 2023), and Austria, which displays a remarkably low underpricing of 5.2% (Ritter 2023). Outside Europe, our analysis will include the United Arab Emirates, exhibiting an average underpricing of 186.4% (Ritter 2023), and Canada, where the average underpricing is only 6.8% (Ritter 2023). Our primary focus will be on the bidding mechanisms employed. In particular, we will examine whether these countries utilize the book-building method or alternative approaches as well as the specific characteristics of the bidding process in each system. Additionally, we will consider structural differences in their capital markets, including size and concentration in the asset management industry. Our research will encompass countries that have transitioned from one bidding system to another, investigating how such shifts affect the magnitude of underpricing. For example, we will draw insights from the Israeli case, where recent regulatory changes enabling widespread book-building in IPOs has coincided with a marked increase in underpricing. This final phase will culminate in policy recommendations derived from the collective findings of all four research phases. These recommendations will highlight optimal regulatory settings that can effectively minimize underpricing while considering associated costs.

Our intention is to generate at least one academic paper in each phase. In fact, in the first two phases our goal is to produce three papers: two for an academic finance journal and one for a general law review. For the subsequent two phases, our primary aim is publication in legal journals, preferably peer-reviewed, although law reviews are also a viable option.

**C. Preliminary Results**

At the current stage of our research, we are in the process of conducting an in-depth analysis of the IPOs of US companies taking place between 2002 and 2022. We have accessed comprehensive data from the Thompson Financial Securities Database Corporation (SDC) and have cross-referenced it with the Audit Analytics Initial Public Offerings (Audit Analytics) databases available on Wharton Research Data Services (WRDS), to which we had partial access, to obtain the closing stock prices at the end of the first trading day on the stock exchange. We have also incorporated data on the stockholdings of individual institutional investors, extracted from 13F filings available through Thomson Reuters. Additionally, we have gathered various firm-specific characteristics and accounting data from Compustat. Our final dataset comprises a total of 2,692 IPOs, encompassing all instances where we successfully gathered data from all relevant sources.

Our decision to begin the sample period in 2002 is informed by several considerations. First, the last two decades, particularly the most recent one, have witnessed a significant uptick in institutional ownership of public equity (Bebchuk & Hirst, 2019, p. 5). This substantial increase in ownership by a few large institutional investors confers considerable influence and market power upon these investors within capital markets, potentially fostering a trend toward cartel-forming behavior. Second, our reliance on the Audit Analytics databases, which exclusively covers US-registered IPOs on major exchanges since 2000, mandates starting our sample period in 2002. It is worth noting that we deliberately exclude the dot-com bubble period characterized by exceptionally high first-day returns (Ljungqvist & Wilhelm, 2002) to ensure the robustness and relevance of our analysis, focusing on a period less susceptible to extraordinary market conditions.

In a comprehensive analysis of these IPOs, a significant trend is observed in the involvement of the Big Three institutional investors: BlackRock, Vanguard, and Fidelity. Over the examined period, these entities collectively participated in 614 transactions, accounting for 22.8% of all deals. This level of involvement underlines their substantial influence in the market.

However, the data reveals a more striking trend when analyzing IPOs with the *joint* presence of the Big Three. In such cases, the average underpricing escalates to 28.3%, indicating a possible influence of these major investors on IPO pricing strategies. Conversely, in situations where the Big Three are not collaboratively involved, the underpricing rate is notably lower, at 11.6%. The disparity in underpricing rates, based on the joint involvement of the Big Three, is not only substantial but also statistically significant. The gap of 16.7% in underpricing, conditional on the presence of the Big Three, is supported by a robust t-statistic of 10.82. This statistical significance underscores the profound impact these investors have on the market dynamics of IPOs.

This univariate analysis highlights the dominant role that major institutional investors may play in shaping IPO outcomes. Moreover, this pattern may raise questions about market efficiency and fairness, particularly for smaller investors. It also may suggest that the strategies and influence of such large entities need to be understood and monitored carefully by regulators and market participants alike to maintain a balanced IPO environment.

Formally, our primary regression specification for estimation can be represented as follows (Eq. 1):



In this model, the dependent variable IPO\_Under represents IPO underpricing, defined as ((price − ipo\_price) / ipo\_price) × 100, where “price” denotes the stock price at the close of the first public trading day on the stock exchange. To mitigate the effect of potential outliers, we employ winsorization on the raw IPO\_ Under data at the 1% and 99% levels. The key independent variable, BigThree, is a binary indicator that takes the value of 1 if all three major institutional investors (BlackRock, Vanguard, and Fidelity) participate in the IPO deal, as evidenced by their holdings in the company at the end of the quarter following the IPO; otherwise, it is set to 0. We also consider the cumulative percentage holdings of the Big Three as an alternative explanatory variable. The regression models incorporate SIZE as a control variable, representing the natural logarithm of the firm’s IPO market valuation in millions of US dollars, calculated as the product of the IPO price and outstanding shares. BR denotes the bookrunner fixed effects. All specifications include calendar-year () and industry () fixed effects, utilizing the Fama–French 12-industry classification. The error term, ε, is robustly clustered at the industry level to account for potential correlations within industries.

To examine the relationship further, our analysis employs ordinary least squares (OLS) regression (Eq. 1). The results are presented in Table 1. Columns 4 and 5 show findings from subsamples covering the periods 2002–2011 and 2012–2022, respectively. Columns 3 and 7 extend the analysis by incorporating bookrunner fixed effects into the regression model. These preliminary findings indicate that when all Big Three institutional investors participate in an IPO, underpricing experiences a significant increase of 13 percentage points. This result remains robust even after controlling for factors such as IPO size, identity of bookrunner, high institutional holdings, and concentration of institutional holdings, as well as accounting for year- and industry-fixed effects. The gap in underpricing diminishes to 9.65 percentage points when controlling for all the various factors mentioned above, but the result maintains high statistical significance below the 1% level. Our preliminary results maintain their robustness when subjected to separate analyses for distinct time intervals—specifically, 2002–2012 and 2012–2022. Importantly, our findings indicate a larger underpricing during the latter period, aligning with the hypothesis that suggests a link between IPO underpricing and the increasing dominance of institutional market power.

### D. Expected Pitfalls

Our proposed project faces several challenges. One of the main challenges is associated with obtaining information regarding the shares allotted to institutional investors at the IPO stage, given that such information is not publicly available. Our plan is to examine the 13F filings of institutional investment managers in the first quarter following the IPO. These documents include a mandatory reporting form in which institutional investors must disclose their equity holdings in all listed companies. The utilization of the information disclosed on 13F forms as a proxy for IPO allocation is a common practice in empirical studies on public offerings (Binay, Gatchev & Prinsky 2007; Brown & Kovbasyuk 2016; Reuter 2006). However, it may not necessarily reflect the allocation of shares in the IPO. Indeed, there are indications of a systematic gap between shares allocated to institutional investors in IPOs and their holdings a short time later (Field & Lowry 2009). Aggrawal (2003), for example, found that institutional investors flip 26% of their allocated shares on the first day of trading. Likewise, Chemmanur & Hu (2007) found heavy selling by institutional investors throughout the first month of trading. Brown & Kovbasyuk (2016, p. 4), on the other hand, found a high correlation (87%) between the disclosure of holdings on 13F forms and the actual allocation in IPOs. Therefore, they argue that post-IPO trading activity does not bias the measurement of IPO allocation through 13F disclosure.

Despite the limitations associated with using 13F filings, our methodology is more robust against bias due to the gap between IPO allocation and 13F holdings. This is largely because most studies that have found a systematic gap between the two indicate a one-directional gap: institutional investors tended to flip a large percentage of their initial allocation at the beginning of the trading in the market (Aggrawal 2003; Chemmanor & Hu 2007; Field & Lowry 2009). Thus, institutional investors may have held shares at the initial allocation stage that are not reflected in their holding disclosures in the first quarter. The opposite scenario is less probable (Chemmanor & Hu 2007). It should also be noted that the model in our study is based on a binary variable indicating whether all three major institutional investors held any shares at the time of the first quarterly disclosure after the IPO. As noted above, if, according to the first quarterly disclosure, an investor held shares, it most likely held these shares at the time of the IPO. The main reason we did not choose an alternative model, such as looking at the correlation between the aggregate size of the holdings of the giant institutional investors and underpricing, is the potential gap between shares held in the IPO and those disclosed in the first quarter after the IPO. The latter would have suffered a more significant systematic discrepancy between the size of holdings in the first quarter and the size of holdings in the IPO.

A potential pitfall of this research lies in the difficulty of pinpointing the causal mechanisms that link the collective market power of giant institutional investors to IPO underpricing. While we intend to demonstrate that the participation of these large asset managers has a substantial impact on IPO underpricing, the nuanced interactions and dynamic between institutional bidders, underwriters, and issuers during the book-building process pose a considerable challenge to investigation.

The opaque nature of the book-building process and the lack of available data on actual bids and allocations make it challenging to identify any strategic behavior by asset managers that may facilitate high levels of underpricing. While we have identified several indicators of information sharing, as well as coordination among institutional investors regarding issues related to the issuers which could impact pricing, we believe that additional data would be helpful in further elucidating these mechanisms.

To address this limitation, we plan to conduct off-the-record interviews with market participants, including underwriters, legal advisors, and relevant personnel at large money managers. Our hope is that these interviews will provide more insight into the linkages between asset managers and IPO underpricing. Additionally, we will seek to use the information gathered from these interviews to understand how the feedback received by giant asset managers prior to the formal book-building process impacts the preliminary price range set before the book-building initiates. We will also try to understand whether, and to what degree, the initial price range and final offer price are “sticky” or relatively resistant to change. In such a case, the effect of any strategic behavior by asset managers may be extended to earlier stages in the IPO process, beyond just the book-building phase.

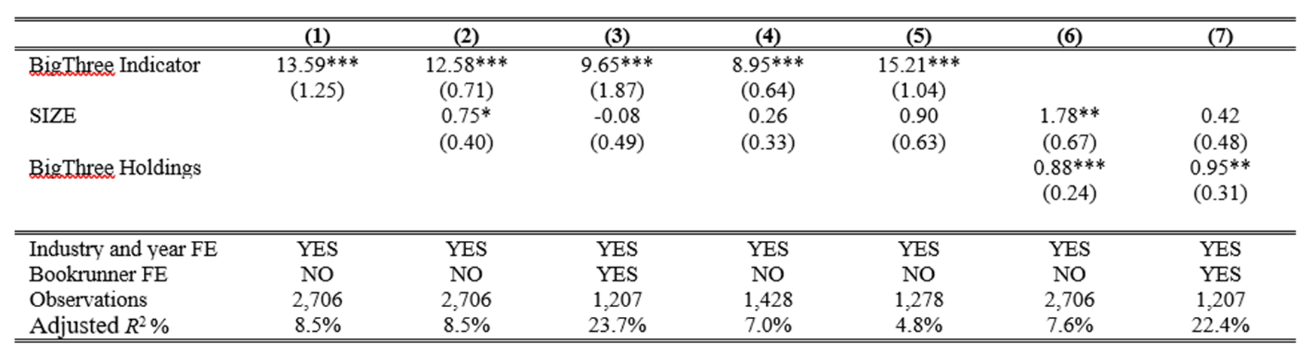
A third pitfall we intend to address is the possibility that there are additional powerful market actors that induce IPO underpricing. The fourth stage of our research is designed to mitigate this concern, but it is less robust than the first stage—we may miss some important institutional players who may also be involved in collusion. We believe that by examining the attributes of other institutions, mentioned above, in addition to the AUM test—such as EUM, the institutional investors’ ratio of passive to active funds, and geographic concentration, as well as the general correlation between the institutional investors’ participation in an IPO and underpricing—we reduce the likelihood of overlooking central players in the depression of IPO pricing. Informal interviews with central players in the primary market should also assist us in identifying potential coalition members.

**E. Suitability of the Researchers to Conduct the Study**

The proposed project requires deep familiarity with corporate finance, capital markets, and financial institutions. All three of us have taught, researched, and contributed to publications on these topics. We believe that our collective experience and previous research, coupled with the robust econometrical capabilities of one team member, positions us to add value to the existing scholarship on these topics by providing a distinctive and empirically validated exploration of the factors influencing IPO underpricing.

Adi Libson has researched and written extensively on market inefficiencies caused by institutional investors (Libson & Parchomovsky 2020; Hannes, Libson & Parchomovsky 2023). Danielle Chaim wrote her dissertation on the perils and pitfalls of institutional ownership and has recently published work on the compliance distortions associated with the horizontal ownership of large institutions in public companies (Chaim 2023a). Yevgeny Mugerman has contributed to the field as evidenced by several publications and current research projects. His collaborative work with Dressler & Mugerman (2023), Lauterbach & Mugerman (2020), and Lauterbach, Mugerman, & Shemesh (2023), delve into the pivotal influence of institutional investors within diverse contexts of corporate finance.

**F. Preliminary Regression Results**

**Table 1: Financial Giants and IPO Underpricing** presents the results of ordinary least squares (OLS) regression analyses conducted on IPO underpricing (IPO\_Under), defined as ((price − ipo\_price) / ipo\_price) × 100, where “price” means the closing stock price at the conclusion of the first public trading day on the stock exchange. To mitigate the effect of potential outliers, we employ winsorizing on the raw IPO underpricing data at the 1% and 99% levels. Our primary explanatory variable is “BigThree,” a binary indicator equal to 1 when all three major institutional investors are engaged in the IPO deal (holding shares in the company at the end of the quarter following the IPO) and 0 otherwise. Among our control variables, “SIZE” is the natural logarithm of the firm’s IPO market valuation, measured in USD millions and computed as the product of IPO price and number of outstanding shares. “BigThreeHoldings” is a dummy variable set to 1 if total institutional holdings in the company at the end of the quarter following the IPO are at least as large as median institutional holdings for all companies in our sample (24.88% or more) and 0 otherwise. All model specifications incorporate calendar year- and industry-fixed effects based on the Fama–French 12 industry classification. Columns 4 and 5 present results from subsamples, focusing on the years 2002–2011 and 2012–2022 respectively. Standard errors are robust and clustered at the industry level, with significance levels indicated by asterisks: \*, \*\*, and \*\*\* denote statistical significance at the 10%, 5%, and 1% levels, respectively.

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