Is SEC Registration Costly for Private Fund Advisers?*

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Abstract

Do private fund advisers bear the cost of complying with regulatory requirements? Although complying with regulations certainly consumes time and resources, advisers may be able to pass compliance costs on to their investors. Alternatively, submitting to government oversight may provide advisers with offsetting benefits. In this paper, I test whether private fund advisers bear higher compliance costs when they register with the SEC compared to when they claim an exemption by measuring their "bunching" beneath an assets under management threshold that triggers mandatory registration. I find that advisers bear a non-negligible share of registration costs, but the registration costs they bear are relatively low (approximately 1.2% of annual profits). I also find that registration is about twice as costly for private equity fund advisers as it is for hedge fund advisers. Finally, I show that the fraction of advisers who "bunch" to avoid registration has increased over time even though the cost to advisers of registering has stayed consistent.

Keywords: private equity; hedge funds; SEC regulation; compliance costs; investment advisers; bunching
JEL Codes: G20; G23; G28; K22

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1 Introduction

Despite their immense size and economic importance, private equity funds, hedge funds, and other private investment vehicles have been subject to meaningful regulatory oversight for only about a decade (SEC 2023). Each time the government has proposed additional regulations for private funds, debates about the proposed rules have focused on the anticipated costs (Berger 2022; Gordon 2004; Volpert 2011). For example, in comment letters to the Securities and Exchange Commission ("SEC") about the Dodd-Frank Act's implementing regulations—which set up a monitoring and reporting system for advisers to private funds—some advisers predicted that they would spend hundreds of thousands of dollars per year in compliance costs (SEC 2011c). The SEC, however, predicted that the cost would be far more modest (SEC 2011c). More recently, representatives of the National Association of Private Fund Managers ("NAPFM") and the Managed Funds Association ("MFA") commented that a set of rules proposed by the SEC in 2022 "would impose staggering aggregate costs and unprecedented operational and other practical challenges" (Han 2023). They also warned that the changes would "force[] out of the market" "smaller and even mid-sized advisers" (Han 2023).

Debates about the cost of private fund regulation often assume two things: (1) that private fund advisers will directly bear some (or perhaps all) of the cost of regulation and (2) that the benefits of regulation are relatively small or external to advisers, so regulation imposes a net cost on advisers. However, neither of these assumptions is obviously true. First, private fund advisers might be able to avoid bearing the cost of regulation by passing the cost along to their investors. They could do this by increasing their management or performance fees or by charging compliance expenses directly to their funds. There are some indications that this happens in practice. For instance, the SEC's 2022 proposed rules would have prohibited advisers from charging regulatory, compliance, and examination expenses directly to their funds, suggesting that some advisers had been doing this. Additionally, the NAPFM and MFA comments referenced above suggested that the SEC's proposed rules would "increase[] costs to investors" (Han 2023) despite the ban on advisers charging compliance costs to their private funds. This may be because the trade groups expected advisers to increase their management or performance fees to offset the increased compliance costs. On the other hand, a large law firm that advises private fund wrote in recent a client memo that "many Advisers did not charge these [regulatory, compliance, and examination] expenses to the private funds they advised" in years prior to 2023 (Thomas and Buren 2023).

Second, private fund advisers might internalize enough of the benefits of regulation to

offset the costs they do bear. For example, an adviser that submits to SEC oversight might be able to more credibly signal its quality (or lack of fraud) to investors, which might allow the adviser to raise capital from new pools of investors or raise capital at a lower cost. There is some anecdotal evidence that supports the idea that advisers view registration as beneficial on net. After a 2004 rule that required hedge funds to register with the SEC was struck down by a court, not all advisers deregistered. Even before the 2004 rule was finalized, attorneys for a leading New York law firm noted in a comment letter to the SEC that "[m]any of [their] private fund investment adviser clients ha[d] registered with the Commission for various reasons, including ... requests from institutional investors and perception of market desires" (Jordan et al. 2004).

To date, few academics have attempted to measure the regulatory costs borne by private fund advisers. A handful of studies have, however, analyzed other impacts of private fund regulation, including impacts on investors and focused mostly on hedge funds (Dimmock and Gerken 2016; Honigsberg 2019; Restrepo 2024). In a notable recent paper, Restrepo (2024) finds that net returns to investors decreased substantially ("approximately 4.5 percent of AUM per year") in hedge funds that were required to register with the SEC after the Dodd-Frank Act. Restrepo (2024) also finds that this decrease in returns was not accompanied by a significant decrease in return volatility. These results are consistent with hedge fund advisers passing a substantial portion of their compliance costs along to investors. The results also further raise the question of whether advisers experience a similar decrease in profits when they register.

Research on advisers' compliance costs has been hampered by the fact that it is very difficult to obtain data on private fund advisers' expenses. Advisers are not required to make their financial statements publicly available, and commercial databases that provide data on private equity and hedge funds do not include itemized expense information. An important pair of earlier studies estimated compliance costs using survey data (Kaal 2013, 2016), but these data came with their own set of challenges. The surveys suffered from low response rates (Kaal 2016), and cost estimates based on the survey data may have been badly biased.

In this paper, I test whether advisers bear a portion of the increased regulatory costs that come with SEC registration. In the post-Dodd-Frank regulatory environment, private fund advisers with $150 million or more in assets under management ("AUM") are required to register with the SEC. Smaller advisers are not required to register and, accordingly, have fewer regulatory obligations.[1] I take advantage of this arbitrary regulatory cutoff by using a "bunching" estimator to measure the extent to which private

[1] 17 C.F.R. §275.203(m)-1(a).

fund advisers manage their AUM to remain below the $150 million threshold and avoid mandatory registration. Because advisers' compensation is a function of their AUM, if advisers bear a significant portion of the cost of SEC registration, then advisers who are able to raise more than $150 million face a trade-off. They can choose to manage fewer assets and avoid the costs associated with SEC registration, but if they do so, they miss out on the revenue they could have generated by managing a larger pool of assets. On the other hand, if advisers can pass their increased regulatory costs on to their investors or if they obtain offsetting benefits from registering, then they have no incentive to manage their AUM to remain below the threshold. Thus, by the extent to which private fund advisers bunch beneath the $150 million threshold, I can test whether advisers expect to bear additional compliance costs when they register.

Another important feature of my empirical design is that it uses data from private fund advisers' regulatory filings to measure bunching. Relying on administrative data and observations about advisers' actual behavior allows me to avoid some of the weaknesses of survey-based estimates.

I begin by writing down a model to describe how private fund advisers choose their optimal size (in AUM) in the presence of a regulatory scheme where the compliance burden changes discreetly at an arbitrary AUM cutoff. The model is based on Alvero, Ando, and Xiao (2023)'s model for bank size in the presence of regulation with some minor adjustments to reflect the private fund setting. The model guides my estimation approach and implies an equation that can be used to estimate the change in advisers' compliance costs at the threshold based on the AUM of the "marginal adviser" (i.e., the adviser who is indifferent between bunching at the threshold and operating at their undistorted optimal size).

Turning to the data, I document evidence that private fund advisers are deliberately bunching at the $150 million AUM threshold. This bunching produces a clearly visible and statistically significant break in the distribution of advisers' AUM at $150 million. To bolster this visual evidence, I present quantile regression results showing that the distribution of year-over-year AUM growth rates for advisers with AUM just below the regulatory threshold is significantly different from the distribution of growth rates for other advisers in a way that is consistent with deliberate bunching. I also use an event study to show how advisers' AUM growth rates change around the year in which they first register with the SEC. The event study plot confirms that advisers' AUM growth increases sharply in the year they register but returns to a normal baseline immediately thereafter, suggesting that advisers' manage their AUM to avoid operating in a "dominated region" just above the regulatory threshold (Kleven 2016).

Next, using the "fuzzy" bunching estimator developed by Alvero and Xiao (2023), I estimate that private fund advisers with AUM near the $150 million threshold are willing to forgo up to $26 million in AUM to avoid registering with the SEC. This level of bunching implies that, on net, the registration costs borne by advisers are equivalent to 1.2% of these advisers' profits per year, on average. Assuming a traditional fee structure and gross-of-fees return, this is equivalent to 0.03 percent of AUM or approximately $45,000 per year.

I also examine whether net compliance costs vary across three dimensions: (1) by fund type, (2) by the state in which an adviser is located, and (3) over time. First, I estimate that the net registration costs borne by private equity fund advisers (around $57,000) are higher than those bore by hedge fund advisers (around $25,000). Second, I estimate costs borne by advisers do not vary depending on whether the adviser is based in New York (the state with the most private fund advisers), advisers based in other states with many private fund advisers, and advisers based in states with few private fund advisers. In theory, net registration costs could vary across states because advisers that are not registered with the SEC must register with their state securities authority, so the net cost of SEC registration depends on how onerous the alternative state registration scheme is. This result suggests, therefore, that private fund advisers are not choosing to operate out of New York or other popular states because they have unusually lax (or unusually strict) state regimes.

Third, I estimate that the level of costs borne by advisers has remained consistent over time, though advisers' bunching response has changed substantially. Specifically, I use a three-year, rolling estimation window to show how the marginal adviser's AUM and the fraction of advisers operating in the dominated region above the regulatory threshold have changed from 2012 to 2022. I find that the marginal adviser's AUM—and, therefore, borne registration costs—have remained constant since the Dodd-Frank Act's passage. In contrast, I find that the fraction of advisers operating in the dominated region has decreased dramatically over time, suggesting that bunching frictions have decreased or that advisers have taken time to adjust to the new regime.

Finally, I explore whether advisers' bunching behavior in a given year depends on whether they begin the year as a registered adviser or claiming an exemption. I do so by comparing the year-over-year AUM growth of Exempt Reporting Advisers ("ERAs") and Registered Investment Advisers ("RIAs") with similar AUM. I find that ERAs manage their AUM growth to avoid crossing the $150 million threshold and registering, but private fund RIAs do not, even when they have AUM less than $150 million and could claim the exemption. There are several possible explanations for this result. One is that

different advisers bear different amounts of the cost of registration, perhaps because some are able to pass costs on to investors but others are not. Another possibility is that some advisers are simply not attentive to the bunching incentives created by the $150 million cutoff. A final possibility is that registration requires a large up-front cost but minimal ongoing costs, so once an adviser has registered, it is not a burden to remain registered.

This paper contributes to two different streams of the literature. First, it contributes to the set of "retrospective studies" (Jackson and Rothstein 2019) that measure the ex post effects of private fund regulation . This paper does so by (1) assessing the magnitude of the net regulatory costs borne by advisers and (2) exploring cost heterogeneity. By studying compliance *costs*, my work complements work that highlights the potential *benefits* of regulation by identifying inefficiencies and bargaining problems in the private fund industry (Clayton 2020, 2022, 2023). My paper also complements prior work showing that regulation is costly to investors (Restrepo 2024) by showing that regulation is costly for advisers as well. Because my cost estimates are based on advisers' behavior rather their self-reported costs, I am able to avoid the biases that may affect the survey-based estimates (Kaal 2013, 2016). This paper also relates to recent empirical studies that have sought to measure the impact of regulation on return misreporting, fund flows, and return volatility (Dimmock and Gerken 2016; Honigsberg 2019; Restrepo 2024). These papers have said comparatively little about regulation's impact on fund advisers, and they have focused on hedge funds rather than private equity and other alternative fund types. This paper starts to fill in these gaps by focusing on advisers (rather than investors) and including data on private equity and alternative fund advisers as well as hedge fund advisers.

Second, this paper contributes to the literature on bunching estimators.[2] It joins a growing number of papers that use regulated parties' behavior around arbitrary regulatory cutoffs to estimate economically meaningful parameters (Chetty et al. 2011; Kleven and Waseem 2013; Saez 2010), including in the financial regulatory context (Alvero, Ando, and Xiao 2023; Dharmapala 2023; Ewens, Xiao, and Xu 2024).

Finally, my findings have important implications for the on-going debate about the appropriate level of private fund regulation. In 2023, the SEC adopted new private fund rules, which were subsequently challenged and struck down by a panel of judges on the 5th Circuit (Steingarten et al. 2024). One of the many arguments advanced by the challengers was that the SEC's economic analysis of the rules' impact was insufficient (Larkin et al. 2024).[3] The SEC has declined to seek an *en banc* rehearing or petition for certiorari at

[2]See Kleven (2016) for an overview of bunching estimation.

[3]This argument was not relied upon in the 5th Circuit decision invalidated the rules, however (Stein-

the Supreme Court to revive the 2023 rules (Jarvis 2024), but if the SEC decides to return to the drawing board and propose new or revised rules, questions about costs and benefits may resurface. This paper does not study the 2023 rules directly, but by examining how the SEC's previous rules have affected the private fund industry, it provides important context that may help the SEC perform cost-benefit analysis in future rulemakings. This is important because the SEC's rules are more vulnerable to being struck down in court when the SEC does not perform an adequate cost-benefit analysis.[4]

The rest of the paper is organized as follows. Section 2 provides an overview of the history of private fund regulation in the U.S., focusing particularly on the Dodd-Frank-era rules that are the basis for my analysis. Section 3 presents the economic model and briefly overviews the Alvero and Xiao (2023) fuzzy bunching estimation approach. Section 4 describes the data used in my estimation and introduces some basic descriptive facts. Section 5 presents preliminary evidence of advisers' bunching and presents and discusses the main results. Section 6 contains a brief conclusion.

2 Institutional Background

2.1 A Brief Note on Private Fund Structure

What people colloquially refer to as "private equity funds" and "hedge funds" are complex collections of related legal entities. To avoid confusion, I will explain briefly how I refer to the different entities throughout this paper and how they are treated for regulatory purposes.

The core of a private fund is the fund itself, which is often structured as a limited partnership. The limited partners ("LPs") of the fund are investors who are usually high net-worth individuals, university endowments, pension funds, or other institutional investors. The general partner ("GP") of the limited partnership, also referred to sometimes as the fund's "sponsor," is the firm that sets up and manages the fund. The sponsor, or GP, is paid a performance fee (usually 20% of gross returns) and a management fee (often around 1.5-–2% of assets under management) for its work managing the fund's investments. A single sponsor is often the general partner of multiple funds at once.

Private fund sponsors are covered by the Investment Advisers Act. They are therefore required to register with the SEC as investment advisers unless they can obtain an

garten et al. 2024).

[4]In the well-known case *Business Roundtable v. SEC*, 647 F.3d 1144 (D.C. Cir. 2011), the D.C. Circuit struck down an SEC rule as arbitrary and capricious because it concluded that the SEC had not adequately assessed the economic consequences of the rule.

exemption. For regulatory purposes, a sponsor's clients are the funds it manages, not the LPs investing in those funds. Additionally, a sponsor's total AUM is the sum of the value of the assets both held by and committed to each fund that the sponsor advises.

In some (perhaps most) cases, a sponsor will create multiple legal entities in connection with its private funds. For example, it may create an LLC for each fund to formally serve as the fund's general partner, and it may create a distinct LLC that houses the operating advisory business (Naidech 2023). In cases involving complex legal structures with multiple affiliated entities, the SEC takes a functional approach to regulation. For example, if a sponsor creates multiple affiliated advisory entities that operate in an integrated way, the SEC will treat the entities as one adviser for regulatory purposes (SEC 2011c).[5] The SEC does this to prevent advisers with more than $150 million in AUM from reorganizing as a bundle of smaller advisers that all claim the private fund exemption (SEC 2011c). Therefore, throughout the rest of this paper, I use the term "adviser" to refer to the collection of advisory entities set up by a sponsor and regulated as one unit by the SEC. "Adviser" does not refer to the funds themselves.

2.2 Early Attempts at Regulation

Historically, private funds and their advisers managed to stay mostly out of the SEC's sight by taking advantage of exemptions to the Investment Company Act of 1940 and the Advisers Act. The funds avoided being designated as an "investment company" by not offering their securities to the public and making sure that either (1) they had fewer than one hundred investors[6] or (2) their investors were all "qualified purchasers,"[7] a designation generally reserved for very high net worth individuals and institutional investors.[8] Their advisers, on the other hand, met the Adviser Act's definition of "investment adviser,"[9] so they were always subject to the Act's generally anti-fraud provisions.[10] However, they were able to avoid registering with the SEC under a "private adviser exemption," which exempted any adviser from registration who had fewer than fifteen clients

[5] In footnote 314, the SEC's rule release cites rule 208(d) of the Advisers Act, which states: "It shall be unlawful for any person indirectly, or through or by any other person, to do any act or thing which it would be unlawful for such person to do directly under the provisions of this subchapter or any rule or regulation thereunder." 15 U.S.C. §80b-8(d).

[6] 15 U.S.C. §80a-3(c)(1).

[7] 15 U.S.C. §80a-3(c)(7).

[8] "'Qualified purchaser' means— (i) any natural person ... who owns not less than $5,000,000 in investments ... (iv) any person, acting for its own account or the accounts of other qualified purchasers, who in the aggregate owns and invests on a discretionary basis, not less than $25,000,000 in investments." 15 U.S.C. §80a-2(a)(51)(A).

[9] 15 U.S.C. §80a-2(a)(11).

[10] 15 U.S.C. §80b-6.

(SEC 2011b). From at least 1985 onward, the SEC maintained the position that each private fund counted as one client.[11]

The SEC changed course, however, in 2004. Motivated by the spectacular collapse of the hedge fund Long-Term Capital Management in 1998 and reports showing hedge funds' increasing relevance in U.S. capital markets, the SEC proposed a rule to increase its oversight of hedge funds in particular.[12] The rule redefined "client" in the private adviser exemption to include investors in hedge funds, eliminating the exemption's availability for most hedge fund advisers.[13]

Hedge fund advisers opposed the proposed rule (Gordon 2004). They argued that the costs they would face by being forced to register would outweigh whatever benefits the SEC would gain from increased insight into their businesses. The SEC voted to approve the rule over these objections in December 2004, but the new rule was short-lived.[14] Less than two years later, in *Goldstein v. Securities and Exchange Commission*,[15] the D.C. Circuit struck down the registration rule as "arbitrary," and many of the advisers who had registered with the SEC quickly deregistered.[16]

2.3 The Dodd-Frank Act

The Need for Reform. Following the financial turmoil in 2007–08, there were renewed calls for the SEC to step up its oversight of private funds. These calls even found support among the larger private equity and hedge fund advisers. Hedge funds and private equity funds were not primary causes of the 2007–08 crisis, but lawmakers worried that they could be a source of future trouble as the private fund industry continued to grow. They worried that substantial losses in the industry might spread to the mainstream of the financial sector and set off further issues (Klein 2009). At that time, financial regulators knew shockingly little about the private fund industry. A Congressional Hearing in May 2009 made it clear that no one—not even industry participants—had more than a vague idea about how many hedge funds were operating in the U.S. or how many assets they controlled (Capuano 2009; Harris 2009). Industry representatives also expressed concern that the SEC staff did not understand the industry (Chanos 2009). Several years earlier, when the SEC was considering its first attempt to regulate private fund advisers, a law firm partner who frequently represented advisers wrote a comment letter describing in-

[11] *See* Goldstein v. Sec. & Exch. Comm'n, 451 F.3d 873, 880 (D.C. Cir. 2006).
[12] *See id.* at 877.
[13] *Id.*
[14] *See Goldstein*, 451 F.3d at 877.
[15] 451 F.3d 873 (D.C. Cir. 2006).
[16] Some of the largest hedge fund advisers remained registered, however (Baker 2009).

stances where his registered clients had to "spend significant amounts of time educating the [SEC's] staff about the basics of the hedge fund industry ..." (P. N. Roth 2004). The SEC apparently made some attempts to increase its staff's knowledge about the private fund industry after 2004 (Williams 2009), but industry participants were still frustrated in 2009, to the point that the Managed Funds Association arranged to meet with the SEC to help them improve their examination process (Baker 2009).

Congress agreed that oversight was needed and passed the Dodd-Frank Act in 2010. A lot of the debate surrounding post-crisis reforms had focused on whether and to what extent private funds could be a future source of systemic risk (Baker 2009; Loy 2009; Williams 2009). Lawmakers ultimately did not adopt substantive restrictions on leverage or risk-taking for private funds like they did for banks, but they concluded that the SEC needed to be able to monitor activity in the private fund sector to spot problems as they developed. The Act therefore increased SEC oversight of the private fund industry by requiring most private funds to register with the SEC.

The Post-Dodd-Frank Regime. The Dodd-Frank Act required most private fund advisers to register by repealing the private adviser exemption on which they used to rely. After the Act passed, the SEC issued implementing regulations that updated the regulatory requirements for registered investment advisers ("RIAs"). Among other things,[17] registered advisers after Dodd-Frank were required to

- Keep certain books and records,[18]
- Designate a chief compliance officer,[19]
- Adopt, implement, and annually review compliance policies and procedures,[20]
- Provide clients and prospective clients with a brochure meeting certain requirements,[21]
- Fill out Form PF and Form ADV (in full) annually,[22]
- Create and enforce a code of ethics meeting certain requirements,[23] and
- Keep advertising materials within certain parameters.[24]

[17] See Morgan, Lewis & Bockius LLP (2015) for a more thorough description of the consequences of registration.
[18] 17 C.F.R. §275.204-2
[19] 17 C.F.R. §275.206(4)-7(c)
[20] 17 C.F.R. §275.206(4)-7(a), (b)
[21] 17 C.F.R. §275.204-3
[22] 17 C.F.R. §275.204(b)-1
[23] 17 C.F.R. §275.204A-1
[24] 17 C.F.R. §275.206(4)-1

Private fund RIAs are also prohibited from charging performance fees (e.g., carried interest) in their advisory contracts unless all of the limited partners in their funds are sufficiently wealthy.[25]

As private fund advisers started to register, the SEC began incorporating them in its compliance examination program. The SEC could not examine all of the new advisers every year, so it complemented its examination program with regularly published "Risk Alerts" to "raise awareness of compliance issues observed by the staff" (SEC Office of Compliance Inspections and Examinations 2015).

In light of the SEC's resource constraints, the Dodd-Frank Act did not require *all* private fund advisers to register with the SEC, however. First, the Act reassigned the responsibility for overseeing "mid-sized advisers" from the SEC to the states (SEC 2011b). Mid-sized advisers were defined as all investment advisers—including, but not limited, to private fund advisers—with AUM between $25 million and $100 million (SEC 2011b).[26] The advisers now assigned to state supervision were not permitted to register with the SEC. This reassignment excluded two groups of advisers: (1) advisers who would otherwise "be required to register with 15 or more states" and (2) advisers who would not be required to register with a state securities authority or who, if registered, would not be "subject to examination" by their state authority.[27] When the Act was passed, mid-sized advisers with their "principal office and place of business" in New York, Minnesota, and Wyoming were not subject to state-level examination, so they were still required to register with the SEC, absent an exemption (SEC 2011b). Today, New York is the only remaining state that does not conduct state-level examinations of mid-sized advisers.[28]

Second, the Act directed the SEC to replace the repealed private adviser exemption with two much narrower ones: one for "venture capital fund advisers" (regardless of size) and another for "private fund advisers" with less than $150 million in AUM. These exemptions apply to advisers who would otherwise be required to register with the SEC (e.g., because their AUM exceeds $25 million or $100 million, depending on the state). Advisers who claim them are called "exempt reporting advisers" or "ERAs." ERAs are still subject to the Advisers Act's general anti-fraud provisions and owe fiduciary duties

[25] 15 U.S.C. §80b-5(a)(1); 17 C.F.R. §275.205-3. Under current rules, "Qualified Client[s]" must have a net worth of "more than $2,200,000" or "at least $1,100,000" being managed by the RIA (SEC 2021). "[A]dvisory contracts entered into when the adviser was not required to register and was not registered" are not covered by this rule. 17 C.F.R. §275.205-3(c)(2).

[26] States already had responsibility over investment advisers with AUM less than $25 million under the National Securities Markets Improvement Act of 1996. *See* 15 U.S.C. §80b-3a(a)(1).

[27] 15 U.S.C. §80b–3a(a)(2).

[28] See https://www.sec.gov/investment/divisions/investment/midsizedadviserinfo.htm.

to their clients. Exempt advisers are also required to fill out parts of Form ADV annually, providing the SEC with contact information and some basic details about their operations (Cadwalader, Wickersham & Taft LLP 2011). ERAs may be required to register with state securities authorities depending on the states' rules (SEC n.d.).[29] They are not, however, required to register with the SEC or submit to the full suite of requirements described above. Additionally, former SEC Chair Mary Shapiro advised early on that the SEC did not intend to perform regular examinations of exempt advisers, even though it had the authority to do so (Cadwalader, Wickersham & Taft LLP 2011). (Note that investment advisers who *register* with the SEC are *not* subject to state-level regulation other than general anti-fraud enforcement actions and "notice filing" requirements, though they may register with state authorities by choice.)[30]

The venture capital exemption is available to advisers that only advise "venture capital funds."[31] A venture capital fund is defined as "any private fund that:"[32]

1. "Represents to investors and potential investors that it pursues a venture capital strategy;"[33]

2. Invests at least 80 percent of its AUM in equity securities of "qualifying portfolio compan[ies]" or "short-term holdings" (e.g., cash, cash equivalents, short-term treasuries, money market fund shares);[34]

3. Limits borrowing to 15 percent or less of AUM "for non-renewable term[s] of no longer than 120 calendar days;"[35]

4. Does not allow limited partners to redeem or withdraw their investments ("except in extraorinary circumstances");[36] and

5. "Is not registered under section 8 of the Investment Company Act of 1940 ... and has not elected to be treated as a business development company pursuant to section 54 of that Act ...."[37]

[29] See, e.g., New York's Investment Adviser FAQs, which explain that ERAs are still required to register in New York unless they fall under a state exemption (https://ag.ny.gov/investment-advisers-faq).

[30] 15 U.S.C. §80b-3a(b)(1), (2). For more information, see the Form ADV General Instructions, especially instructions 10–15, found at https://www.sec.gov/about/forms/formadv-instructions.pdf.

[31] 15 U.S.C. §80b-3(l)(1).

[32] 17 C.F.R. §275.203(l)-1(a).

[33] 17 C.F.R. §275.203(l)-1(a)(1).

[34] 17 C.F.R. §275.203(l)-1(a)(2).

[35] 17 C.F.R. §275.203(l)-1(a)(3).

[36] 17 C.F.R. §275.203(l)-1(a)(4).

[37] 17 C.F.R. §275.203(l)-1(a)(5).

This exemption was drafted narrowly to prevent other advisers, such as buyout fund advisers or hedge fund advisers, from tweaking their operations to try to claim the exemption.

The private fund exemption is available to advisers that advise only private funds (defined based on sections 3(c)(1) and 3(c)(7) of the Investment Company Act, as described above) whose regulatory AUM is "less than $150,000,000."[38] For regulatory purposes, AUM is calculated pursuant to instructions found in Form ADV. Form ADV states that a private fund's AUM is calculated as "the current market value (or fair value) of the *private fund*'s assets" plus "the contractual amount of any uncalled [capital] commitment[s]."[39] Regulatory AUM must only be calculated once per year, and the valuation date must be within 90 days before Form ADV is filed with the SEC.[40] (Form ADV itself must be filed at least once per year, within 90 days after the end of the adviser's fiscal year.)[41] Practically, this means that an ERA can have greater than $150 million in AUM during a fiscal year without losing exempt status as long as its assets fall below $150 million when it comes time to file Form ADV.

In implementing Dodd-Frank, the SEC has also taken several steps to soften the abrupt regulatory transitions that happen at AUM thresholds like $100 and $150 million. For example, the SEC's rules state that a state-registered adviser (not based in New York) is *allowed* to register with the SEC as soon as it reports AUM greater than $100 million, but such an adviser is not *required* to register until its AUM exceeds $110 million.[42] Similarly, an SEC-registered adviser is not required to withdraw its registration until its AUM falls below $90 million.[43] In contrast, the $150 million limit on the private fund exemption is a hard limit, but the SEC gives ERAs that report AUM above the threshold (and that have otherwise complied with all ERA reporting requirements) a 90-day grace period to apply for SEC registration.[44]

Finally, the SEC's private fund rules require enhanced reporting requirements for "large hedge fund adviser[s]," "large liquidity fund adviser[s]," and "large private equity fund adviser[s]" on Form PF (CTFC and SEC 2011). The AUM thresholds where

[38] 15 U.S.C. §80b-3(m)(1).

[39] Form ADV: Instructions for Part 1A, 5(b)(4), https://www.sec.gov/about/forms/formadv-instructions.pdf.

[40] 17 C.F.R. §275.203(m)-1(c); Form ADV: Instructions for Part 1A, 5(b)(4), https://www.sec.gov/about/forms/formadv-instructions.pdf.

[41] Form ADV: General Instructions, 4, https://www.sec.gov/about/forms/formadv-instructions.pdf.

[42] 17 C.F.R. §275.203A-1(a)(1).

[43] 17 C.F.R. §275.203A-1(a)(1).

[44] Form ADV: General Instructions, 15, https://www.sec.gov/about/forms/formadv-instructions.pdf.

these requirements kick in are "$1.5 billion in hedge fund assets," "$1 billion in combined liquidity fund and registered money market fund assets," and "$2 billion in private equity fund assets" respectively (CTFC and SEC 2011). These requirements apply to a minority of advisers by number and are not the central focus of this paper.

Counting the Cost. While some larger fund advisers supported the idea that private fund advisers should register with the SEC, many of the smaller advisers were more skeptical. Their main argument was that the regulatory costs they would bear would outweigh any potential benefits. In comment letters to the SEC, these advisers identified several aspects of the new private fund regulations that they expected to be particularly burdensome. Several commenters focused on the SEC's new Form PF, which registered private fund advisers would be required to file at least annually. Commenters told the SEC that they expected the new form to be "extremely burdensome" (Cahill and Barker 2011; Medero 2011; Poglinco and Grover 2011). In its rule proposal for Form PF, the SEC itself estimated that filling out Form PF would require around 52 person-hours of work per "large private equity fund adviser" per year (SEC 2011a), a figure that one adviser found "alarming" (Morris 2011). The Managed Funds Association argued that the SEC was too low, estimating that the initial filing would require "150–300 hours" of work for "large managers" (Baker 2011). Industry participants expected the new Form PF to take so much time to complete, especially at the beginning, because many advisers did not have their "back office procedures" set up properly "in order to capture all of [the] information in the format required by Form PF" (Nash 2011). Some of these problems could be expected to work themselves out over time as advisers improved their systems, but even still, commenters like Joanne Medero at BlackRock found "the frequency of reporting and level of detail requested by the Form" to be "highly disproportionate to the benefit to be gained by the regulators" (Medero 2011).

In addition to the burden imposed by Form PF, smaller advisers commented that, for them, the costs of developing a compliance program would be substantial. These advisers explained that, because they were leanly staffed, they did not have people in house who could develop their compliance systems or serve as compliance officers (Katz 2011). They therefore anticipated having to rely on expensive outside consultants or hire additional personnel to come into compliance with the SEC's registration requirements (Katz 2011). These advisers anticipated spending an additional $50,000 to $500,000 on compliance costs (SEC 2011c), and one commenter lamented that they would have to "postpone hiring new employees who c[ould] help [them] grow [their] business" and "spend less time assisting [their] portfolio companies to grow," "wast[ing] [their] talent, skill[,] and resources" (Katz 2011).

2.4 Looking Ahead: 2023 Rule Adjustments

The SEC's regulatory regime for private fund advisers remained largely untouched until the SEC announced in February 2022 that it intended to revisit its rules in light of the experience it had accumulated over a decade of examining private fund advisers (SEC 2022). The SEC's announcement proposed a number of significant new disclosure obligations and bans on several practices that the SEC considered to be unfair to investors (SEC 2022). The announcement once again provoked opposition from the private fund industry (Berger 2022). It took more than a year for the SEC to finalize the rules (Thomas and Buren 2023), and the final version walked back several of the most controversial rules from the proposal (Calabrese et al. 2023; Kirkland & Ellis 2023; Thomas and Buren 2023). Even so, the final rules represented a substantial change in the regulatory requirements for both registered and unregistered advisers (Calabrese et al. 2023). For instance, the final rules would have required all advisers (registered or not) to disclose to investors when they charged "regulatory or compliance fees and expenses" to their funds, allocated certain fees and expenses across their funds on a non-pro rata basis, or gave preferential treatment to some of their investors (Calabrese et al. 2023). Registered advisers would additionally have been required to, among other things, (1) provide standardized quarterly statements to investors regarding performance, fees and expenses, (2) obtain "independent annual financial statement audit[s] of each of the private funds they advise," and (3) obtain an independent fairness or valuation opinion in connection with every adviser-led secondary transaction (Calabrese et al. 2023).

The new rules were ultimately vacated by a Fifth Circuit panel before they took effect (Steingarten et al. 2024), and the SEC declined to appeal the panel's ruling (Jarvis 2024). Nonetheless, the new rules have reignited old debates about the costs of regulating private funds and serve as a reminder that striking the right regulatory balance is still an ongoing challenge for the SEC.

3 Model and Estimation Strategy

3.1 Model of AUM Choice

In this section, I describe a model of how private fund advisers choose their optimal AUM in the presence of regulation. The model is a slightly modified version of Alvero, Ando, and Xiao (2023)'s model of bank size. Following Alvero, Ando, and Xiao (2023), I use the model to link the empirical distribution of private fund advisers' AUM to an estimate of the cost to advisers of registering with the SEC.

In the model, private fund advisers are indexed by a parameter z, which I refer to as an adviser's "skill." z represents all of the factors other than size that affect the fees an adviser can charge, including investing acumen, track record, relationships with institutional investors, and operational expertise. An adviser's size (defined as log AUM) is represented by the variable q.

For each dollar in assets an adviser manages, it charges a fee to its clients equal to $\Phi(q|z)$. $\Phi(q|z)$ is increasing in z ($\frac{\partial \Phi}{\partial z} > 0$) because there is greater demand for the services of skilled advisers (or advisers with better track records). Skilled advisers can therefore charge higher management and performance fees, holding fund size constant. Additionally, $\Phi(q|z)$ is decreasing in q ($\frac{\partial \Phi}{\partial q} < 0$) for at least two reasons. First, advisers' investment theses often do not scale with size. This means that most investment strategies become less lucrative when more money is allocated to them, so when advisers raise larger funds, they earn lower performance fees (as a percentage of AUM). Second, advisers sometimes offer contractual fee discounts (e.g., via side letters) to bring in assets from investors who would otherwise be unwilling to pay for the advisers' services. This is especially true for inexperienced GPs, GPs with poor past performance, and GPs with undersubscribed funds (Begenau and Siriwardane 2024). Finally, for each additional dollar in AUM, an adviser incurs an incremental operating cost equal to C.[45]

Private fund advisers seek to maximize profits, which are equal to $\pi(q|z) = [\Phi(q|z) - C] \cdot \exp(q)$ in the absence of regulation. $q_0(z)$ denotes the optimal, profit-maximizing size (in log AUM) for an adviser with productivity z.

Next, continuing to follow Alvero, Ando, and Xiao (2023), I introduce a regulation that imposes a fixed regulatory cost κ on all advisers with log AUM (q) greater than a certain threshold $\underline{q}$. If $\kappa > 0$, then for some advisers with $q_0(z)$ just greater than $\underline{q}$, it is now optimal to choose $q = \underline{q}$ to avoid the regulatory cost. On the other hand, the optimal size is unchanged for advisers whose $q_0(z)$ is below the threshold or far above it. If $\kappa \leq 0$, then advisers have no incentive to bunch beneath $\underline{q}$.

Note that the model does not assume that advisers must commit to operate at a certain size forever. z may change over time, and advisers are allowed to reconsider year to year whether to bunch below $\underline{q}$ or scale their operations up or down accordingly (Ewens, Xiao, and Xu 2024).

For $\kappa > 0$, some adviser with skill $\overline{z}$ will be indifferent between bunching beneath the threshold and choosing their undistorted, optimal size, which I denote $\overline{q}$. Between $\underline{q}$ and

[45] To keep the model simple, I assume that advisers do not benefit from economies of scale as they grow, or that $\frac{\partial C}{\partial q} = 0$. I could obtain the same with results with a somewhat more relaxed assumption, however. The key condition is that an adviser's net fee $R(q|z) - C$ decreases as q grows beyond a certain point. Without this condition, each adviser's optimal size would be infinitely large.

$\overline{q}$ is a "dominated region" in which no adviser would prefer to operate in the absence of frictions (Kleven 2016). I refer to the adviser with skill $\overline{z}$ as the "marginal adviser." The marginal adviser's profit is the same whether their AUM is $\overline{q}$ (and they bear the regulatory cost) or $\underline{q}$ (and they avoid it). The marginal adviser's indifference condition can be expressed as follows:

$$\pi(\underline{q}|\overline{z}) = \pi(\overline{q}|\overline{z}) - \kappa$$

$$\left[\Phi(\underline{q}|\overline{z}) - C\right] \cdot \exp(\underline{q}) = \left[\Phi(\overline{q}|\overline{z}) - C\right] \cdot \exp(\overline{q}) \cdot (1 - \tau) \tag{1}$$

The second expression uses the fact that κ can be expressed as a percentage of the marginal adviser's profits: $\kappa = [\Phi(\overline{q}|\overline{z}) - C] \cdot \exp(\overline{q}) \cdot \tau$. Solving this indifference condition for τ produces Equation 2 (first derived by Alvero, Ando, and Xiao (2023)), which can be used to back out the regulatory cost based on the log AUM of the marginal adviser:[46]

$$\tau \simeq 1 - \left(\overline{q} - \underline{q} + 1\right) \exp\left(\underline{q} - \overline{q}\right) \tag{2}$$

Here, τ can be interpreted as the additional regulatory cost borne by registering advisers expressed as a percentage of pre-regulatory annual profits. Note that τ represents the *net* cost of registering with the SEC or, more precisely, the compliance costs that are ultimately borne by the registering private equity and hedge fund sponsors and that are not offset by benefits flowing from registration (e.g., a lower cost of capital and avoiding costs associated with state-level registration). τ therefore does not capture record-keeping and reporting expenditures that advisers would make even if they were not registered, perhaps because investors or state regulators would demand them or because the SEC requires ERAs to make them. It also does not capture compliance-related costs that advisers are able to pass on to their investors by, for instance, charging them directly to their private funds. Thus if $\tau > 0$, we know that private fund advisers bear some fraction of registration costs and that these costs are not offset by benefits of registration. Relatedly, if $\tau \leq 0$, it may be the case that either (1) advisers are passing on their compliance costs or (2) advisers benefit substantially from registering (or a combination of both).

One caveat is that, to interpret τ as a measure of regulatory costs, I need to assume that advisers do not derive any benefits from avoiding SEC registration other than saving on compliance costs. This assumption would be violated if exempt advisers are able to discreetly (or perhaps fraudulently) funnel money out of their funds or portfolio companies in a way that registered advisers cannot. If this assumption is violated, then τ

[46] Alvero, Ando, and Xiao (2023) present a detailed derivation of this equation. I provide a sketch of the derivation in the Appendix to verify that my model maps to the same equation for identifying the regulatory cost.

overestimates regulatory costs.

I am willing to proceed under this "no extra benefits" assumption because it seems unlikely that small private fund advisers' ability to extract private benefits from their investors decreases significantly upon registration. First, problems in private fund contracting that Clayton (2020, 2022, 2023), Phalippou and G. Brown (2022), and others have identified apply with equal force to exempt and registered advisers, so it seems unlikely that investors of exempt advisers have systematically weaker contractual protections than investors of similarly sized registered advisers.

Second, even though the SEC spends fewer resources examining exempt advisers than registered ones, its resources are stretched thin enough that, in any given year, the probability that any small adviser (even a registered one) is examined by the SEC (let alone subject to an enforcement action) is quite small. In Fiscal Years 2019 through 2021, the SEC examined about 15% of registered investment advisers per year on average (SEC Division of Examinations 2022),[47] and the vast majority of these exams likely did not result in an enforcement referral. Although the information is a bit dated, an SEC report from Fiscal Year 2002 is suggestive: In that year, the SEC found deficiencies or weaknesses in 90% of investment adviser examinations but only issued an enforcement referral in 3% of examinations (SEC Office of Compliance Inspections and Examinations 2002).

Third, Honigsberg (2019) finds that there was a significant decline in return misreporting among exempt hedge funds following the passage of the Dodd-Frank Act and that this decline was "statistically equivalent" to the decline in misreporting among hedge funds that registered. Honigsberg (2019) also finds that exempt hedge funds "displayed similar patterns in auditor changes" as registered hedge funds. These findings tend to show that market forces put similar pressure on exempt and registered hedge funds to behave properly.

Fourth, and finally, even if exempt advisers were at first better able to exploit their investors than registered advisers, it seems likely that investors would recognize this over time and respond by withdrawing funds from exempt advisers, demanding that they register, or demanding lower fees. Investors' responses would then eliminate exempt advisers' private benefits over time. Recent empirical work lends some support to this hypothesis by showing that private fund LPs are able, at least in some cases, to detect dishonest reporting and that they punish GPs for misbehavior. G. W. Brown, Gredil, and Kaplan (2019) show that LPs appear to be able to sniff out inflated net asset values in GP

[47] In prior years, the SEC's coverage was sometimes higher and sometimes lower. For instance, in 2013, it examined only 9% of advisers, while it managed to examine 17% in 2018 (SEC Office of Compliance Inspections and Examinations 2019).

reports and that GPs who exaggerate net asset values are less likely to successfully raise follow-on funds. Jiang et al. (2023) show that GPs' ability to raise capital is negatively impacted when they report instances of misconduct on Form ADV, which exempt and registered advisers are both required to do.

3.2 "Fuzzy" Bunching Estimation

Overview. Over the past several years, researchers in public finance, labor economics, and finance have developed "bunching" estimators that allow researchers to use the behavior of regulated parties around arbitrary legal thresholds to estimate economic parameters (Chetty et al. 2011; Ewens, Xiao, and Xu 2024; Kleven and Waseem 2013; Saez 2010). Bunching estimators were first used in tax settings to estimate labor supply elasticities, but they have since been adapted for use in other settings where regulatory burdens change discreetly at arbitrary thresholds. In regulatory settings, bunching estimation typically proceeds in two steps (Ewens, Xiao, and Xu 2024). First, the researcher estimates the point at which regulated parties stop responding to the incentives created by the threshold. (This can be referred to as identifying the "marginal agent.") Second, the researcher then uses a model of economic behavior to translate this "indifference point" into a parameter of interest. This two-step approach matches up neatly with the model I describe in the previous section. If I can estimate the AUM of the marginal adviser (step one), I can then use Equation 2 to translate this indifference point into an estimate of the registration costs borne by private fund advisers.

Most bunching papers use "sharp" bunching estimators (Alvero and Xiao 2023) that work well in situations where regulated parties can precisely control the "forcing variable" that determines whether they are subject to regulation (Alvero and Xiao 2023). However, recent work has shown that the sharp bunching estimator struggles in situations where regulated parties have imprecise control over the forcing variable (Alvero and Xiao 2023). To accommodate these situations, Alvero and Xiao (2023) recently developed a "fuzzy" bunching estimator that can identify an indifference point even when the forcing variable is noisy.

The Alvero and Xiao (2023) fuzzy bunching estimator is well-suited to my setting because private fund advisers have imperfect control over their AUM. Advisers can choose whether to accept new investors into their funds and when and if to distribute funds to investors (subject to whatever limitations are set out in their partnership agreements). But their control is imprecise because a private fund's AUM fluctuates based on the market values of the fund's investments, which change constantly. This means that an adviser's

current AUM is a noisy approximation of the adviser's optimal size, and bunching patterns in the data are likely diffuse.

Implementation. Alvero and Xiao (2023)'s estimator uses features of the empirical cumulative distribution function (CDF) of the bunching variable (advisers' AUM) to estimate the length of the dominated region. Alvero and Xiao (2023) refer to the dominated region as the "bunching range," which is defined as $\Delta q \equiv \overline{q} - \underline{q}$. Equivalently, the marginal adviser's AUM—which is the key input in Equation 2—can be expressed as $\overline{q} = \Delta q + \underline{q}$. Alvero and Xiao (2023) propose the following formula to estimate the length of the bunching region:

$$\Delta q_{FB} \equiv \sqrt{\frac{2A}{\overline{f_0}}} \tag{3}$$

A is the area between the empirical AUM CDF and an estimated counterfactual CDF (i.e., without bunching). $\overline{f_0}$ is the average slope of the CDF "around the threshold" (Alvero and Xiao 2023).

Following Alvero and Xiao (2023), I implement the fuzzy bunching estimator in five steps:

1. I construct the empirical log AUM CDF around the $150 million threshold. I exclude adviser-year observations below $100 million so my estimation is not affected by regulatory changes at the $100 million threshold. I also exclude observations above $300 million so my estimation is not affected by features of the AUM distribution far from the $150 million threshold.

2. I construct a counterfactual CDF by fitting a smooth polynomial to evenly spaced points along the empirical CDF outside of an "excluded range" that contains the bunching distortion (Alvero and Xiao 2023). In my primary specification, I use a fourth-degree polynomial. Additionally, following Ewens, Xiao, and Xu (2024), I select the excluded region visually. (In the Appendix, I test the robustness of my estimates to different polynomial degrees and excluded regions.)

3. I estimate A by integrating the difference between the empirical and counterfactual CDFs over the excluded region.

4. I estimate $\overline{f_0}$ as the average density in the excluded region.[48]

5. I plug my estimates for A and $\overline{f_0}$ into Equation 3 to estimate Δq.

[48] Alvero and Xiao (2023) suggest this approach, and based on code provided in their replication package, Ewens, Xiao, and Xu (2024) use it. Another possible way to estimate $\overline{f_0}$ would be to evaluate the derivative of the counterfactual CDF at the regulatory threshold.

Once Δq has been estimated using Equation 3 (or Equation 4—see below), it can then be added to the regulatory threshold $\underline{q}$ to obtain an estimate for $\overline{q}$, the log AUM of the marginal adviser. This estimate for $\overline{q}$, in turn, can be plugged into Equation 2 to estimate τ, the cost to advisers of registering, expressed as a percentage of the marginal adviser's pre-regulatory profits. Finally, with some additional assumptions, τ can be used to estimate the registration costs borne by advisers as a percentage of AUM or as a dollar amount.

Adjusting for Frictions or Heterogeneous Benefits. Alvero and Xiao (2023) also propose an alternate formula to Equation 3 that accounts for the possibility that some agents are not responsive to the bunching incentives created by the regulatory threshold. In the private fund setting, advisers might not respond to bunching incentives because they perceive registration as beneficial ($\kappa \leq 0$ in the model) or due to frictions. Such frictions could include practical or market-based constraints on advisers' behavior or simple inattentiveness. For example, illiquidity may be a practical constraint on advisers' decisionmaking. An adviser whose funds are primarily invested in illiquid assets might prefer to sell some assets and bunch beneath the threshold. However, such an adviser might nonetheless decide not bunch or might wait to bunch to avoid having to sell illiquid assets at a steep discount. The possibility of market rumors might be another friction. A private fund adviser (particularly a hedge fund adviser) may be reluctant to return capital to investors or deregister to avoid setting off damaging rumors that the fund is struggling or winding down its operations.

Regarding benefits, there is anecdotal evidence that supports the idea that some advisers see registration as beneficial because their investors request (or perhaps demand) it. As mentioned previously, not all advisers deregistered after the SEC's 2004 hedge fund rule was struck down. Additionally, at least one comment letter on the 2004 rules noted that many private fund advisers had already registered for various reasons that included investor preferences (Jordan et al. 2004). Finally, as an additional data point, 39% of private fund advisers with AUM between $100 million and $150 million in my dataset were registered with the SEC in the years after Dodd-Frank's passage.

Because frictions could be substantial in the private fund context, I also use Alvero and Xiao (2023)'s friction-adjusted formula to estimate Δq. Therefore, my estimates of Δq and τ should be interpreted as reflections of the registration costs borne by the subset of advisers who are responsive to bunching incentives. The friction-adjusted formula is similar to Equation 3, but the denominator includes a new variable α, which represents

the fraction of agents who do not bunch due to frictions:

$$\Delta q_{FB} \equiv \sqrt{\frac{2A}{\overline{f_0} \cdot (1-\alpha)}} \tag{4}$$

α in turn can be estimated using the following equation (Alvero and Xiao 2023):

$$\alpha_{FB} = \frac{2 \cdot [F(\overline{q}) - F(\underline{q})]}{\overline{f_0} \cdot \Delta q} - 1 \tag{5}$$

Because Δq is used to solve for α and vice versa, Equations 4 and 5 must be solved jointly. Ewens, Xiao, and Xu (2024) use Equations 4 and 5 to estimate the cost of being a publicly traded company.

Conditions and Assumptions. The Alvero and Xiao (2023) estimator is most precise when the AUM CDF is roughly uniform throughout the bunching region and when the amount of noise is small. As the CDF becomes less uniform and the amount of noise increases, the estimator becomes less precise. Additionally, the estimator is only valid if three assumptions are met (Alvero and Xiao 2023). The first two assumptions are technical and deal with the smoothness of the counterfactual, non-bunching CDF and the smoothness of the noise distribution. It is reasonable to assume that both are met here. The third assumption is that the noise in the bunching CDF is independent of the bunching variable. This assumption may be violated if "agents make bunching decisions strategically after observing the realized measurement error and random shocks [noise]." In other words, I need to assume that advisers cannot tell at the time they decide which AUM level to target whether their future returns will be higher or lower than they would expect on average. This assumption is generally reasonable but could be fail if bunching advisers who unexpectedly earn outsized returns that tip them over the threshold can misreport their AUM to avoid registering. Because valuing illiquid, privately held assets is an inherently subjective process, I cannot rule out this possibility.

If advisers who should report AUM just above the threshold are misreporting to avoid registration, then my cost estimates likely overestimate compliance costs. The reason for this is that, all else equal, shifting advisers from above the threshold to below it increases the size of the bunching area. My cost estimate should therefore be interpreted as an upper bound on the true compliance cost borne by advisers. With this caveat, I proceed by assuming that the independence condition is met.

As a final note, if regulatory costs are not constant across advisers but rather vary with AUM, then the fuzzy bunching estimate of τ is only a valid estimate of net regula-

tory costs for advisers with AUM near $150 million. This is because the fuzzy bunching estimator relies on local behavior around that regulatory threshold.

4 Data and Descriptive Statistics

The data used for this paper come from data provided by both exempt and registered private fund advisers on Form ADV. The SEC requires all private fund advisers to file some basic information every year on Form ADV, including information about each fund adviser's total AUM, private fund AUM, types of private funds, and home state. It also includes some basic information about whether each adviser has been subject to civil, criminal, or regulatory sanctions within the past 10 years.

Data from Form ADV are freely available on the SEC's website.[49] For this paper, I use Form ADV data from Q1 2012 through Q4 2022 for registered and exempt investment advisers. I exclude data on private fund advisers "with a principal office and place of business outside of the United States" because they are subject to slightly different rules (SEC 2011c). I limit my sample to "pure play" private fund advisers, which I define as advisers whose assets are more than 90% invested in private funds. I do this to make sure I include only advisers who could realistically claim the private fund exemption by dropping their AUM below $150 million. I also exclude advisers who rely on the venture capital exemption because these advisers are exempt from the registration requirement regardless of their size and because they are not required to report as much information on Form ADV as other advisers. (For example, advisers who claim the venture capital exemption are not even required to report their total AUM.) In order to screen out some reporting errors, I also throw out the small number of filings where an adviser has reported private fund assets exceeding 120% of their reported regulatory AUM. Where a single adviser has filed Form ADV multiple times in a single calendar year (perhaps to correct an error or because its AUM crossed the $150,000,000 threshold), I use only the latest filing in the year. My data includes information from 7,100 different advisers, with 31,416 unique adviser-year data points.

Tables 1, 2, and 3 provide a snapshot of the private fund industry in 2022, the most recent year in my dataset. Table 1 lists the number of private fund advisers reporting to the SEC, broken out by fund type and registration status. I define advisers as "private equity" (or "hedge") fund advisers if more than 90% of their assets are allocated to private equity

[49] The data can be downloaded from https://www.sec.gov/foia/docs/form-adv-archive-data. I gratefully acknowledge Colleen Honigsberg's work in persuading the SEC to make Form ADV data freely available (Honigsberg 2019).

(or hedge) funds according to labels provided in the SEC's Form ADV data. I categorize all other advisers as "Other." This first table shows that, in 2022, 3,714 advisers to only private funds filed Form ADV with the SEC. There were about 1.7x as many registered private fund advisers reporting to the SEC as exempt ones. This gap was slightly smaller for hedge fund advisers than private equity fund or other advisers. Additionally, there was a roughly equal number of each type of advisers.

Table 2 provides a breakdown of 2022 private fund AUM using the same categories as Table 1. This table reveals the private fund industry's enormous size in recent years. The advisers in my sample managed $11.6 trillion in 2022, with $3.2 trillion allocated to private equity fund advisers and nearly $4.5 trillion managed by hedge fund advisers. This table also highlights the vastly disproportionate economic importance of registered advisers relative to exempt ones. Despite the fact that there were less than twice as many registered advisers as exempt ones, the registered advisers managed almost 150 times as many assets ($78 billion for the exempt advisers compared to $11.5 trillion for the registered advisers).

Finally, Table 3 lists the ten U.S. states with the largest number of private fund advisers. New York had the most advisers by far (1,102), with more than twice as many advisers as the next most popular state (California, which had 529). The amount of geographic concentration in the industry is striking: only seven states had more than 100 private fund advisers, and each of these states was home to more than $500 billion in private fund assets. By contrast, the eighth most popular state (Pennsylvania) was home to just $84 billion in private fund assets.

5 Main Results

5.1 Evidence of Bunching

In this section, I document evidence that advisers do in fact respond to the SEC's private fund regulations by "bunching" beneath the $150 million AUM cutoff as predicted by my model. Figure 1 plots the raw PDF of all log AUM-year observations from 2013 to 2022 where AUM was between about $100 million and about $900 million. I drop 2012 observations here and for the rest of my bunching analyses unless otherwise noted. I do this to account for the possibility that it took advisers some time to adjust to the new regime after Dodd-Frank passed. The $150 million threshold is marked with a gray vertical line. A cursory inspection of the PDF reveals what appears to be an abnormally large mass of advisers just beneath the threshold.

To test whether the mass beneath the threshold is, in fact, statistically significant, I use a distribution discontinuity test developed in the accounting literature.[50] The test was developed by Burgstahler and Dichev (1997) and subsequently updated by Beaver, McNichols, and Nelson (2007). The test is based on the idea that, if a distribution is sufficiently smooth and you bin observations drawn from the distribution, the number of observations in a given bin will be approximately equal to the average of the number of observations in the bins on either side. If the number of observations in the chosen bin is significantly different from the average of the surrounding bins, the hypothesis that the underlying distribution is smooth can be rejected.

I split the log AUM-year observations around the threshold into three bins (which are closed on the left): \$140–145 million, \$145–150 million, and \$150–155 million. These bins have 246, 316, and 121 observations respectively. I then test whether the number of observations in the \$145–150 million bin (246) is significantly different from the average number of observations in the other two ($\frac{(246+121)}{2} = 183.5$). The test statistic—known as the "standardized difference[]" in this context (Burgstahler and Dichev 1997)—is 5.996, which is significant at the 1% level. It is therefore highly improbable that we would observe the excess mass we do below the regulatory threshold purely as the result of chance.

When I conduct the same test using \$150–155 million (the area just above the threshold) as the center bin, I get similar results. The standardized difference is -5.590, again indicating a statistically significant discontinuity around the threshold, with lower than expected mass just above the threshold. On the other hand, when I conduct placebo tests using \$250 million as the test threshold, the standardized differences are only -0.908 and 0.442, both of which are statistically insignificant.

Next, I use quantile regression to test whether private fund advisers who start a given year with AUM just beneath the threshold (between \$100 and \$150 million) growth their AUM at different rates than other small private fund advisers with AUM between \$50 and \$400 million. Specifically I estimate the following regression model for quantiles ranging from 0.1 to 0.9:

$$AUMGrowth_{it} = \beta Below_{it} + \mu_t + \epsilon_{it}$$

The dependent variable is AUM growth for adviser i in year t. $Below_{it}$ is an indicator for whether adviser i had AUM just below the threshold at the beginning of year t, μ_t are year fixed effects, and ϵ_{it} is an error term.

Figure 2 plots the β coefficients by quantile. The Figure shows that the conditional growth distribution for advisers that start just below the threshold is the same as the

[50] In the Appendix, I include the results from a different distribution discontinuity test developed by McCrary (2008). The results are similar.

conditional growth distribution for other advisers in the same year below the median. However, above the median, the distributions diverge. The 50th to 70th percentile conditional growth rates are lower for funds who started just below the threshold, but the conditional growth rates above the 80th percentile appear to be much higher. This evidence lends support to the theory that the discontinuity in the distribution of advisers' AUM is not an aberration but is driven by deliberate bunching . More specifically, the evidence is consistent with advisers who start close to the threshold choosing to either (1) limit their growth to avoid tripping over the threshold or (2) bring in extra assets until they clear an "indifference point."

To lend additional support to this theory, I estimate an event study specification that examines changes in advisers' AUM growth when they switch from exempt reporting to registered status. Note that this specification does *not* have a "causal" interpretation. It cannot be interpreted as an estimate of the treatment effect of registration on adviser AUM because adviser's decide when to register and control their size. Instead, the results should be interpreted as suggestive evidence about how advisers manage their growth around the time they register. With these caveats, I use the following two-way fixed effect estimator:[51]

$$AUMGrowth_{it} = \gamma_i + \mu_t + \sum_{j=-9, j\neq -1}^{9} \mathbf{1}\{t - YearRegistered_i = j\} \cdot \delta_j + \epsilon_{it}$$

γ_i and μ_t are adviser and year fixed effects, and ϵ_{it} is an error term. $YearRegistered_{it}$ is the year in which adviser i first reports to the SEC as a registered adviser after having previously reporting as an exempt reporting adviser. For advisers that switch between registered and exempt status multiple times, $YearRegistered_{it}$ is the year of the first switch from exempt to registered status. For advisers that never change registration status during my sample period or that only switch from registered to exempt status, $\mathbf{1}\{t - YearRegistered_i = j\}$ is always equal to 0. In this regression, $AUMGrowth_{it}$ is winsorized at 1% and 99%. Winsorizing $AUMGrowth_{it}$ is helpful here because, otherwise, a small number of extreme growth rates muddy the estimates. These extreme growth rates are mostly caused by advisers who file an initial report with AUM at or near zero under the "120-day rule"[52] before filing subsequent reports with AUM in the hundreds of millions or billions of dollars.

[51] In the Appendix, I plot the results from estimating the same specification following the procedure recommended by Sun and Abraham (2021). The results are similar.

[52] The 120-day rule (17 C.F.R. §275.203A-2) allows advisers to register with the SEC who would otherwise be unable to register (e.g., because their AUM is too low) as long as they expect to be eligible to register within 120 days.

Figure 3 plots the δ_j coefficients. The Figure shows that AUM growth is relatively flat in the years before and after registration, but advisers experience substantially higher growth than normal during the year in which they register. The fact that advisers are on average able to raise their AUM substantially during the year in which they register suggests that they may have been consciously limiting their size in prior years. It is also consistent with the theory that advisers wait to register until they can profitably bring in enough assets to avoid operating in the dominated region about the $150 million threshold. At the very least, this evidence tends to show that registration decisions are generally planned rather than forced on advisers who unexpectedly cross the threshold.

5.2 Bunching Estimates

Pooled Estimate. Next, I use the fuzzy bunching estimator to estimate the marginal private fund adviser's AUM using data from all private fund advisers in my sample. The results are reported in Table 4, column (1) and depicted in Figures 4 and 5. Allowing for optimization frictions, I estimate the marginal adviser's AUM to be $176 million with a standard deviation of $4.11 million. This means that a private fund adviser who would prefer to manage $176 million in assets in the absence of regulation would be indifferent between (1) managing $176 million and registering with the SEC on the one hand and (2) giving up more than $26 million in assets to avoid registration on the other. Plugging this AUM estimate into Equation 2, I estimate the cost of registering with the SEC that is borne by private fund advisers to be 1.2% of the marginal adviser's profits with a standard deviation of 0.3%. I also estimate the fraction of non-bunching advisers to be 49% with a standard deviation of 6.0%. This indicates that private fund advisers face substantial optimization frictions or that many choose to register voluntarily due to perceived market pressure. (By way of comparison, 39% of advisers in my dataset with AUM between $100 million and $150 million are voluntarily registered.)

To translate the percentage estimate of registration costs into an approximate dollar amount, I multiply the percentage cost by an estimate of the marginal adviser's profits. Private fund advisers do not publicly report their financial statements, so I have to make some assumptions about advisers' average gross returns and cost structures to estimate profits. For simplicity, I assume that advisers operating at their undistorted optimal size charge management fees that are approximately equal to their operating costs, so their profits are approximately equal to their performance fees (or "carried interest"). I also assume that the marginal adviser charges a standard 20% performance fee and generates a high enough return to clear any "hurdle rate" required by investors (Ben-David, Birru,

and Rossi 2020). Finally, I assume that the marginal adviser generates on average a gross return on its assets of 11%. Estimates of private fund advisers' gross returns vary quite a bit, but this assumption is roughly in line with other estimates. For example, Ben-David, Birru, and Rossi (2020) estimate that, between 1995 and 2016, hedge fund advisers earn gross returns of 5.4% on average above 3-month LIBOR, which ranged from a high of nearly 7% in the early 2000s to a low of 20 to 30 basis points following the financial crisis (MarketWatch 2023). This range implies an average expected return for hedge funds of between 6 and 12%. Phalippou and Gottschalg (2009) estimate that gross returns for private equity funds exceed the return on the S&P 500 by 3% per year on average. According to data from Ken French's website, U.S. equities have returned around 11% per year on average over the past 30 years.[53] This implies a gross return for private equity advisers of around 14%.

Under these assumptions, I estimate that the net cost of SEC registration borne by private fund advisers is equivalent to around $45,000 per year on average, or about 0.03 percent of AUM.

Heterogeneity Across Fund Types. In columns (2) and (3) of Table 4, I use the same estimation techniques to test whether registration costs vary by fund type. In column (2), I report cost estimates for a sample that includes only dedicated private equity fund advisers, and in column (3), I report cost estimates for dedicated hedge fund advisers. The results in these two subsamples are similar to the results I obtain in the full sample, though the estimated cost borne by private equity fund advisers is quite a bit higher than the estimated cost borne by hedge fund advisers. I estimate the marginal private equity fund adviser's AUM to be $176 million and the marginal hedge fund adviser's AUM to be $170 million. This translates to a cost burden of 1.2% of profits for private equity fund advisers (or $57,000 using an estimated gross return of 14%) and 0.7% of profits for hedge fund advisers (or $25,000 using an estimated gross return of 10%). This difference in cost could be explained by the fact that private equity fund assets are typically more difficult (and therefore more expensive) to value than hedge fund assets, which are more likely to be traded securities with a readily ascertainable market value. Alternatively, it may be the case that compiling the other information necessary to fill out Forms ADV and PF is more difficult for private equity fund managers.

The non-bunching fraction estimates for each subsample are also similar to the full sample estimate. I estimate the non-bunching fraction in the private equity sample to be 37% with a standard deviation of 12% and the non-bunching fraction in the hedge fund

[53]The data are available at http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html.

sample to be 50% with a standard deviation of 13%. Overall, these results suggest that hedge fund advisers may face lower regulatory costs and higher barriers to bunching than private equity fund advisers do.[54]

Heterogeneity Across States. Next, I investigate whether registration costs vary by the state in which an adviser is headquartered. It is possible for the costs borne by advisers to vary across states because funds that claim an exemption for SEC registration may be required to register with their state instead. Thus, advisers in states with more robust registration requirements may bear a lower net cost of registering with the SEC than advisers in states with minimal requirements. Table 5 estimates the cost burden of SEC registration separately for three different state groups: (1) New York (which is home to the most private fund advisers and has a registration scheme that does not require examinations), (2) the next six states with the highest number of private fund advisers (California, Texas, Florida, Massachusetts, Connecticut, and Illinois), and (3) all other states. Table 5 shows that across these groups, the net cost of SEC registration is remarkably consistent, which is consistent with state-level registration requirements being comparably burdensome on average across these groups. This evidence may suggest that smaller private fund advisers are not choosing to headquarter in New York and other popular states primarily because they have lax state-level requirements.

Changes Over Time. Returning to the full sample, in Figures 6 and 7, I plot how the marginal adviser's AUM and the fraction of non-bunching advisers have changed over time. For these estimates, I add back in adviser-year observations from 2012, and I estimate the marginal adviser's AUM and fraction of non-bunching advisers for three-year rolling windows starting with [2012, 2014] and ending with [2020, 2022]. Figure 6 shows that the marginal adviser's AUM—and, therefore, the cost burden of registration—has remained remarkably stable over time at right around $175 million. Conversely, Figure 7 shows that the fraction of non-bunching advisers has fallen sharply from around 75% in the first few years to around 25% in recent years. This could suggest that advisers have become more attentive to bunching incentives over time as they have become accustomed to the new regulatory regime. Alternatively, Figure 7 may reflect the fact that frictions that prevented some advisers from bunching in the short run work themselves out or can be circumvented over a longer period.

[54] It might be easier for private equity advisers to bunch because their assets are harder to value. For instance, it may be easier for them to make sure they fall below the line by adjusting their valuation assumptions. If this is true, then my cost estimates for private equity advisers likely overstate the true net cost.

5.3 Bunching and Registration Status

If registration costs are borne more or less equally by all advisers, then both RIAs and ERAs with AUM close to the threshold should have the same incentives to bunch beneath it. However, as discussed previously, there are several reasons why some advisers might be less inclined to bunch than others and might therefore choose to register with the SEC regardless of their size. One possibility is that RIAs with AUM near the threshold are generally inattentive to the costs of registration. Another possibility is that the costs and benefits of registration are heterogeneous across advisers, and some advisers find registration beneficial (or, at least, not costly) and therefore do not have an incentive to bunch. A similar possibility is that some advisers are able to pass more costs on to their investors and therefore have no incentive to avoid registration. A fourth possibility, which I have not discussed, is that the registration costs borne by advisers are mostly front-loaded, so once an adviser has registered, the incentive to bunch disappears.

If any of these hypotheses is true, then I would expect to observe far more bunching behavior among previously registered advisers than previously exempt ones. To assess whether this is the case, I compare AUM growth for registered and exempt advisers with AUM beneath $150 million at the start of each year. I also look at AUM growth for advisers who begin the year with AUM just above the threshold.

I begin by calculating, for each adviser, the percent AUM growth that would land the adviser exactly on $150 million, and I subtract this growth rate from the adviser's actual growth rate during the year. This transformation has the effect of re-centering the growth rate distributions so advisers with adjusted growth rates below (above) zero end the year below (above) the threshold.[55] Then, I plot the PDF of adjusted growth rates for a window around 0, separating out advisers who began the year registered from those who began exempt.

Figures 8 and 9 display these plots for firms that begin the year with AUM between $50 and $150 million (Figure 8) and $150 and $250 million (Figure 9). Figure 8 shows that there is substantial bunching in returns for previously exempt advisers. However, this Figure shows no visible bunching for previously registered advisers. Figure 9 likewise shows no bunching for previously registered advisers.

These return patterns are consistent with the theory that the net costs to advisers of complying with the SEC's private fund rules are mainly (or perhaps entirely) front-loaded, and once an adviser has made the start-up investment necessary to come into

[55] One advantage of working with growth rates rather than AUM is that working with growth rates helps avoid some of the problems that crop up when the forcing variable is serially correlated and panel data is used for bunching estimation. See Marx (2024) for an overview of these issues.

compliance, ongoing costs are minimal. They are also consistent with the theory that advisers differ in the benefits they receive from registering or in their ability to pass registration costs on to their investors. If anything, the data may be more consistent with the first story (i.e., that costs are front-loaded), given that advisers who begin the year with AUM above the cutoff do not appear to bunch (and de-register) when they fall near it.

5.4 Discussion

Comparison to Other Cost Estimates. Interestingly, my primary estimate of registration costs borne by private fund advisers ($45,000 per year) is very similar to the estimated cost range provided by the SEC in its rule release. The SEC reported that it expected that "annual costs of compliance and examination would range from $10,000 to $50,000" and that other internal registration costs—including "costs attributable to completing and periodically amending Form ADV, preparing brochure supplements, and delivering codes of ethics to clients"—would be "$15,077 on average" (SEC 2011c). It also estimated that the "one-time costs to new registrants to establish a compliance infrastructure would range from $10,000 to $45,000" (SEC 2011c). In sum, the SEC ball-parked ongoing regulatory costs at $25,000 to $65,000 per year, with a somewhat higher figure in the first year of registration.

On the other hand, $45,000 is at the very bottom of the range of estimates offered by industry participants during the SEC's rulemaking process and in the survey results presented in Kaal (2013, 2016). For example, in a statement accompanying its final rule release, the SEC noted that many industry participants "suggested that [the SEC's] estimates [were] too low" and cited comment letters that predicted ongoing, annual costs of $350,000 (Atlas Holdings), $375,000 (Sentinel Capital Partners), $300,000 to 500,000 (Crestview Advisors, LLC), $50,000 to $100,000 (Azalea Capital), $150,000 to $250,000 (Gen Cap America, Inc.), and $100,000 to $200,000 ("certain private fund representatives" in a meeting discussing "costs for small firms ... (exclusive of salary costs for a CCO)") (SEC 2011c). Kaal (2016) reports that fewer than half of respondents (43%) thought their annual Dodd-Frank-related compliance costs were less than $100,000 in 2015, with the majority reporting costs ranging from $100,000 to "More than $400k." The highest possible response ("More than $400k") was selected by 15% of 2015 respondents.

The fact that my annualized estimate of registration costs *borne by advisers*—which relies on observations about advisers' behavior—lines up with the SEC's estimates and is lower than industry estimates of *total registration costs* is interesting and potentially informative. What we can learn from these relationships, however, depends on (1) the extent

to which advisers benefit from registering and (2) the extent to which advisers pass costs on to their investors. Given the results in Restrepo (2024) suggesting that registration substantially decreases investors' returns, it seems likely that advisers are passing a significant portion of the total cost of registration on to investors. If this is the case, then the high industry estimates of total costs may have more accurate than the SEC's estimates, and the SEC should consider revising its cost estimates upward in future rulemakings to respond to industry feedback.

On the other hand, if we instead assume that the benefits of regulation to advisers are low and that advisers do not generally pass on compliance costs to their investors, then the evidence might tell us something about industry participation in the regulatory process. For example, it may show how industry comments about projected compliance costs can be biased by selection effects[56] or by industry members' incentive to exaggerate to seek lighter regulation. Given the available evidence, this story seems less likely to be true. However, do to data limitations, Restrepo (2024) is unable to say definitively whether advisers are shifting compliance costs to their investors, so this is an open empirical question.

One way in which my analysis differs from both the SEC's and industry participants' is that it highlights how registration costs differ across advisers. Both the SEC and industry estimates generally fail to differentiate between different types of advisers. My results, on the other hand, show that private equity and hedge fund advisers differ significantly in both the registration costs they bear and in the degree to which they respond to bunching incentives. Additionally, my results suggest that registration costs may vary across advisers within these fund categories by pointing out that advisers do not exhibit bunching behavior once they have registered with the SEC, even if they are eligible for an exemption.

6 Conclusion

Debates about private fund regulation often focus on the magnitude of compliance costs. But an important question that is often unaddressed in these debates is whether private fund advisers actually bear the cost of increased regulation. Even if increased regulation is costly in the aggregate, it might not be burdensome to advisers if they are able to pass the cost on to their investors or if they obtain offsetting benefits from being regulated. In

[56]For example, if compliance costs are heterogeneous across advisers, advisers with higher anticipated costs may have been more likely to write comment letters to the SEC. Or compliance costs might increase with AUM, and the letter writers may have predominantly been larger advisers.

this paper, I test whether private fund advisers in fact bear substantial compliance costs under the SEC's current registration regime. Using a bunching estimation approach, I find that advisers' do bear some of the costs of registration and that the costs they bear are substantial enough to affect their behavior. However, my estimates also suggest that cost burden of registration to advisers is small as a fraction of advisers profits (1.2 percent) or AUM (0.3 percent). I also find that the compliance costs borne by funds vary significantly by fund type, with private equity fund advisers bearing higher costs than hedge fund advisers. In contrast, I show that net costs do not vary significantly by state, suggesting that advisers are not choosing to operate out of states with lighter regulatory regimes. Additionally, I show that compliance costs have remained consistent since the Dodd-Frank Act's passage and that the number of advisers with AUM in the strictly dominated region above the regulatory threshold has steadily decreased. This suggests that frictions preventing advisers from bunching have dissipated over time or that advisers have taken time to fully adjust to the new regime. As a final extension, I show that private advisers who are registered with the SEC do not exhibit bunching behavior, even when they are small enough to claim an exemption. Altogether, these results provide an important retrospective review of the Dodd-Frank-era rules' impact on the private fund industry that may help the SEC calibrate its regulatory approach going forward.

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Tables

Table 1: Number of Advisers by Type and Registration Status (2022)

Registration Status:	Exempt	Registered	Total
Fund Type:			
Hedge	552	795	1,347
Private Equity	434	824	1,258
Other	371	738	1,109
Total	1,357	2,357	3,714

Table 2: Assets Under Management ($m) by Type and Registration Status (2022)

Registration Status:	Exempt	Registered	Total
Fund Type:			
Hedge	29,348	4,463,862	4,493,211
Private Equity	27,086	3,215,278	3,242,364
Other	21,658	3,850,623	3,872,281
Total	78,092	11,529,763	11,607,855

Table 3: States With the Most Private Fund Advisers (2022)

	State	Number of Advisers	AUM ($m)
1	NY	1102	5,257,713
2	CA	529	1,427,206
3	TX	337	579,794
4	FL	257	639,548
5	CT	217	951,050
6	MA	202	1,029,002
7	IL	177	741,134
8	PA	88	84,471
9	NJ	87	81,250
10	CO	64	53,630

Table 4: Fuzzy Bunching Estimates

	All Private Funds (1)		Private Equity (2)		Hedge (3)	
			Panel A: Estimates			
Marginal Adviser ($m)	168.209	176.159	170.344	176.068	163.920	170.143
	(2.259)	(4.110)	(4.235)	(7.035)	(4.713)	(6.486)
Non-bunching Fraction	0	0.492	0	0.370	0	0.504
		(0.060)		(0.118)		(0.134)
Regulatory Cost (%)	0.608	1.162	0.743	1.155	0.371	0.730
	(0.135)	(0.320)	(0.261)	(0.537)	(0.191)	(0.355)
Regulatory Cost ($m)	0.023	0.045	0.035	0.057	0.012	0.025
			Panel B: Parameters			
Counterfactual Polynomial Degree	4	4	4	4	4	4
Expected Gross Return (%)	11	11	14	14	10	10
Performance Fee (%)	20	20	20	20	20	20
			Panel C: Samples			
Number of Observations	6,115	6,115	1,971	1,971	2,754	2,754
Sample Range ($m)	100–300	100–300	100–300	100–300	100–300	100–300
Years	2013–22	2013–22	2013–22	2013–22	2013–22	2013–22

Notes: Bootstrap standard errors using 1,000 resamples are reported in parentheses. Estimates that allow for optimization frictions were solved using an iterative process. The excluded range in log AUM is (18.7, 19.1) for each estimation. I also restrict α to the range [0, 0.8] to prevent extreme solutions.

Table 5: Regulatory Costs by State

	NY Only	CA, TX, FL, MA, CT, IL	The Rest
	(1)	(2)	(3)
		Panel A: Estimates	
Marginal Adviser ($m)	174.743	176.976	175.894
	(9.210)	(5.212)	(8.846)
Non-bunching Fraction	0.526	0.507	0.398
	(0.156)	(0.079)	(0.144)
Regulatory Cost (%)	1.053	1.226	1.141
	(0.658)	(0.393)	(0.658)
Regulatory Cost ($m)	0.040	0.048	0.044
		Panel B: Parameters	
Counterfactual Polynomial Degree	4	4	4
Expected Gross Return (%)	11	11	11
Performance Fee (%)	20	20	20
		Panel C: Samples	
Number of Observations	1,912	2,860	1,343
Sample Range ($m)	100–300	100–300	100–300
Years	2013–22	2013–22	2013–22

Notes: Bootstrap standard errors using 1,000 resamples are reported in parentheses. Estimates that allow for optimization frictions were solved using an iterative process. The excluded range in log AUM is (18.7, 19.1) for each estimation. I also restrict α to the range [0, 0.8] to prevent extreme solutions.

Figures

Figure 1: log AUM PDF

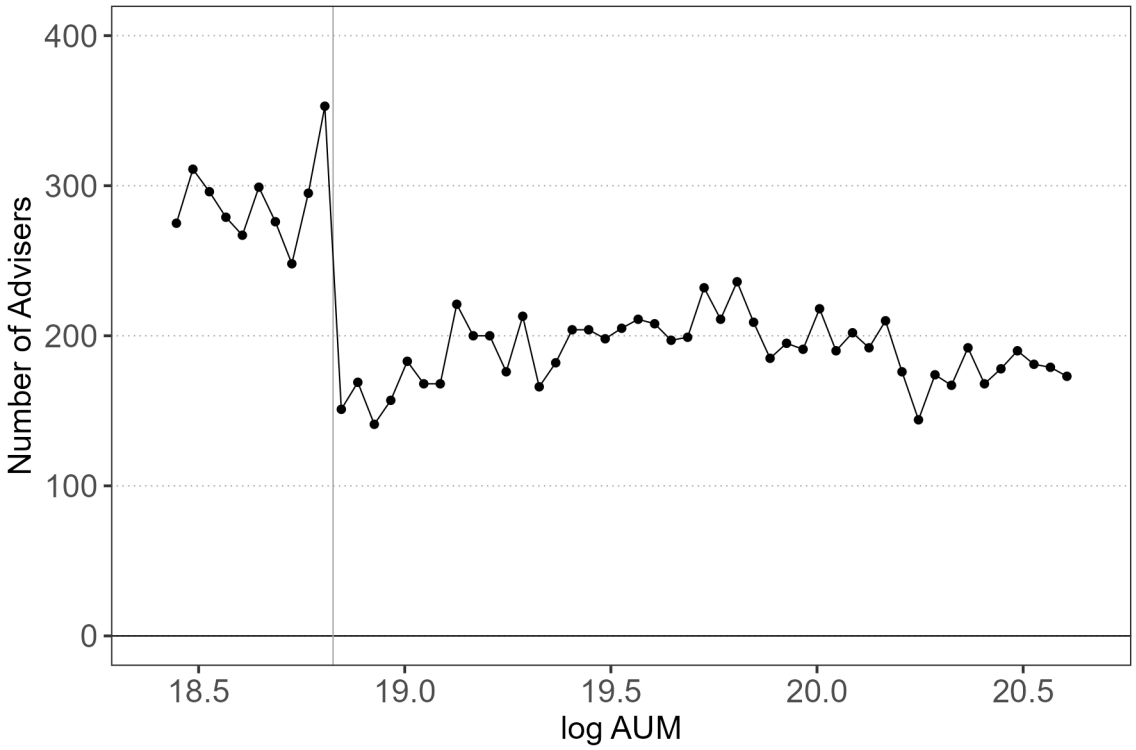


Figure 2: Quantile Regression Coefficients

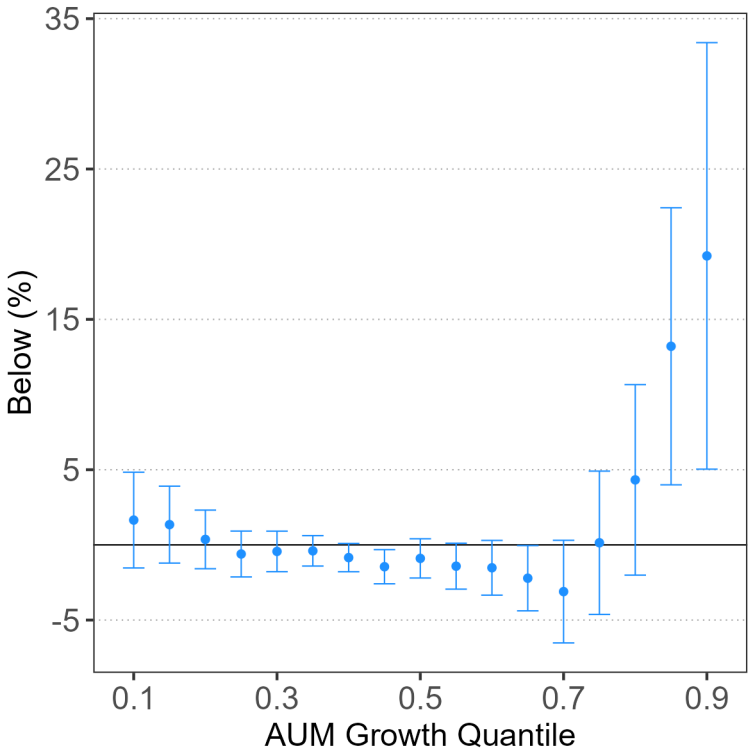


Figure 3: AUM Growth Event Study

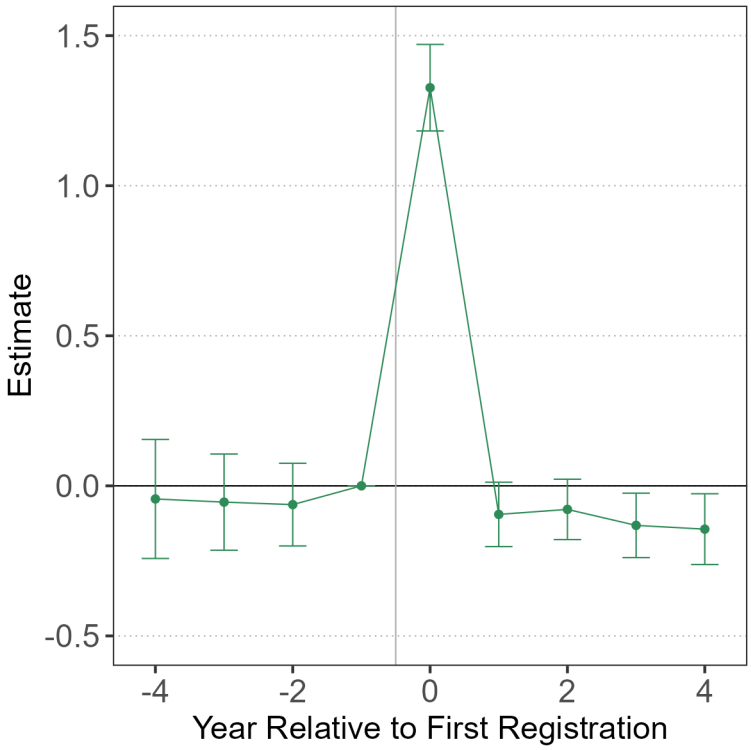


Figure 4: log AUM CDF with Counterfactual

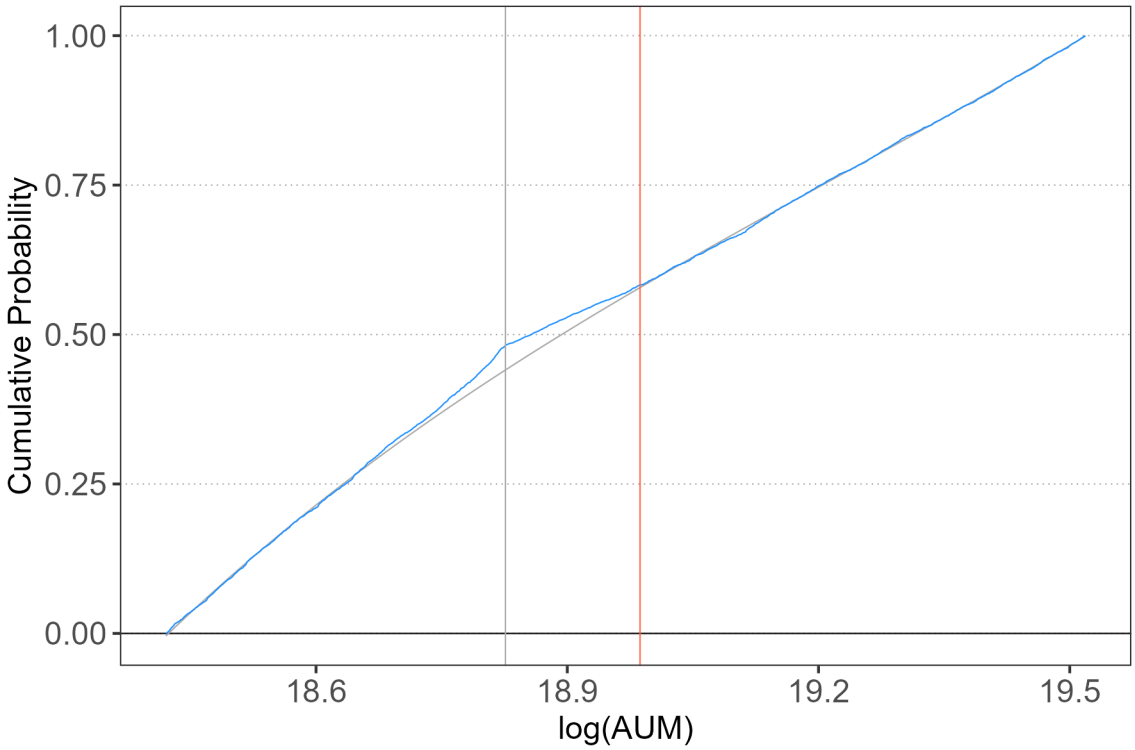


Figure 5: log AUM PDF with Counterfactual

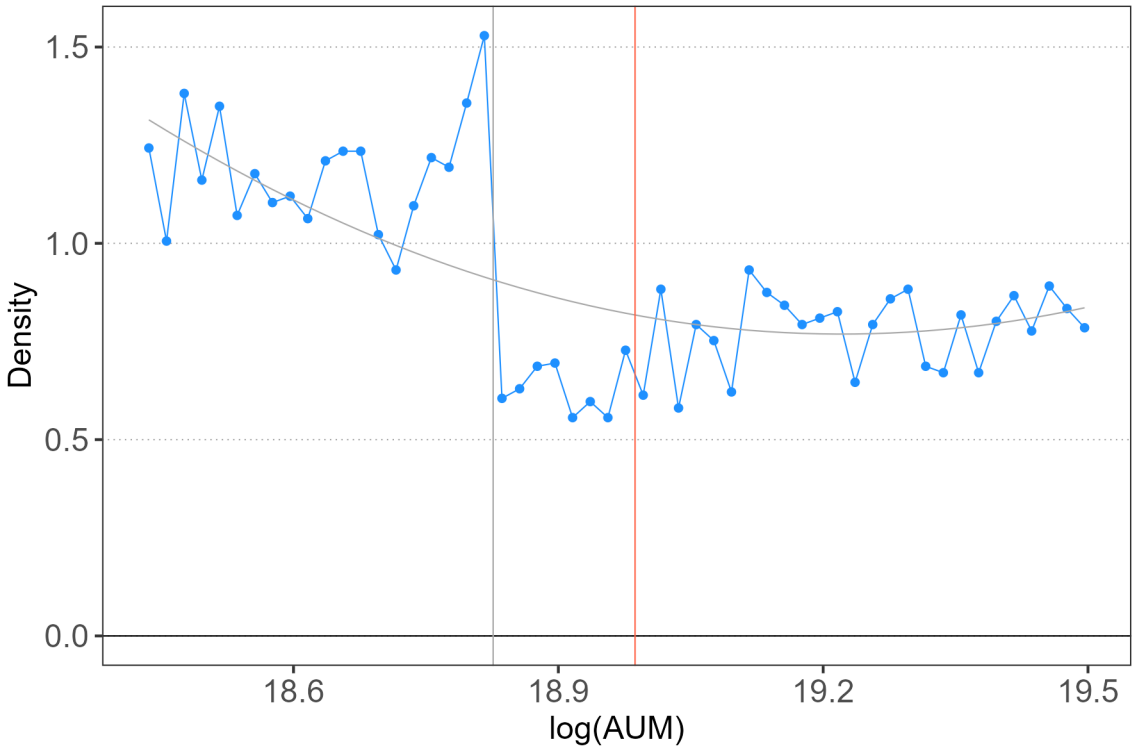
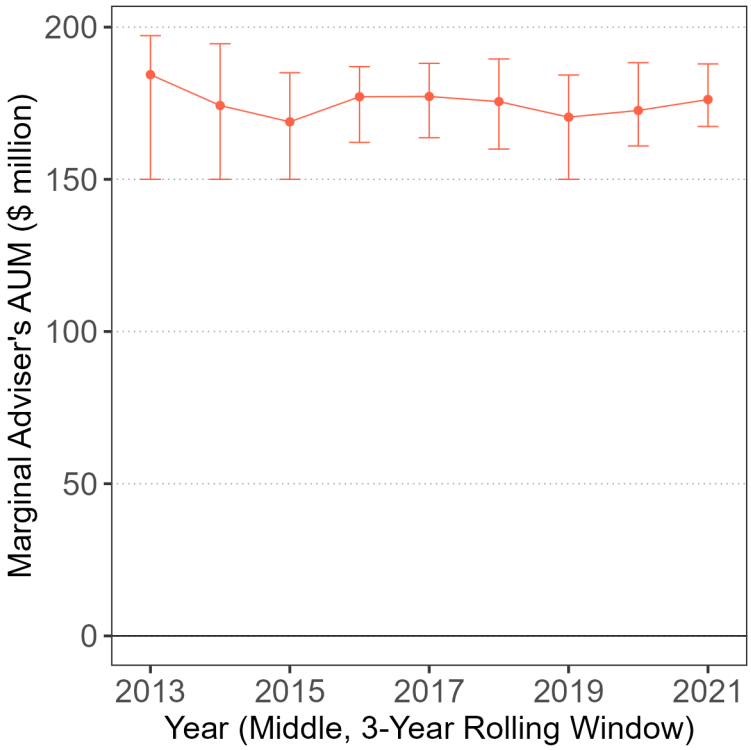
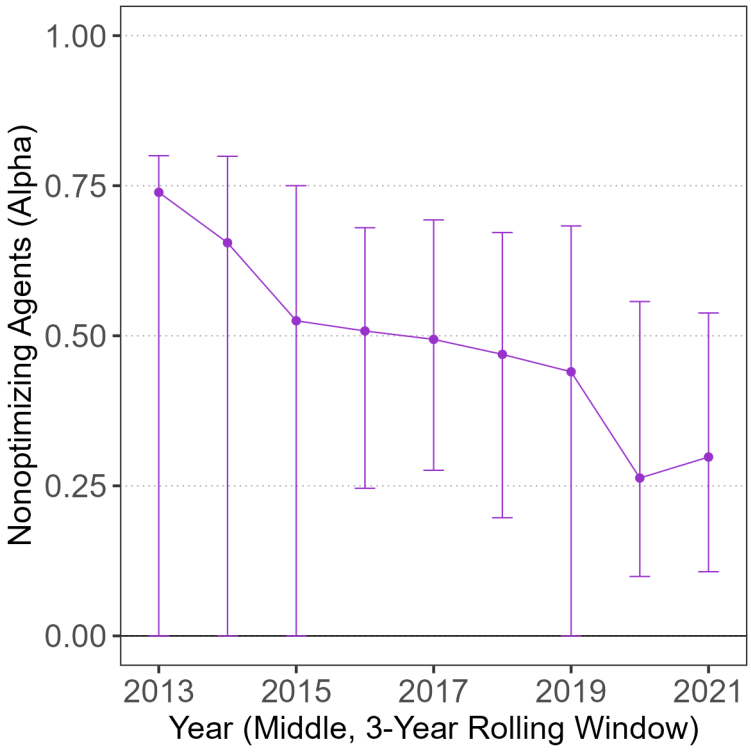


Figure 6: Marginal Adviser's AUM Over Time



Notes: The error bars plot confidence intervals constructed using the 0.025 and 0.975 quantiles of the distribution of bootstrap $\bar{q}$ estimates. I construct these confidence intervals using 1,000 resamples. The excluded range in log AUM is (18.7, 19.1) for each estimation. I also restrict α to the range [0, 0.8] to prevent extreme solutions. This restriction is binding on some of the bootstrap estimates in the first two years, so the upper limits of the confidence intervals are compressed. Additionally, the estimator returns the value \$150 million if the integration used to calculate A returns a negative value or does not converge. The lower limit is \$150 million in four of the windows, suggesting that the integration did not converge to a positive estimated bunching mass in a substantial number of resamples.

Figure 7: Fraction of Non-optimizing Agents Over Time



Notes: The error bars plot confidence intervals constructed using the 0.025 and 0.975 quantiles of the distribution of bootstrap α estimates. I construct these confidence intervals using 1,000 resamples. The excluded range in log AUM is (18.7, 19.1) for each estimation. I also restrict α to the range [0, 0.8] to prevent extreme solutions. This restriction is binding on some of the bootstrap estimates in the first two years, so the upper limits of these confidence intervals are compressed. Additionally, the estimator returns the value 0 for α if the integration used to calculate A returns a negative value or does not converge. The lower limit is 0 in four of the windows, suggesting that the integration did not converge to a positive estimated bunching mass in a substantial number of resamples.

Figure 8: Return Bunching Starting Below $150 mm

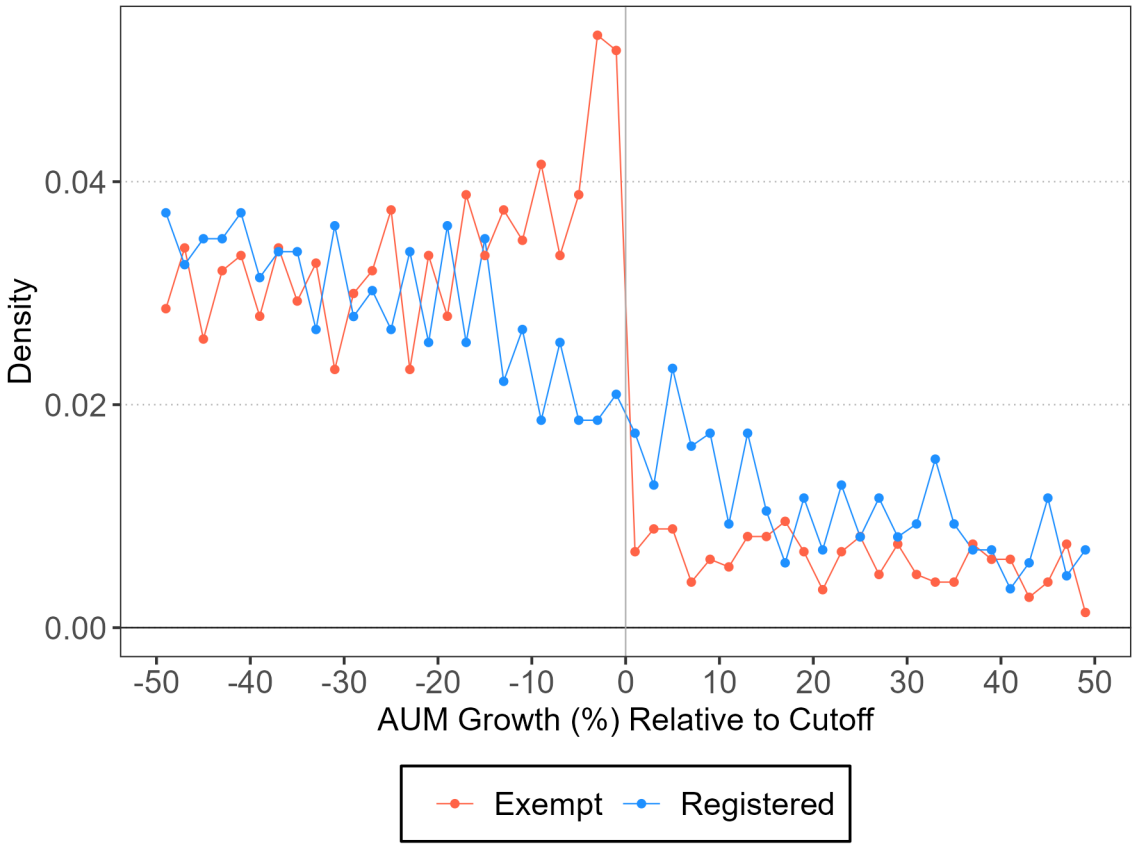
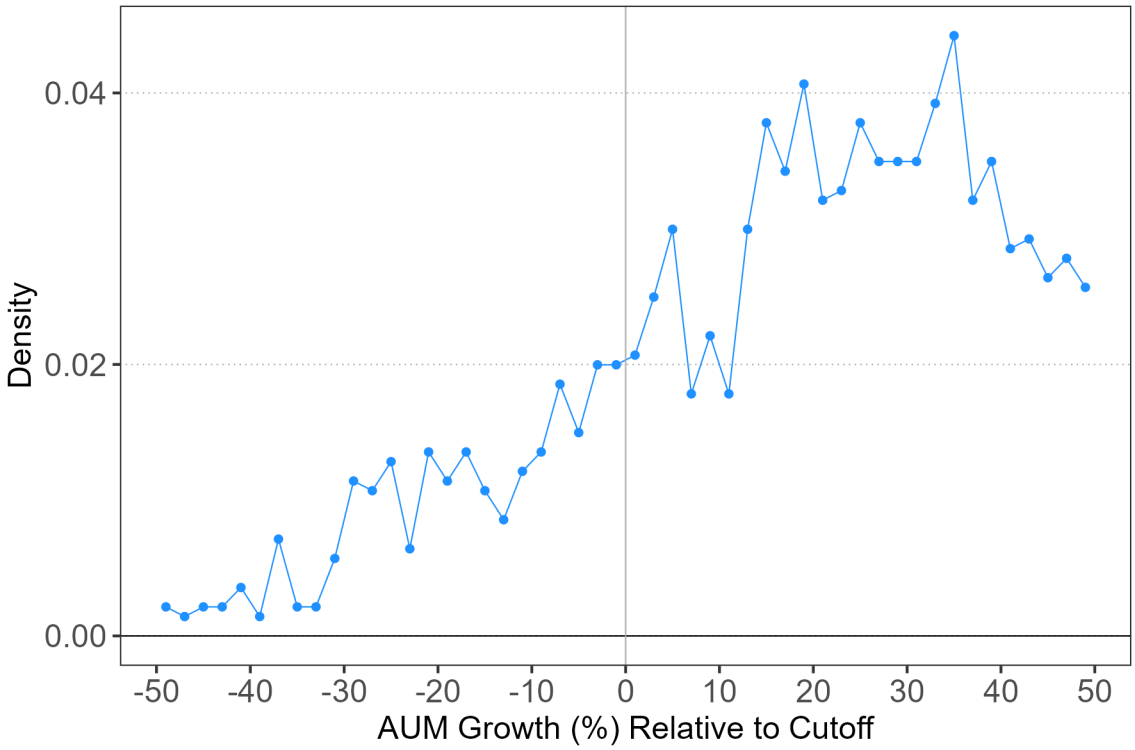


Figure 9: Return Bunching Starting Above $150 mm



Appendix

A.1 Derivations

First, note that, to be profit maximizing, an adviser's log AUM must satisfy the following first-order condition:

$$\frac{\partial \pi(q|z)}{\partial q} = \frac{\partial R(q|z)}{\partial q} \cdot \exp(q) + [R(q|z) - C] \cdot \exp(q) = 0$$

$$-\frac{\partial R(q|z)}{\partial q} = R(q|z) - C \tag{6}$$

Next, beginning with the indifference condition in Equation 1, replace $R(\underline{q}|\overline{z})$ with a Taylor expansion around $\overline{q}$. Equation 1 becomes

$$\left[R(\overline{q}|\overline{z}) + \frac{\partial R(\overline{q}|\overline{z})}{\partial q}(\underline{q} - \overline{q}) + O(\underline{q} - \overline{q})^2 - C\right] \cdot \exp(\underline{q}) = [R(\overline{q}|\overline{z}) - C] \cdot \exp(\overline{q}) \cdot (1 - \tau)$$

Then, we can replace $\frac{\partial R\overline{q}|\overline{z}}{\partial q}$ using the equality in Equation 6 and solve for τ to obtain the following expression:

$$\tau = 1 - (1 - \underline{q} + \overline{q}) \exp(\underline{q} - \overline{q}) + O\left((\underline{q} - \overline{q})^2 \exp(\underline{q} - \overline{q})\right) \tag{7}$$

This expression suggests the approximation that is Equation 2.

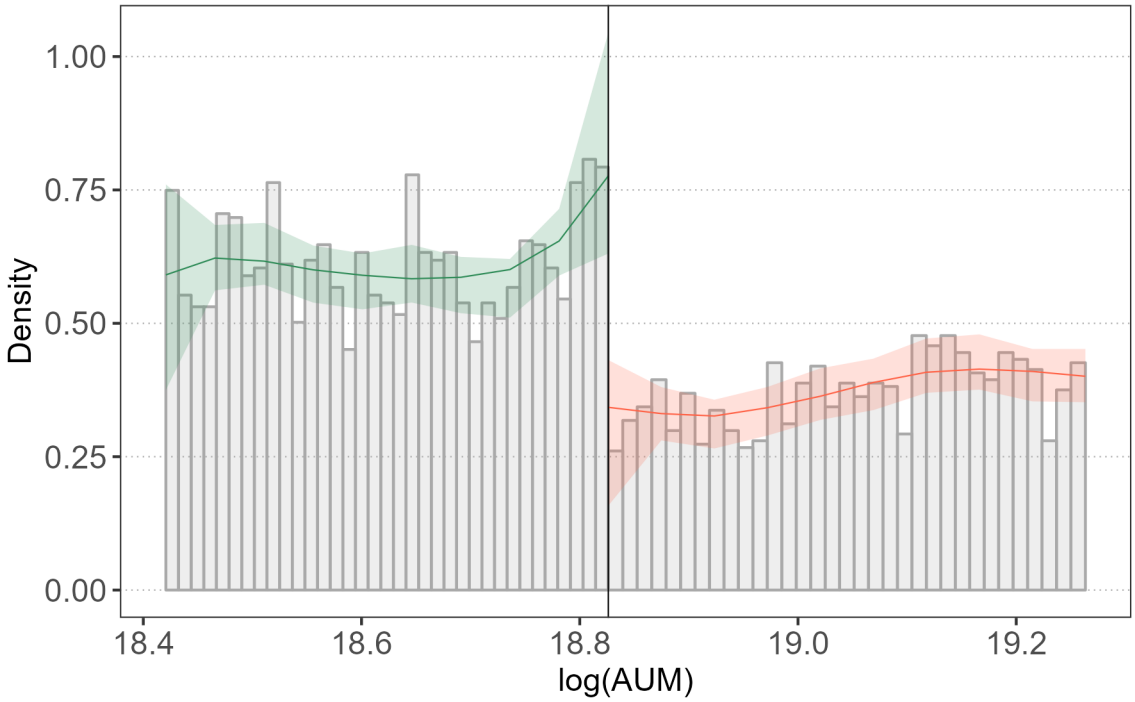
A.2 Additional Density Tests

In this Appendix section, I use an alternate discontinuity test that has been developed in the economics literature starting with McCrary (2008) and continuing with Cattaneo, Jansson, and Ma (2020, 2022, 2024). The test grew up as a way to check identifying assumptions for regression discontinuity designs but is also useful here. In essence, the test uses local linear regression to estimate the density of a running variable (here, $\log(AUM)$) around a cutoff (here, \$150 million). If the density estimates from the left and right of the cutoff are significantly different, we can reject the null hypothesis that the distribution is continuous.

Figure 10 displays a histogram of $\log(AUM)$ in the neighborhood around the cutoff with local quadratic density estimates and robust, uniform confidence bands on either side. The graph shows a clear and statistically significant discontinuity around the cutoff. The test statistic is -5.797 when I use local quadratic density estimation, a triangular

kernel, and the default, mean squared error (MSE)-based bandwidth selection procedure implemented in Cattaneo, Jansson, and Ma's `rddensity` package in R.[57]

Figure 10: McCrary (2008) Discontinuity Test



A.3 Sun and Abraham (2021) Estimator

A number of recent papers have shown that two-way fixed effects estimators can produce unexpected and hard-to-interpret results when they are used to estimate "staggered adoption" event studies. See J. Roth et al. (2023) for a recent overview of the literature. In this section, I use one of the estimators that corrects for the problems with the standard two-way fixed effects estimator. I do so to ensure that my estimates of changes in AUM growth around registration are not being substantially influenced by the estimator I use.

In particular, I use the Sun and Abraham (2021) estimator as implemented in the `fixest` package in `R`. For the estimation, I drop advisers that are registered in the first year in which they appear in my dataset and that never subsequently flip from exempt to registered status.[58] Thus, the "treated" advisers are those who switch from exempt

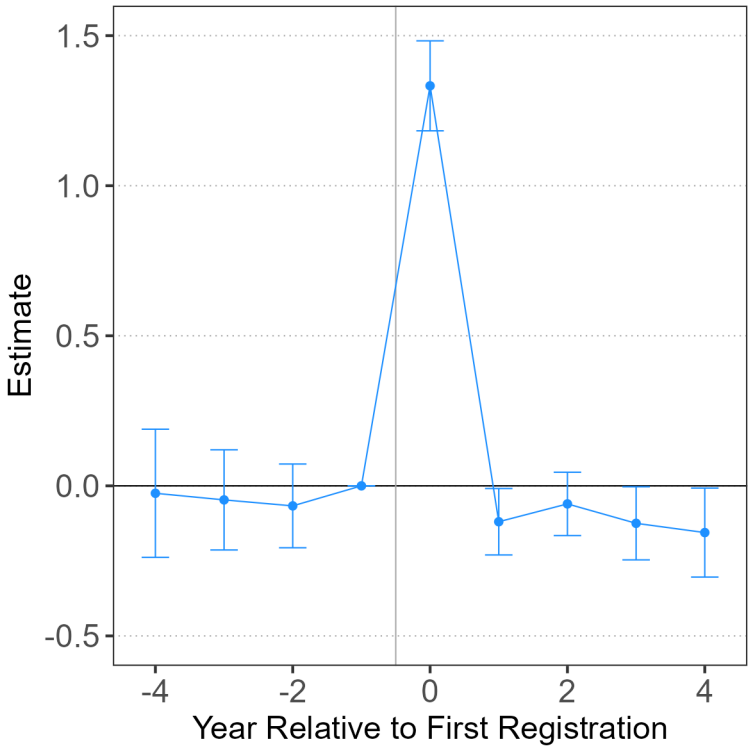
[57] For a good description of the package and thorough documentation, visit https://rdpackages.github.io/rddensity/.

[58] In this specification, I do not drop advisers who start registered but subsequently switch to exempt

to registered status some time during the sample period, and the "control" advisers are those who are exempt throughout the period.

Figure 11 plots the relative time coefficients from this estimation procedure. The results are nearly identical to the results obtained from the two-way fixed effects estimator.

Figure 11: Sun and Abraham (2021) Estimator



A.4 Robustness Checks

In this section, I test whether my fuzzy bunching estimate of the marginal adviser's AUM is robust to different choices of tuning parameters. I vary the degree of the polynomial used to estimate the counterfactual CDF and the width of the excluded range. Figure 12 plots the point estimates and bootstrap 95% confidence intervals (using 1000 resamples). This figure shows that my estimates are robust to different choices of counterfactual polynomial degree when the excluded range is narrow. For example, when the excluded range is \$132 to \$197 million, the point estimates are all clustered around \$175 million, and the confidence bands are narrow. For wider excluded ranges, however, the polynomial degree matters more. With an excluded range of \$126 to \$218 million, the point estimates are still relatively consistent, but the confidence intervals widen substantially for

status and then back to registered status, though my results are robust to dropping these firms as well.

higher-order polynomials. Using the widest excluded range and a 4th degree or higher polynomial, the estimator fails generate a positive point estimate for the bunching range. Figure 13 plots results from the same set of robustness tests for the estimated fraction of non-bunching advisers. The results are consistent with those of Figure 12.

Figure 12: Robustness to Alternative Tuning Parameters

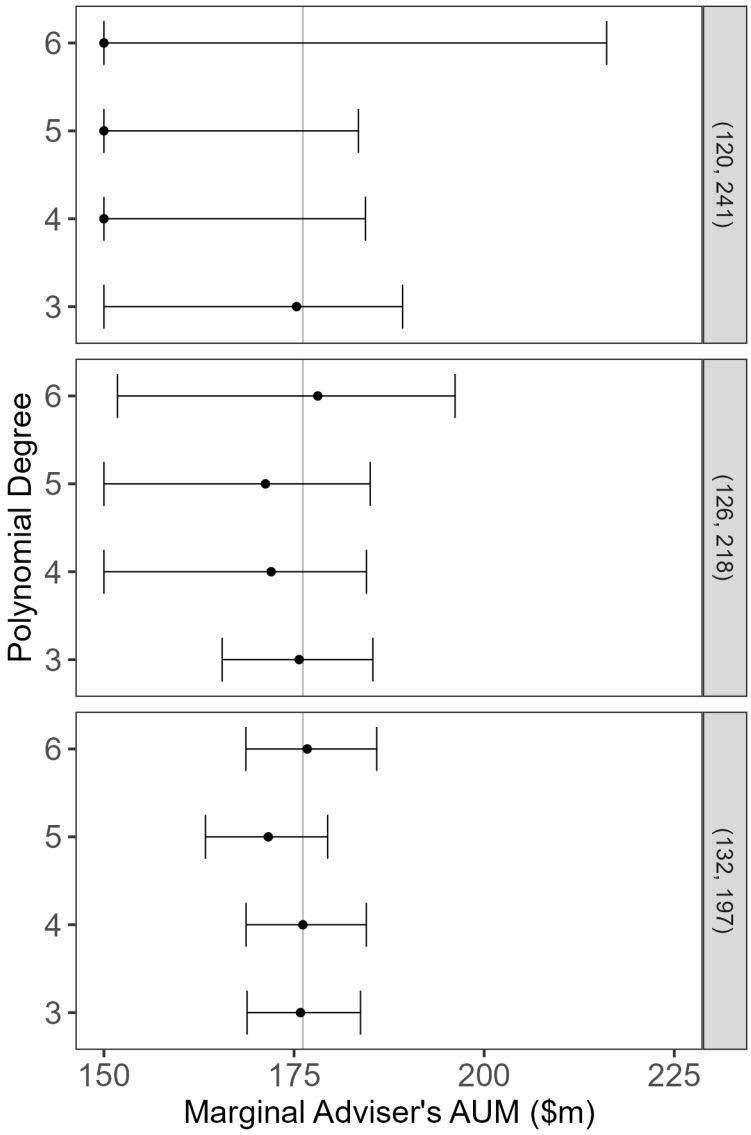


Figure 13: Robustness to Alternative Tuning Parameters (cont.)