

# Born after the Volcker Rule: regulatory change, managerial remuneration and hedge fund performance

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## Abstract

This paper finds that remunerative benefits accrue to managers of new hedge funds launched after the implementation of the Volcker Rule (section 610 of the 2010 Dodd-Frank Act) if their previous employer is a systemically important US bank. We attribute this to changes in investor perceptions of managerial ability arising from implementation of the Rule, which alters the composition of the pool of potential new fund managers with such banking connections. An analysis of 1924 new hedge funds reveals that before the Volcker Rule, funds launched by ex-bankers charge higher incentive fees and are more likely to use a high-water mark, but receive less flows as compared to other new hedge funds established during the same period. Subsequent to the Rule, ex-banker funds switch to a fee structure adopting higher management fees and receive more flows. However, ex-banker funds are indistinguishable from other new hedge funds in terms of performance, risk, and liquidation probability, both before and after the Volcker Rule.

**Keywords:** Volcker Rule; Hedge funds; Ex-bankers; Fee structure; Fund flows.

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# 1 Introduction

Investment banks have historically made short-term, nonclient-related investments in securities, commodities, and derivatives for their own account, the objective of such trading activity being to enhance their overall profitability. This proprietary investment activity contributed in a significant way to their profits (Crotty et al., 2010), with proprietary trading accounting for 63.79% of net revenues for Goldman Sachs and 45.68% for Morgan Stanley in 2006. However, during the financial crisis of 2007-2008, proprietary trading resulted in large losses for many banks. According to Stowell (2017), investment banks suffered over \$230 billion in proprietary trading losses during the four-quarter period ending in April 2008 and losses continued to grow during the remainder of 2008. These developments presage significant global regulatory reforms focusing on large and complex financial institutions (LCFIs).<sup>1</sup> In particular, in 2010 the US government implements the Dodd-Frank Wall Street Reform and Consumer Protection Act, whose main objective is to separate the investment and commercial businesses of banks. Section 619 of the Act, the Volcker Rule, prohibits banking entities from engaging in proprietary trading, or investing in or sponsoring hedge funds or private equity funds, also known as covered funds. Subsequently, LCFIs begin to close their proprietary trading desks to conform to the regulation. For example, J.P. Morgan starts to shut down activity in its 20 proprietary commodity trading desks in 2010.<sup>2</sup> Goldman Sachs also reportedly begins to cull its proprietary trading operations,<sup>3</sup> while Morgan Stanley spins off its proprietary trading arm, Process Driven Trading, in 2011.<sup>4</sup> A prevailing trend resulting from this is that many proprietary traders who leave LCFIs move to the hedge fund industry and launch their own funds. While the long-term success of those funds may be mixed, anecdotal evidence suggests initial investor appetite is strong. For example, in 2010 two of Goldman Sachs's most prominent proprietary traders, Pierre-Henri Flamand and Morgan Sze, each raised \$1bn and launched the largest hedge fund start-ups since the beginning of financial crisis.<sup>5</sup>

Recent literature examines the impact of the Volcker Rule, focusing on the consequences for banks. Following the Volcker Rule, banks reduce the size of their trading books although overall their risk profile does not decrease (Keppo and Korte, 2016; Schäfer et al., 2015; Chung et al., 2016). In addition, banks' earnings and equity value increase after the Volcker Rule, suggesting a positive market response (Chung et al., 2016; Elayan et al., 2018). The Volcker Rule also causes the deterioration of the liquidity of stressed bonds (Bao et al., 2018) and that supplied by hedge funds (Bowe et al., 2019). Our paper studies another aspect of the impact of the Volcker Rule on the dynamics of the hedge fund industry. Specifically, we focus upon

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<sup>1</sup>We adopt the term 'large and complex financial institutions' (LCFIs), in reference to the largest global commercial and investment banks, as in King and Maier (2009)

<sup>2</sup>Matthias Rieker. J.P. Morgan to Close Proprietary-Trading Desks. *The Wall Street Journal*, September 1, 2010.

<sup>3</sup>Justin Baer. Goldman winds down proprietary trading arm. *Financial Times*, February 16, 2011.

<sup>4</sup>Justin Baer. Morgan Stanley to spin off prop trading desk. *Financial Times*, January 10, 2011.

<sup>5</sup>Sam Jones and Justin Baer. Goldman's Sze raises money for hedge fund. *Financial Times*, December 15, 2010.

new hedge funds launched by former LCFI employees (ex-bankers) who leave their employer following the Volcker Rule's ban on proprietary trading and investment by banking entities in covered funds.

Investment banking is often seen to be the optimal career pathway into the hedge fund industry and indeed pre-crisis the vast majority of hedge fund hires are former proprietary traders (henceforth PTs) from the banking sector.<sup>6</sup> However, the implementation of the Volcker Rule is likely to change the inherent characteristics of managers that leave LCFIs and investors' perception of their inherent skill set. Before the Volcker Rule, LCFIs institute remuneration arrangements to retain their best performing PTs, utilising their perceived abilities to enhance trading returns and bank profitability.<sup>7</sup> In this respect, PTs who leave LCFIs may be perceived as being less skilled by investors. However, after the Volcker Rule, which restricts LCFIs from engaging in proprietary trading, star PTs are also required to leave to continue trading or face reassignment to other less suitable roles within the LCFI. In this case, investors may perceive the average inherent trading ability of PTs who leave LCFIs after the Volcker Rule as increasing.

We maintain that this potential change in investor perceptions of the inherent trading ability of the pool of PTs emerging from LCFIs following the Volcker Rule can be exploited by these traders. In particular it may enable them to generate reputational rents from such favourable perception of their trading abilities through implementing personally advantageous remuneration structures as they embark on careers in the hedge fund industry. We test this conjecture by examining whether new hedge funds launched by ex-bankers differ in terms of fee structure, capital flows, performance, risk-taking, and the probability of liquidation as compared to other new hedge funds launched at the same time, and specifically whether this changes after the implementation of the Volcker Rule in a way which is consistent with reputational rent seeking on the part of the former LCFI PTs. Our results show that new hedge funds launched by ex-bankers from US LCFIs before the Volcker Rule charge significantly higher incentive fees and are more likely to use the high-water mark, but receive fewer flows in the first year compared to other new hedge funds launched during the same period. By contrast, in a manner which is consistent with former LCFI PTs benefiting from institutional reputation and their connection with LCFIs, new hedge funds launched by ex-bankers after the Volcker Rule charge higher management fees and are less likely to use the high-water mark, but receive more flows in the first year. However, these post Volcker Rule funds reveal no significant differences in performance, risks, and probability of liquidation as compared to funds launched by former LCFI PTs before the Rule's implementation. Our interpretation of this result is that new fund managers from LCFIs personally benefit from their former institution's reputation and connections after the Volcker Rule but reveal no inherent superiority in actual trading or hedge fund management skills.

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<sup>6</sup>Beyond Banking: traditional talent pool dries up for hedge funds. Financial Times, November 12, 2015.

<sup>7</sup>Imogen Rose-Smith. U.S. Banks Are Getting Out of Hedge Funds. Will They Return? Institutional Investor, October 7, 2013.

Our analysis contributes to the literature on fund managers' inherent human capital characteristics and their effects on fund performance. Gottesman and Morey (2006) document that mutual fund managers who hold MBAs from schools with higher mean GMAT score and *Business Week* ranking exhibit superior performance. Li et al. (2011) find that hedge fund managers from higher-SAT (Scholastic Aptitude Test) undergraduate institutions tend to have higher returns, receive more inflows, and take fewer risks. Prior work experience as venture capitalist and executives at start-up companies are stronger predictors of fund performance than education for first-time venture capital fund management teams (Zarutskie, 2010). Mutual fund managers build up skills from prior work experience as industry analysts or macro analysts, leading to significantly higher performance (Chen et al., 2018). Hedge fund managers with past hedge fund experience report superior performance and those with brokerage related experience have higher survival probabilities (Papageorgiou et al., 2011). The special expertise from private equity funds and general expertise from investment banks results in better hedge fund activism outcomes (Boyson et al., 2019). However, hedge fund managers who move from the mutual fund industry underperform their new peers (Deuskar et al., 2011a). By contrast, hedge fund managers whose previous employers are located in New York or London, especially those with investment management experience, outperform their peers, suggesting an inherited agglomeration effect (De Figueiredo et al., 2013).

Another strand of research focuses on the 'star' trader/manager phenomenon. Returns to talent are documented to be 300 percent higher in finance than in the rest of the economy (C  lerier and Vall  e, 2019). In addition, changes in Morningstar's star rating rather than changes in the underlying performance measures drive investor flows to mutual funds (Guercio and Tkac, 2008). A star fund enhances capital flows to both the fund and other funds in the mutual fund family, and lower ability families are more likely to create stars by adopting higher cross-fund variance investments (Nanda et al., 2004). Fund families that allocate well-performing managers to new funds increase the inflows to both new funds and fund families. Besides, new funds exhibit higher returns in the first year (Chen and Lai, 2010). However, star managers do not guarantee superior future performance. The future performance of Morningstar's highest-rated funds shows no significant difference to that of median-rated funds (Blake and Morey, 2000). A sizable minority of star mutual fund managers pick stocks well enough to more than cover their costs (Kosowski et al., 2006). Star security analysts in investment banks experience an immediate decline in performance after changing employers, suggesting that the skills are not highly transferable (Groysberg et al., 2008). The analyst rankings of *Institutional Investor (II)* and *Wall Street Journal (WSJ)* are largely 'popularity contests' and the recommendations of stars deteriorate significantly the following year. (Emery and Li, 2009).

Our study contributes to this literature as follows. First, we examine the information content from hedge fund managers' prior work experience and connections with LCFIs and how this changes after the Volcker Rule. We test whether new funds launched by ex-bankers

generate higher returns and receive more capital flows from investors, benefiting from their prior work experience and connections as compared to other new funds launched during the same period. The empirical results show that before the Volcker Rule, ex-banker funds reveal no significant differences in performance to other new funds, suggesting that ex-banker managers either do not accumulate relevant skills to move into the hedge fund industry or those skill are not portable (Groysberg et al., 2008). In addition, ex-banker funds receive significantly lower flows in the first year, which is consistent with the perception by investors that they are less skilled. After the Volcker Rule, when star PTs are also forced to leave banks to continue trading, new funds launched by ex-bankers receive significant higher flows in the first year. This supports the star-chasing effect documented in Guercio and Tkac (2008) and Chen and Lai (2010). However, these funds do not generate superior returns and exhibit no difference in long-term flows, indicating that any reputational effects are not indicative of superior ability and their impact is short-term.

Our paper also extends the literature on managerial compensation, in particular the compensation structure of hedge funds. Gompers and Lerner (1999) and Deuskar et al. (2011b) develop a signaling model where new managers with privately known ability charge high incentive fees to signal their ability and switch to a fee structure with high management fees after their ability is revealed. Agarwal and Ray (2011) show that hedge funds increase incentive fees following high performance and increase management fees after higher capital flows, which negatively affects future performance and flows. Ramadorai and Streatfield (2011) focus on the impact of fund family characteristics in determining fees at launch and find that large and better performing fund families charge higher fees. Similarly, Deuskar et al. (2011b) find that new fund families tend to charge at- or above-median fees, while existing families charge higher fees for a new fund following superior past performance. The compensation structure of hedge funds in turn affects their future performance and risk-taking behavior. Kouwenberg and Ziemba (2007) provide evidence that higher incentive fees lead to increased risk-taking, which is reduced by the manager's own investment in the fund. Agarwal et al. (2009) find that hedge funds with higher managerial incentives and high-water mark provisions deliver superior performance.

This paper examines how managers' reputation or investors' perception impacts the initial choice of the hedge fund fee structure. According to the signalling theory in Gompers and Lerner (1999) and Deuskar et al. (2011b), new managers with privately known ability signal their skills by accepting more risk in their compensation structure, i.e. by charging low management fees and high incentive fees. After their ability is revealed, they switch to a fee structure with high management fees and low incentive fees. Our empirical results on the fee structure of new funds launched by ex-bankers are consistent with this theory. Before the Volcker Rule, managers who leave LCFIs may be perceived to be less skilled by investors as LCFIs will attempt to retain their star PTs on proprietary trading desks. Therefore, in an attempt to signal their ability, managers who leave LCFIs charge significantly higher incentive fees and more often use the

high-water mark. After the Volcker Rule, when star managers also leave LCFIs, investors may expect an increase in the proportion of skilled PTs moving into hedge fund management. Benefiting from these reputational effects, managers who leave LCFIs charge significantly higher management fees and less often use the high-water mark. However, these funds subsequently reveal no difference in performance, risks, and liquidation probability, suggesting that it is the hedge fund managers who reap the benefits after the Volcker Rule but not fund investors.

## 2 Research Design

This section develops testable hypotheses relating to the characteristics of new hedge funds launched before and after the Volcker Rule. We begin by discussing the time line for implementation of the Volcker Rule and the changes in the pool of managers that leave LCFIs, then proceed to analyse the Rule's effect on the fee structure and capital flows of new hedge funds. Finally, we discuss new hedge funds' returns, risks, and liquidation probability.

### 2.1 The Volcker Rule timeline and the pool of managers

The Volcker Rule is first publicly endorsed by President Obama on January 21, 2010 and enacted as part of the Dodd-Frank Wall Street Reform and Consumer Protection Act on July 21, 2010, codified in Section 13 of the Bank Holding Company Act of 1956. On December 10, 2013, final regulations are issued and the rule becomes effective on April 1, 2014. The largest US banking entities (with at least \$50 billion in trading assets) are required to report the mandated quantitative measurements from July 1, 2014, with full compliance by July 21, 2015. However, a number of subsequent extensions occur to enable banks to exit illiquid investments. On December 18, 2014, the Federal Reserve extends the Volcker Rule's conformance period until July 21, 2016 for 'legacy covered funds'. It subsequently extends this period further to July 21, 2017, the last of the three one-year extensions that the Board is legally authorized to grant. The detailed implementation time line is discussed and illustrated in *Bowe et al. (2019)*.

Despite the series of extensions subsequently granted to banks to achieve full compliance with the Rule, they must endeavour to implement the legislation from April 1, 2014. Importantly, from July that year their efforts at compliance are monitored through a legally mandated reporting channel. Thus, we expect that any major adjustments in bank proprietary trading operations and any resulting exodus of PTs is likely to be manifest after April 2014. In addition, information of the eventual need to comply with the regulations is available as early as 2010. Therefore, we consider any changes to the characteristics of new hedge funds launched by former bankers during two different phases: the implementation phase, from July 2011 to March 2014; and the compliance phase, from April 2014 to March 2016.

The prohibitions imposed on LCFIs, restricting their involvement in proprietary trading are a central element of the Volcker Rule. Before the Rule, proprietary trading desks populated by well-remunerated star traders generated substantial profits for their LCFI employers, in the process often establishing a reputation bordering on legendary or cult status among their peers. For example, Goldman Sachs’s principal investment team consistently outperformed the market, recording supranormal profits even at the worst stages of the 2008-2009 crisis. JPMorgan’s proprietary desk purchased AAA-rated collateralized loan obligations when demand and prices were extremely low, cashing in significant profits when the markets recovered in late 2009.<sup>8</sup> The top six LCFIs, namely JPMorgan Chase, Goldman Sachs, Bank of America, Morgan Stanley, Citigroup, and Wells Fargo, made an aggregate of \$59.7 billion in pretax income from proprietary trading in 2009.<sup>9</sup> Hence, during the pre-Rule period, PTs who leave LCFIs, thereby foregoing significant remuneration, create a signal extraction problem for external investors and their peers in the markets who must decide whether their departure is voluntary or whether they are not retained owing to poor trading performance. The high opportunity cost of leaving a LCFI voluntarily suggests these informational asymmetries will often generate an external perception that such PTs are inherently less skilled on average.

The Volcker Rule prohibits bank entities from proprietary trading. It limits LCFIs’ ability to pursue speculative activities with their own cash to 3% of Tier-one capital (e.g. \$2.1 billion for Goldman Sachs; \$1.5 billion for Morgan Stanley). Since the adoption of the Rule, LCFIs are closing their proprietary trading units and even star PTs are being required to leave. For example, proprietary trading revenues at Goldman Sachs have fallen from \$25 billion in 2009 to \$18 billion in 2010 to \$5 billion in 2015.<sup>10</sup> The number of employees trading equities has fallen from a peak of 600 people in 2000 to only two in 2016.<sup>11</sup> In such circumstances, in comparison to the situation before the Volcker Rule, investors may perceive the average quality of PTs who leave LCFIs as increasing when LCFIs begin to implement the regulations. In summary, we conjecture that implementing the Volcker Rule may lead to a change not only in the inherent characteristics of PTs that leave LCFIs but critically, also in external investors’ perception of the average trading ability of such individuals. A more positive investor perception is likely to influence their subsequent capital allocation decisions and the resulting fees which hedge fund managers can charge.

## 2.2 The Volcker Rule and the fee structure of new hedge funds

A complex and nonlinear fee structure is a distinctive feature of hedge funds. Gompers and Lerner (1999) and Deuskar et al. (2011b) outline three competing theories explaining the

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<sup>8</sup>Alex Preston. Rise and fall of the prop trader. October 21, 2020.

<sup>9</sup>Robert Lenzner. Six Giant Banks Made \$51 Billion Last Year; The Other 980 Lost Money. *Forbes*, June 3, 2010.

<sup>10</sup>The Economist. Investment Banking: Rebooting. Oct 29, 2016.

<sup>11</sup>The Economist. Goldman Sachs: Too Squid To Fail? October 27, 2016.

initial fee structure: the signaling theory, the implicit incentive theory, and the startup cost theory. The signaling theory adopts an adverse selection setting in which managers initially know their own inherent ability, but investors do not. High-ability managers will attempt to signal their type by accepting riskier pay, i.e. higher pay-for-performance sensitivities and lower base compensation. The pay-for-performance sensitivity increases as the difference in abilities increases. Once the high-ability manager's type is revealed, they desire more insurance, receiving a higher fixed and less variable component in their compensation. The implicit incentive theory assumes investors and managers both have the same initial information about managers' abilities, but investors cannot observe the effort level chosen, which creates a moral hazard problem. Managers have an incentive to increase effort following their initial fund launch even in the absence of explicit incentive fees as fund returns correlate positively with effort, so generating higher returns leads to investors believing that a manager possesses higher ability. Once a manager becomes well-established, higher explicit incentive fees are needed to induce effort. The startup cost theory maintains that a new manager charges both higher management fees and higher incentive fees in order to recuperate the nontrivial startup cost of entering into a new business. In our case, PTs who leave LCIFs and launch new hedge funds face startup costs both before and after the Volcker Rule. However, we conjecture that the average new fund manager in these two periods will be perceived differently by investors in relation to their trading skills.

Before the Volcker Rule, former bankers may build up skills from their past employment experience. Eric Mindich founded Eton Park, a successful US hedge fund, in 2004 after working as a proprietary trader at Goldman for over a decade, as did Kenneth Brody and Frank Brosens, who co-founded the Taconic hedge fund.<sup>12</sup> However, as LCFIs have a monetary incentive to retain their star PTs and assign them to proprietary trading roles, PTs leaving LCFIs maybe perceived as having less ability by external investors, who are unable to accurately determine if the trader left voluntarily or was dismissed. Therefore, in an attempt to convince external investors of their ability, those former bankers may decide to adopt a remuneration structure with higher incentive and lower management fees and be more likely to use the high-water mark (Agarwal and Ray, 2011), in comparison to other new hedge funds launched at a similar time. Following the Volcker Rule, all PTs, including star PTs are obliged to leave LCFIs to continue trading. In this case, investors may expect that the proportion of skilled managers and traders in the pool of former bank fund managers will increase. Benefiting from this expectation, PTs who leave LCFIs after the Volcker Rule's implementation may be more inclined (on average) to charge higher management fees, lower incentive fees, and be less inclined to use the high-water mark as their ability to convey inherent trading and managerial skills through choice of fee structure is diluted. The above analysis informs our hypothesis on the fee structure of new hedge funds.

*H1: Relative to other new hedge funds launched within the same time period,*

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<sup>12</sup>Miles Johnson. Goldman stars fall back down to earth. Financial Times, June 9, 2014.



*hedge funds launched by ex-bankers charge higher (lower) incentive fees, lower (higher) management fees, and are more (less) likely to use the high-water mark before (after) the Volcker Rule.*

We test the hypothesis using the following regression models for fee structures:

$$Fee^i = \beta_0 + \beta_1 US\ spin^i + \beta_2 Phase_t + \beta_3 US\ spin^i \cdot Phase_t + \delta Controls^i + \varepsilon^i \quad (1)$$

$$HWM^i = \begin{cases} 1, & \text{if } HWM_{L^*}^i > 0 \text{ (hedge fund } i \text{ uses the high-water mark),} \\ 0, & \text{otherwise.} \end{cases} \quad (2)$$

$$HWM_{L^*}^i = \beta_0 + \beta_1 US\ spin^i + \beta_2 Phase_t + \beta_3 US\ spin^i \cdot Phase_t + \delta Controls^i + \eta^i \quad (3)$$

where  $Fee$  denotes fund  $i$ 's charges, either management fee ( $MgtFee$ ) or incentive fee ( $IncFee$ ). We use a logit regression for the high-water mark provision.  $HWM^i$  equals 1 if the high-water mark provision is present for fund  $i$ .  $HWM_{L^*}^i$  is a latent variable that depends on a set of explanatory variables. The error term  $\eta^i$  follows a logistical distribution.

Our key variable of interest is  $US\ spin$ , which equals 1 if a fund has at least one manager whose last employer immediately before launching the new fund is a US LCFI. We also use an alternative measure  $US\ years$  equal to the number of years the ex-bankers worked in a US LCFI immediately before starting a hedge fund. Control variables include  $US\ experience$  that equals 1 if a fund has at least one manager who has any prior work experience in a US LCFI, as well as  $NonUS\ experience$ ,  $NonUS\ spin$ , and  $NonUS\ years$ , which are equivalent control variables defined for non-US banks. These institutions are not targeted by the Volcker Rule and we employ them for comparative purposes.

The US-based LCFIs are the eight US banks in the list of Systemically Important Financial Institutions (SIFI) namely: the Bank of America Corporation, JP Morgan Chase & Co., Citigroup Inc., Wells Fargo & Company, Goldman Sachs Group, Morgan Stanley, Bank of New York Mellon Corporation, and State Street Corporation (Financial Stability Board, 2011). We focus exclusively on PTs who leave these SIFIs for the following reasons. First, according to Paul Volcker himself, the Volcker Rule will only affect banks that are involved in highly-speculative trading, particularly, those banks deemed too-big-to-fail.<sup>13</sup> Additionally, the proprietary trading business appears very concentrated in LCFIs. The top six bank holding companies, including JPMorgan Chase, Goldman Sachs, Bank of America, Morgan Stanley, Citigroup and Wells Fargo, earned an aggregate of \$59.7 billion in trading in 2009, accounting for 92.8% of industry trading revenue (986 banks).<sup>14</sup> The non-US LCFIs include: HSBC Bank plc, UBS Group AG, Deutsche Bank AG, Credit Suisse Group AG, BNP Paribas S.A., Barclays plc, Banco Santander S.A., Société Générale S.A., Standard Chartered PLC, The Royal Bank of Scotland, and Crédit Agricole S.A. These banks are headquartered outside the US and are not subject to the Volcker

<sup>13</sup>At the time of this statement, Volcker is the Chairman of President Obama's Economic Advisory Board.

<sup>14</sup>Robert Lenzner. Six Giant Banks Made \$51 Billion Last Year; The Other 980 Lost Money. Forbes, June 3, 2010.

Rule.

To identify the effect of the Volcker Rule on newly established hedge funds, we use a vector *Phase* consisting of two dummy variables: *Phase1* and *Phase2*, capturing the implementation and compliance periods of the Volcker Rule, respectively. *Phase1* equals 1 for funds launched between July 2011 to March 2014, and zero otherwise. *Phase2* equals 1 for funds launched between April 2014 to March 2016, and zero otherwise. We also control for other fund characteristics, including: if a fund has a female manager; is managed by a team; and whether a manager has work experience in investment management, financial services, research, non-financial industry, or government. The full list of variables is presented in Table 1.

Our analysis predicts  $\beta_1$  to be negative and  $\beta_3$  to be positive for management fees, indicating that hedge funds launched by former bankers charge lower management fees before and higher management fees after the Volcker Rule. In contrast, we expect  $\beta_1$  to be positive and  $\beta_3$  to be negative for incentive fees and the high-water mark provision, respectively. This indicates that ex-banker funds charge higher incentive fees and are more likely to use the high-water mark provision before the Volcker Rule while they set lower incentive fees and are less likely to use the high-water mark provision following the Volcker Rule.

## 2.3 The Volcker Rule and new hedge funds' flows

Our previous discussion suggests that as LCFI may have been dismissing low-performing PTs but actively attempting to keep star PTs employed within the institution before the Volcker Rule, investors may perceive ex-LCFI employees establishing hedge funds during this period as less skilled traders. In addition, this is a period during which LCFIs own and sponsor hedge funds and provide many assets under management services to their clients. Thus, rather than follow the trader if a PT leaves a LCFI, investors maybe more likely to keep their investments in the LCFI. Collectively, this leads to the expectation that hedge funds launched by former bankers before the Volcker Rule receive fewer capital flows as compared to other new hedge funds. After the Volcker Rule, when star PTs are also required to leave, new funds launched by former bankers may be perceived to be of higher quality on average by investors, in the sense they are managed by more successful traders, leading to higher flows to those funds. Additionally, PTs who leave LCFIs after the Volcker Rule are also more likely to take their clients with them as LCFIs are prohibited from investing or owning hedge funds. If our conjecture holds, we expect new funds launched by former bankers to receive higher flows in the first year. If these funds are subsequently shown to be successful, the effect is long-term and enhanced flows should persist beyond the first year. The above analysis suggests:

*H2: Relative to other new hedge funds launched during the same period, hedge funds launched by ex-bankers before (after) the Volcker Rule receive lower (higher) flows during their first year.*

We test the hypothesis using the following regression specifications:

$$\overline{Flow}_t^i = \beta_0 + \beta_1 US\ spin^i + \beta_2 Phase_t + \beta_3 US\ spin^i \cdot Phase_t + \delta Controls_t^i + \varepsilon_t^i \quad (4)$$

where  $\overline{Flow}_t^i$  is the average annual flow for fund  $i$  in year  $t$ . We regress the first year flow and flows in subsequent years (second to third year and second to the fifth year) separately to differentiate the short-term and long-term effects on flows. The monthly flows for hedge fund  $i$  in month  $t$  is measured using Equation (5);  $AUM_t^i$  denotes the assets under management of fund  $i$  at the end of month  $t$ , and  $Ret_t^i$  is the reported return for fund  $i$  during month  $t$ .

$$Flow_t^i = \frac{AUM_t^i - AUM_{t-1}^i(1 + Ret_t^i)}{AUM_{t-1}^i} \quad (5)$$

In choosing the remaining control variables, we closely follow Ding et al. (2008) and Kolokolova and Mattes (2018).  $HWM^i$  equals 1 if the high-water mark provision is present, and 0 otherwise;  $MgtFee^i$  is the management fee a fund charges;  $IncFee^i$  is the incentive fee a fund charges;  $Redemption^i$  is the fund's redemption period (measured in months);  $Subscription^i$  is the fund's subscription period (measured in months);  $LockUp^i$  is the fund's lockup period (measured in months);  $Leverage^i$  equals 1 if a fund uses leverage, and 0 otherwise, and  $StyleEffect_t^i$  is the average flow into hedge funds in the same style category as fund  $i$ , which more generally captures the time-varying effects of other macro factors that can potentially affect hedge fund flows in a systematic way. For flows in the first year, we control for the hedge fund dollar assets at the beginning of the first year ( $AUM^i$ ). For flows in later years, we control for the average return for a hedge fund over the past year ( $Ret_{t-1}^i$ ), the standard deviation of monthly returns during the past year ( $STD_{t-1}^i$ ), the hedge fund dollar assets at the end the past year ( $AUM_{t-1}^i$ ), and the age of a hedge fund at the end of the past year ( $Age_{t-1}^i$ ). The other variables are defined in Section 2.2 for Equation (1).

We expect  $\beta_1$  to be negative and  $\beta_3$  to be positive using the first year flows in Equation (4), indicating that hedge funds launched by former bankers before (after) the Volcker Rule receive lower (higher) flows in the first year. If hedge funds launched by ex-bankers are indeed managed by more skilled traders after the Volcker Rule, we expect  $\beta_3$  to be positive using flows in the second year to fifth year in Equation (4), indicating that those funds also receive higher flows over the longer period. If the implementation of the Volcker Rule leads to the overall reduction of flows to new hedge funds,  $\beta_2$  will be negative.

## 2.4 The Volcker Rule and new hedge funds' performance

This section analyses whether new funds launched by former bankers reveal any differences in their actual performance, which would justify any differences in fee structure and flows. Before the Volcker Rule, PTs may leave a LCFI for two reasons. First, LCFIs dismiss low performing PTs but keep star PTs on the proprietary trading desk. If this is the case, PTs who leave LCFIs may have lower trading/fund management skills and generate lower returns when they launch new hedge funds. Second, despite the high opportunity costs involved, some high performing PTs may also leave LCFIs and move into the hedge fund industry if they expect to generate higher earnings than currently by establishing their own fund. If this is the case, hedge funds launched by former bankers may incorporate superior managerial skills and generate enhanced returns. If our earlier conjectures are correct, the proportion of low performing PTs in the pool of ex-banker fund managers is higher before the Volcker Rule, so hedge funds launched by ex-bankers in this period should report lower returns compared to other new hedge funds. Furthermore, if the proportion of skilled PTs increases after the Volcker Rule in accordance with our expectations, hedge funds launched by ex-bankers during this later time period may generate higher returns as compared to other new hedge funds. This leads to the following hypothesis:

*H3: Relative to other new hedge funds launched during the same period, hedge funds launched by ex-bankers report lower (higher) returns before (after) the Volcker Rule.*

The panel regression model we estimate to test this hypothesis is as follows:

$$Ret_t^i = \alpha + \sum_{k=1}^7 \beta_k F_{k,t} + \gamma_1 US\ spin^i + \gamma_2 Phase_t + \gamma_3 US\ spin^i \cdot Phase_t + \delta Controls_t^i + \varepsilon_t^i \quad (6)$$

where  $Ret_t^i$  is hedge fund  $i$ 's return in month  $t$ . We use the first 36 observations for each fund.  $F_{k,t}$  are the 7 Fung-Hsieh factors which include: two equity-oriented risk factors (the Standard & Poors (S&P) 500 index total return ( $MKT$ ) and the difference between the Russell 2000 index total return and the S&P 500 total return ( $SMB$ )), two bond-oriented risk factors (the change in the 10-year Treasury constant maturity yield ( $TERM$ ) and the change in Moody's Baa yield over the 10-year Treasury constant maturity yield ( $CREDIT$ )), and three trend-following momentum risk factors ( $PTFSBD$  (bond),  $PTFSFX$  (currency) and  $PTFSCOM$  (commodity)).<sup>15</sup> We also control for fund size ( $AUM$ ), management and incentive fees ( $MgtFee$  and  $IncFee$ ), the use of HWM and leverage ( $HWM$  and  $Leverage$ ), and share restrictions ( $Redemption$ ,  $Subscription$ , and  $LockUp$ ), which are important determinants of hedge fund performance (Fung et al., 2008; Kolokolova, 2012). The other variables are defined in Section 2.2 for Equation (1).

<sup>15</sup>These factors may be downloaded from <http://faculty.fuqua.duke.edu/~dah7/DataLibrary/TF-FAC.xls>.

In Equation (6), the key variables of interest are  $\gamma_1$  and  $\gamma_3$ . We expect  $\gamma_1$  to be negative and  $\gamma_3$  to be positive, if new funds launched by former bankers report lower returns before the Volcker Rule and higher returns after the Volcker Rule.

## 2.5 The Volcker Rule and new hedge funds' risks

This section analyses whether hedge funds launched by former bankers exhibit any differences in either their risk-taking or liquidation probability. Kouwenberg and Ziemba (2007) find that hedge fund managers increase risk-taking with higher incentive fees. Our previous analysis suggests that PTs who leave LCFIs before the Volcker Rule charge higher incentive fees and use the high-water mark to signal their ability, as they are more likely to be perceived to be less skilled by investors. In this case, we expect that these PTs take higher risks and their funds have a higher liquidation probability. After the Volcker Rule, PTs who leave LCFIs do not have such concerns as their decision to leave is mandated by regulation and so perceived to be unrelated to their ability. This enables them to switch to a fee structure with high management fees, low incentive fees, and be less inclined to use the high-water mark. Therefore, we expect that these PTs take lower risks and their funds have a lower liquidation probability compared to other new funds. This suggests:

*H4: Relative to other new hedge funds launched during the same period, hedge funds launched by ex-bankers exhibit higher (lower) risk and liquidation probability before (after) the Volcker Rule.*

We test the hypothesis using the following regression models:

$$Risk^i = \beta_0 + \beta_1 US\ spin^i + \beta_2 Phase_t + \beta_3 US\ spin^i \cdot Phase_t + \delta Controls^i + \varepsilon^i \quad (7)$$

$$Liquidation^i = \begin{cases} 1, & \text{if } Liquidation_{L^*}^i > 0 \text{ (hedge fund } i \text{ is liquidated within 5 years),} \\ 0, & \text{otherwise.} \end{cases} \quad (8)$$

$$Liquidation_{L^*}^i = \beta_0 + \beta_1 US\ spin^i + \beta_2 Phase_t + \beta_3 US\ spin^i \cdot Phase_t + \delta Controls^i + \eta^i \quad (9)$$

where *Risk* denotes either the systematic risk (SRisk) or the idiosyncratic risk (IRisk) of a hedge fund. Following Bali et al. (2012), the SRisk and IRisk are measured using Equations (10) and (11). The idiosyncratic (or residual) risk of fund *i* is defined by the variance of the error term  $\varepsilon_t^i$  in Equation (10), denoted by  $\sigma_{\varepsilon_t^i}^2$ . Total risk of fund *i* is defined by the variance of  $Ret_t^i$  denoted by  $\sigma_t^2$ . The systematic risk of fund *i* is defined as the difference between total and idiosyncratic variance as in Equation (11).

$$Ret_t^i = \alpha + \sum_{k=1}^7 \beta_k F_{k,t} + \varepsilon_t^i \quad (10)$$

$$SRisk^i = \sigma_i^2 - \sigma_{\varepsilon,i}^2 \quad (11)$$

We use a logit regression to test the hedge fund liquidation hypothesis.  $Liquidation^i$  denotes the liquidation probability of hedge fund  $i$ , which equals 1 if a fund is liquidated within the first 5 years after being launched.  $Liquidation_{L^*}^i$  is a latent variable that depends on a set of explanatory variables. The error term  $\eta^i$  follows a logistical distribution. Following Kolokolova (2011), we control for fund performance, risk, size, and managerial incentives for the liquidation probability, including the average return for fund  $i$  during the first 3 years ( $Ret^i$ ), the standard deviation of monthly returns during the first 3 years ( $STD^i$ ), the hedge fund dollar assets at the end of year 3 ( $AUM^i$ ), the average flow for fund  $i$  over the first 3 years ( $Flow^i$ ), and a dummy variable that equals 1 if a hedge fund belongs to a multi-fund family ( $Family^i$ ). The other variables are defined in Section 2.2 for Equation (1).

Our analysis predicts  $\beta_1$  is positive and  $\beta_3$  is negative in both Equation (7) and (9), indicating that hedge funds launched by former bankers exhibit both higher risk and liquidation probability as compared to other new hedge funds before the Volcker Rule, and lower risk and liquidation probability after the Volcker Rule.

### 3 Data

We collect the hedge fund data sample from the Eureka hedge fund database, which includes return history, together with information on both hedge fund characteristics and manager profiles. We manually check the manager profile description and use managers' LinkedIn profiles (if available) to collect their past work experience information. The original sample runs from January 1994 to September 2019 and includes 18,582 funds. We restrict our sample to comprise funds with at least 36 return observations that report their returns in U.S. dollars. Of the remaining 5,967 hedge funds, we select new hedge funds launched during the pre-Volcker, implementation, and compliance periods. Following our discussion in section 2.1, the pre-Volcker period extends from July 2009 to June 2011, the implementation period from July 2011 to March 2014, and the compliance period from April 2014 to March 2016. In our sample, 678, 804, and 442 new funds are launched during these three periods, respectively, of which 35, 38, and 14 are launched by individuals whose previous employer is a US LCFIs.

[Tables 2 and 3 in here]

Tables 2 and 3 report summary statistics for hedge fund monthly returns and flows. Panels A, B, and C report the statistics for new funds launched during the pre-Volcker, implementation, and compliance periods, respectively. The average return of all funds launched during the pre-Volcker period is 0.726% per month. Funds launched by ex-bankers from US LCFIs have the highest average return of 0.839% and the smallest return volatility of 3% per month, but the

difference with other funds is not significant. By contrast, funds launched by ex-bankers from non-US LCFIs have a significantly lower average return of 0.291% compared to other new funds and the largest return volatility of 4.295%. During the implementation period, the returns of different groups of funds are similar. The average return of all funds is 0.732% and the average return of funds launched by ex-bankers from US (non-US) LCFI is 0.780% (0.740%). Similarly, there are no significant differences in returns for funds launched during the compliance period. Funds launched by former US LCFI bankers reveal the highest return of 0.987% while those launched by former non-US LCFI bankers report the lowest average return of 0.564%. The average return of all funds is 0.706% per month.

Flows appear to exhibit a different pattern to returns during the pre-Volcker period. Funds launched by former bankers from non-US LCFIs, which have the lowest returns, receive the strongest inflows of 9.185% per month, significantly higher than that of other new funds at the 5% level. The average flow to funds launched by former bankers from US LCFIs is 4.035% and is similar to the 4.299% of other funds. During the implementation period, there is no significant difference in flows consistent with the return pattern. Funds launched by former bankers from US (non-US) LCFIS receive an average flow of 4.650% (5.017%) and the average flow to other funds is 4.965%. During the compliance period, funds launched by ex-bankers from US LCFI receive the strongest inflows of 7.914% per month. The average flow to funds launched by non-US LCFI bankers is 5.294%, which is similar to that of other new funds.

Table 4 reports the descriptive statistics of other hedge fund characteristics. During the pre-Volcker period, funds launched by ex-bankers from US LCFIs reveal statistically significant differences in terms of their fee structure, share restrictions, and the use of leverage in comparison to other independent new funds. On average, they charge higher incentive fees (18.422% versus 16.573%), appear more likely to use a high-water mark and leverage (0.971 and 0.657 versus 0.733 and 0.498, respectively), and their redemption, subscription, and lockup periods are two weeks, one week, and two months longer, respectively. By contrast, funds launched by ex-bankers from non-US LCFIs indicate no significant differences in these characteristics. During the implementation period, funds launched by ex-bankers from US LCFIs also charge significantly higher incentive fees, are more likely to use a high-water mark and leverage, and have a significantly higher redemption period. Funds launched by non-US LCFIs bankers only show a significant difference in subscription period, which is one week longer, as compared to other new funds. During the compliance period, funds launched by ex-bankers from US LCFIs manifest statistically significant differences in terms of their management fees, subscription and lockup periods, and age. On average, they charge higher management fees (1.712% versus 1.331%), their lockup period is 3 months longer, but they have a shorter life span. Funds launched by ex-bankers from non-US LCFIs reveal some slight differences in their use of high-water mark and leverage.

[Table 4 in here]

Overall, the descriptive statistics indicate a discernible shift in the fee structure of funds which is consistent with our hypothesis relating to investor perceptions of ex-bankers. At the same time, a comparison of the return pattern across funds does not seem to indicate any discernible differences relating to the hedge fund managerial abilities of former US LCFI employees.

## 4 Empirical results

### 4.1 Hedge fund fees and the Volcker Rule

We report the estimation results for Equations (1) and (3), capturing the impact of the Volcker Rule on the fee structure of new hedge funds in Table 5. Columns (1)-(3) and (7)-(9) employ a dummy variable to indicate a fund manager is an ex-banker from a US LCFIs and columns (4)-(6) and (10)-(12) use the number of years that an ex-banker works in a US LCFI. Columns (7)-(12) further control for a manager's other work experience. The significant positive coefficient  $\beta_1$  in columns (2), (3), and (5) indicates that hedge funds launched by ex-bankers from US LCFIs before the Volcker Rule charge significantly higher incentive fees and are more likely to use a high-water mark, supporting hypothesis *H1*. Subsequent to the Volcker Rule, new hedge funds significantly reduce their management and incentive fees and the effect is more pronounced during the compliance period. The corresponding coefficients increase in absolute value, from -0.058 to -0.166 and -1.170 to -2.241, for management and incentive fees, respectively, in columns (1) and (2). However, funds launched by ex-bankers during the compliance period of the Volcker Rule charge significant higher management fees and are less likely to use a high-water mark, a finding which is consistent with our hypothesis *H1*. The corresponding loading  $\beta_3$  on the interaction term, *US spin* · *Phase2*, is positive with a value 0.270 for management fees and negative with a value -2.402 for the high-water mark, and both are significant at the 5% level. As the average initial size of hedge funds launched during this period is about 60 million dollars, the extra income for US LCFI ex-bankers is about 162,000 USD per year compared to that received by other new funds launched after the Volcker Rule. Our main results remain qualitatively unchanged controlling for other manager specific variables in columns (7) to (12). By comparison, funds launched by ex-bankers from non-US LCFIs show no significant differences in fee structures either before or after the Volcker Rule. Overall, after implementation of the Volcker Rule, there appears to be a change in the fee structure for funds launched by ex-bankers from US LCFIs: they charge higher management fees but reduce incentive fees and are less likely to use a high-water mark.

[Table 5 in here]



## 4.2 Hedge fund flows and the Volcker Rule

Table 6 reports the estimation results for Equation (4) capturing the impact of the Volcker Rule on the investor flows to new hedge funds. Columns (1)-(3) report the results for the first year, second to third year, and second to the fifth year flows, respectively. The coefficient of *US spin* ( $\beta_1$ ) is negative and significant with a value of -3.746 in column (1), suggesting that news funds launched by ex-bankers from US LCFIs before the Volcker Rule receive fewer flows in their first year, supporting hypothesis *H2*. After the Volcker Rule, new hedge funds' first-year flows decrease significantly, as indicated by the significant negative coefficients on *Phase1* and *Phase2* in the first column. The corresponding coefficients of -1.166 and -1.347 are also significant at the 1% level capturing the overall decline in the investor confidence in the hedge fund industry. However, new funds launched by former US LCFI bankers after the Volcker Rule receive higher flows in the first year and the effect is more pronounced during the compliance period. The corresponding loading  $\beta_2$  on the interaction term *US spin* · *Phase* is 2.780 and 7.456, respectively, both significant at the 1% level, more than offsetting the average negative effect. By contrast, the insignificant coefficients in columns (2) and (3) indicate that there are no significant differences in the flows from the second to fifth year. Results using *LCFI\_years* in columns (4)-(6) and controlling for other manager specific variables in columns (7) to (12) remain qualitatively unchanged. Overall, our results suggest that new funds launched by ex-bankers from US LCFIs after the Volcker Rule receive higher flows in the first year benefiting from the managers' reputation and/or taking their clients with them. However, this effect is short-term. No significant differences in flows are discernible beyond the first year.

[Table 6 in here]

## 4.3 Hedge fund performance and the Volcker Rule

Table 7 reports the estimation results for Equation (6) capturing possible difference in performance of hedge funds launched before and after the Volcker Rule. Columns (1) and (3) use the dummy variable indicating if a fund employs an ex-banker from US LCFIs, and columns (2) and (4) use the number of years that an ex-banker works in a US LCFI.  $\gamma_1$  coefficients on *LCFI* are insignificant in all columns, suggesting that there is no significant difference in the performance of new funds launched by ex-bankers from US LCFIs. Subsequent to the Volcker Rule, new hedge funds launched during the compliance period have significantly lower returns as indicated by negative and highly significant coefficients  $\gamma_2$  on *Phase2* in columns (1)-(4). Overall, the poor performance of new hedge funds during the compliance period seems to be envisioned by investors, resulting in lower fees during this period as shown in Table 5. The  $\gamma_3$  coefficient on *LCFI* · *Phase* are insignificant in columns (1) and (3) while positive and significant at 10% in columns (2) and (4) for *Phase2*, suggesting that funds launched by ex-bankers with more experience in US LCFIs generate higher returns during the compliance

period of the Volcker Rule. Columns (3) and (4) further shows that the immediate or prior experience in non-US LCFIs and prior experience in US LCFIs do not result in any differences in fund performance.

[Table 7 in here]

## 4.4 Hedge fund risks and the Volcker Rule

Table 8 reports the estimation results for Equation (7) capturing the impact of Volcker Rule implementation on new hedge fund risk-taking and liquidation probability. Subsequent to the Volcker Rule, all new funds launched during both the implementation and compliance period have lower idiosyncratic risk (negative and highly significant  $\beta_2$  on both *Phase1* and *Phase2* in columns (2), (5), (8), and (11)). Hedge funds launched during the compliance period of the Volcker Rule also have a lower probability of liquidation (significantly negative coefficient  $\beta_3$  on *Phase2* in columns (3), (6), (9), and (12)), indicating an overall movement of new funds into less risky strategies. Funds launched by ex-bankers from US LCFIs also exhibit lower levels of systematic risk as indicated by the significantly negative coefficient  $\beta_1$  on *LCFI* in columns (1), (4), (7), and (10). However, we do not find strong evidence of any significant changes in funds' risks or their liquidation probability after the Volcker Rule. Overall, there is no evidence that former bankers that left US LCFIs before the Volcker Rule differ inherently from those that left subsequent to the Rule in terms of their risk-taking behaviour.

[Table 8 in here]

## 5 Robustness tests

### 5.1 Propensity score matching

Our first robustness test addresses the concern that the differences between funds launched by ex-bankers and other new funds are related to funds' characteristics such as redemption period, initial size, and strategy. In this section, we use propensity score matching (PSM) to examine future performance, flows, and risks of funds launched by ex-bankers, in comparison with a matched control sample of other new funds launched during the same period. We implement PSM in four steps using new funds launched during the pre-Volcker, implementation, and compliance periods, respectively. In the first step, we utilize probit regression where the binary dependent variable is one for funds launched by ex-bankers from US LCFIs and zero for other new funds. This allows the identification of fund characteristics that are more likely to be associated with funds launched by ex-bankers. We include a number of fund characteristics that

are decided upon when a new fund is launched, including the fund’s initial size, redemption and subscription periods, whether the fund has a female manager, is managed by a team, and whether managers have previous work experience in investment management, financial service, research, non-financial industry, and/or government. In the second step, we obtain each fund’s propensity score based on the probability that a fund with given characteristics is a fund launched by ex-bankers. We also add 10 times strategy to the pscore, which guarantees that only funds belong to the same strategy are matched. In the third step, funds launched by ex-bankers and other new funds are matched using one-to-one matching without replacement. We retain only those matches for which the difference in the score is smaller than 0.05. In the final step, we estimate the average treatment effect (ATT) and employ t-tests to compare the fee structures, flows, returns, and risks within three years after a fund is launched of matched funds launched by ex-bankers and other new funds. In particular, we compare the management, incentive fees and the use of high-water mark, the average flow in the first, second, and third year, respectively, the average return during the first 3 years, and the systematic and idiosyncratic risk of each hedge fund.

Table 9 reports the estimation result of the ATT. During the pre-Volcker period, funds launched by ex-bankers from US LCFIs charge significantly higher incentive fees and are more likely to use the high-water mark as compared to other new funds. The corresponding ATT are 2.797 and 0.171, both significant at the 5% level, a finding which is consistent with our regression results. During the implementation period, funds launched by ex-bankers also are more likely to use the high-water mark and exhibit lower systematic risk. During the compliance period of the Volcker Rule, funds launched by ex-bankers charge significantly higher management fees (1.705% versus 1.000%). The ATT is significant at the % level. Overall, the PSM results support our main results that there is a change in the fee structure for funds launched by ex-bankers from US LCFIs after the Volcker Rule. Table 10 reports the balancing matching results of our propensity score matching procedures. The t-statistics show that the treated and control groups are indistinguishable along with all the characteristics after the matching.

[Table 9 and 10 in here]

## 6 Conclusion

The extensive media coverage of hedge fund managers, particularly of designated ‘star’ managers, suggests an important role for external perceptions of managerial human capital in fund management. In this paper, we study the impact of the Volcker Rule on the supply of human capital in the hedge fund industry and their subsequent remuneration and performance. We analyze new hedge funds launched by ex-bankers who leave US LCFIs following the Volcker Rule’s ban on proprietary trading by banking entities. Our focus is upon new funds’ fee structure, capital flows, performance, risk-taking, and their probability of liquidation, and how

these change after the Volcker Rule. Our key findings show that while there appears to be a difference in investors' perception of funds launched by former bankers from US LCFIs, there is no actual discernible difference in fund performance. On the one hand, funds launched by former bankers after the Volcker Rule charge higher management fees and receive higher flows in the first year, potentially benefiting from their reputation and prior connections. On the other hand, these funds reveal no significant differences in their performance, risk-taking, and liquidation probability.

Specifically, we find that funds launched by ex-bankers before the Volcker Rule receive significantly lower capital flows in their first year in comparison to other new hedge funds launched during the same period. In addition, those funds charge significantly higher incentive fees and are more likely to use a high-water mark to signal their skills, supporting the signaling theory in Gompers and Lerner (1999) and Deuskar et al. (2011b). Those funds also have lower systematic risk, but exhibit no differences in performance, idiosyncratic risk, and liquidation probability. After the Volcker Rule, when star proprietary traders are forced to leave US LCFIs, funds launched by ex-bankers receive significantly higher flows in the first year. At the same time, these funds switch to a fee structure with higher management fees and are less likely to use a high-water mark. However, there are no significant differences in either long-term flows or returns, risks, and liquidation probability. Overall, this suggests that the trading performance of previous star traders regresses to the mean.

Our paper highlights the importance of reputation for managerial income in the hedge fund industry. Following the Volcker Rule, ex-bankers from US LCFIs who launch new hedge funds earn an additional 162,000 USD during the first year, attributable to higher management fees, without rewarding their investors with higher returns.

Table 1: Variable Description

This table describes the variables used in this paper in alphabetical order.

Variables	Description
Age	The age of a hedge fund.
AUM	The asset under management of a hedge fund.
CREDIT	The change in Moody's Baa yield over the 10-year Treasury constant maturity yield.
Family	A dummy variable equals 1 if a hedge fund belongs to a multi-fund family.
Female	A dummy variable equals 1 if a hedge fund has a female manager.
Financial Service	A dummy variable equals 1 if a fund has at least one manager who has financial service work experience.
Flow	The flows to a hedge fund derived by Equation (5).
$\overline{Flow}$	The average annual flow for a hedge fund.
Government	A dummy variable equals 1 if a fund has at least one manager who has work experience in a government.
HWM	A dummy variable equals 1 if a high-water mark is present.
IncFee	The incentive fee a hedge fund charges.
Industry	A dummy variable equals 1 if a fund has at least one manager who has work experience in non-financial industries.
Investment Management	A dummy variable equals 1 if a fund has at least one manager who has investment management work experience.
IRisk	The idiosyncratic risk of a hedge fund derived by equation (10).
Leverage	A dummy variable equals 1 if a hedge fund uses leverage, and 0 otherwise.
Liquidation	A dummy variable equals 1 if a hedge fund liquidates within 5 years, and 0 otherwise.
LockUp	A hedge fund's lockup period.
MgtFee	The management fee a hedge fund charges.
MKT	The Standard & Poors (S&P) 500 index total return.
NonUS experience	A dummy variable equals 1 if a fund has at least one manager who has work experience in a non-US LCFI.
NonUS spin	A dummy variable equals 1 if a fund has at least one manager whose last employer is a non-US LCFI before starting the new fund.
NonUS years	A dummy variable equals the number of years worked in a non-US LCFI for spin-off managers.
Phase1	A dummy variable equals 1 from July 2011 to March 2014, and 0 otherwise.
Phase2	A dummy variable equals 1 from April 2014 to March 2016, and 0 otherwise.
PTFSBD	The bond trend-following factor in Fung and Hsieh, 2001.
PTFSCOM	The currency trend-following factor in Fung and Hsieh, 2001.
PTFSFX	The commodity trend-following factor in Fung and Hsieh, 2001.
Redemption	A hedge fund's redemption period.
Research	A dummy variable equals 1 if a fund has at least one manager who has research related work experience.
Ret	The reported return for a hedge fund.
SMB	The difference between the Russell 2000 index total return and the S&P 500 total return.
SRisk	The systematic risk of a hedge fund derived by equation (11).
STD	The standard deviation of monthly returns for a hedge fund.
StyleEffect	The average flow into hedge funds from the same style category.
Subscription	A hedge fund's subscription period.
Team	A dummy variable equals 1 if a hedge fund is managed by a team.
TERM	The change in the 10-year Treasury constant maturity yield.
US experience	A dummy variable equals 1 if a fund has at least one manager who has work experience in a US LCFI.
US spin	A dummy variable equals 1 if a fund has at least one manager whose last employer is a US LCFI before starting the new fund.
US years	A dummy variable equals the number of years worked in a US LCFI for spin-off managers.

Table 2: Summary statistics for new hedge funds' returns

This table reports the descriptive statistics of the first 36 monthly returns in percent of new funds launched between July 2009 and March 2016. The 'Pre-Volcker period' is from July 2009 to June 2011, the 'Implementation period' is from July 2011 to March 2014, and the 'Compliance period' is from April 2014 to March 2016. US (Non-US) spin includes funds that have at least one manager whose last employer is a US (Non-US) LCFI before starting the new fund, and Other funds include other new independent funds. The t-tests in mean difference between US (Non-US) spin funds and Other funds are conducted. \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% levels respectively.

Category	Mean	Median	SD	Skewness	Kurtosis	Min.	Max.	N
Panel A: Pre-Volcker period								
US spin	0.839	0.865	3.000	0.238	5.454	-6.318	9.076	35
Non-US spin	0.291**	0.024	4.295	0.090	5.296	-9.160	11.276	30
Other funds	0.739	0.747	3.620	-0.137	4.605	-8.093	9.548	615
Total	0.726	0.723	3.620	-0.110	4.678	-8.054	9.600	678
Panel B: Implementation period								
US spin	0.780	0.826	2.539	-0.049	4.542	-5.269	6.758	38
Non-US spin	0.740	0.681	2.069	-0.019	4.383	-4.192	5.700	26
Other funds	0.731	0.648	3.521	0.021	4.278	-7.120	10.128	742
Total	0.732	0.656	3.429	0.014	4.294	-6.945	9.827	804
Panel C: Compliance period								
US spin	0.987	0.958	3.098	-0.150	5.898	-7.136	8.016	14
Non-US spin	0.564	0.532	2.699	-0.047	4.571	-5.769	6.878	16
Other funds	0.702	0.580	3.361	0.019	4.530	-6.919	9.283	412
Total	0.706	0.590	3.328	0.011	4.575	-6.884	9.156	442

Table 3: Summary statistics of new hedge funds' flows

This table reports the descriptive statistics of the first 36 monthly flows in percent of new funds launched between July 2009 and March 2016. The 'Pre-Volcker period' is from July 2009 to June 2011, the 'Implementation period' is from July 2011 to March 2014, and the 'Compliance period' is from April 2014 to March 2016. US (Non-US) spin includes funds that have at least one manager whose last employer is a US (Non-US) LCFI before starting the new fund, and Other funds include other new independent funds. The t-tests in mean difference between US (Non-US) spin funds and Other funds are conducted. \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% levels respectively.

Category	Mean	Median	SD	Skewness	Kurtosis	Min.	Max.	N
Panel A: Pre-Volcker period								
US spin	4.035	0.163	22.104	2.013	12.677	-19.744	113.384	35
Non-US spin	9.185**	1.435	41.315	1.973	12.205	-28.172	219.698	30
Other funds	4.299	-0.084	23.270	1.765	11.473	-22.201	104.404	615
Total	4.503	-0.007	24.021	1.789	11.573	-22.368	109.905	678
Panel B: Implementation period								
US spin	4.650	1.018	16.461	2.010	11.885	-17.602	76.252	38
Non-US spin	5.017	0.708	22.089	2.083	14.986	-19.308	108.185	26
Other funds	4.965	0.335	24.674	2.033	12.798	-22.521	113.684	742
Total	4.924	0.378	24.083	2.027	12.795	-22.217	110.990	804
Panel C: Compliance period								
US spin	7.914	0.900	39.159	3.256	20.633	-20.255	213.840	14
Non-US spin	5.294	1.773	15.977	2.332	11.900	-11.375	76.818	16
Other funds	5.265	0.750	23.509	1.963	12.500	-20.402	111.583	412
Total	5.353	0.796	23.720	2.021	12.746	-20.030	113.550	442

Table 4: Summary statistics of new hedge funds' characteristics

This table reports the descriptive statistics of new funds launched between July 2009 and March 2016 including: management fee (*MgtFee* in percent), incentive fee (*IncFee* in percent), use of high-water mark (*HWM*), redemption period (in months), subscription period (in months), lock-up period (in months), use of leverage (*Leverage*), fund age (in years), assets under management at origination (*AuM\_first* in million USD), and the percentage of funds with the life span more than 5 years (*Survival* in percent). The 'Pre-Volcker period' is from July 2009 to June 2011, the 'Implementation period' is from July 2011 to March 2014, and the 'Compliance period' is from April 2014 to March 2016. The t-tests in mean difference between US (Non-US) spin funds and Other funds are conducted. \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% levels respectively.

	MgtFee	IncFee	HWM	Redemption	Subscription	Lockup	Leverage	Age	AuM_first	Survival	N
Panel A: Pre-Volcker period											
US spin	1.608	18.422*	0.971***	1.717**	0.889**	4.441**	0.657**	6.498	45.114	0.314	35
Non-US spin	1.595	15.093	0.700	1.077	0.720	1.607	0.500	6.739	152.300	0.233	30
Other funds	1.491	16.573	0.733	1.148	0.706	2.254	0.498	6.724	96.420	0.285	615
Total	1.502	16.600	0.743	1.177	0.717	2.345	0.507	6.721	96.527	0.282	678
Panel B: Implementation period											
US spin	1.439	17.778**	0.921***	1.736***	0.822	1.676	0.697*	5.684	42.714	0.237*	38
Non-US spin	1.421	16.563	0.846	1.633	0.946**	3.500	0.692	5.599	25.231	0.231	26
Other funds	1.440	15.305	0.739	1.120	0.682	2.214	0.580	5.472	62.370	0.341	742
Total	1.438	15.448	0.750	1.165	0.696	2.234	0.589	5.488	60.240	0.332	804
Panel C: Compliance period											
US spin	1.712**	15.385	0.786	1.364	0.793*	5.615**	0.500	3.393**	32.214	0.214	14
Non-US spin	1.294	13.750	0.625*	1.025	0.650	2.375	0.786*	3.552	176.313	0.063	16
Other funds	1.331	14.283	0.769	1.028	0.609	2.204	0.605	3.727	103.029	0.160	412
Total	1.341	14.297	0.765	1.039	0.617	2.313	0.608	3.710	103.439	0.158	442



Table 5: The fee structure of hedge funds launched before and after the Volcker Rule

This table reports the fee structure of new funds launched between July 2009 and March 2016. *MgtFee* is the management fee a fund charges, *IncFee* is the incentive fee a fund charges, and *HWM* equals 1 if a high-water mark provision is present. *US (NonUS) spin* equals 1 if a fund has a manager whose last employer is a US (non-US) LCFI, and *LCFI\_years* equals the number of years in a US LCFI for ex-bankers. *US (NonUS) experience* equals 1 if a fund has a manager who previously worked in a US (non-US) LCFI. *Phase1* and *Phase2* equal one for funds launched between July 2011 to March 2014 and April 2014 to March 2016, respectively. Standard errors are reported in brackets. \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% levels, respectively.

<i>LCFI</i> =	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	MgtFee	<i>US_spin</i> IncFee	HWM	MgtFee	<i>LCFI_years</i> IncFee	HWM	MgtFee	<i>US_spin</i> IncFee	HWM	MgtFee	<i>LCFI_years</i> IncFee	HWM
<i>LCFI</i> ( $\beta_1$ )	0.112 (0.070)	1.918*** (0.594)	2.527** (1.019)	0.009 (0.009)	0.209** (0.088)	0.315 (0.205)	0.123* (0.074)	2.960*** (0.706)	2.714*** (1.021)	0.010 (0.009)	0.317*** (0.098)	0.339* (0.206)
<i>Phase1</i> ( $\beta_2$ )	-0.058* (0.032)	-1.170*** (0.424)	0.054 (0.121)	-0.061* (0.032)	-1.166*** (0.419)	0.052 (0.122)	-0.051 (0.033)	-1.206*** (0.431)	0.041 (0.125)	-0.055* (0.033)	-1.218*** (0.427)	0.036 (0.125)
<i>Phase2</i> ( $\beta_2$ )	-0.166*** (0.039)	-2.241*** (0.521)	0.175 (0.144)	-0.167*** (0.039)	-2.283*** (0.517)	0.158 (0.144)	-0.154*** (0.040)	-2.181*** (0.524)	0.260* (0.150)	-0.155*** (0.039)	-2.235*** (0.520)	0.240 (0.150)
<i>LCFI-Phase1</i> ( $\beta_3$ )	0.070 (0.111)	0.594 (0.526)	1.019 (1.124)	0.009 (0.008)	0.088 (0.088)	0.205 (0.205)	0.074 (0.074)	0.706 (0.706)	1.021 (1.021)	0.009 (0.009)	0.098 (0.098)	0.206 (0.206)
<i>LCFI-Phase2</i> ( $\beta_3$ )	0.103 (0.270)**	0.878 (2.124)	1.186 (1.215)	0.012 (0.021)	0.137 (0.308)	0.220 (0.236)	0.104 (0.118)	0.947 (2.172)	1.185 (1.260)	0.012 (0.020)	0.145 (0.298)	0.220 (0.241)
NonUS_spin												
NonUS_spin.Phase1												
NonUS_spin.Phase2												
US_experience												
NonUS_experience												
Constant	1.496*** (0.023)	16.504*** (0.313)	0.909*** (0.089)	1.499*** (0.023)	16.539*** (0.309)	1.014*** (0.089)	1.490*** (0.048)	16.359*** (0.688)	0.846*** (0.192)	1.491*** (0.048)	16.414*** (0.693)	0.865*** (0.192)
R-squared	0.013	0.015	0.011	0.013	0.014	0.007	0.017	0.038	0.027	0.016	0.035	0.023
Number of HF's	1,822	1,828	1,924	1,822	1,828	1,924	1,822	1,828	1,924	1,822	1,828	1,924
Other manager specific controls	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes

Table 6: Flows to hedge funds launched before and after the Volcker Rule

This table reports the flows to new funds launched between July 2009 and March 2016.  $US (NonUS) spin$  equals 1 if a fund has a manager whose last employer is a US (non-US) LCFI, and  $LCFI\ years$  equals the number of years in a US LCFI for ex-bankers.  $US (NonUS) experience$  equals 1 if a fund has a manager who previously worked in a US (non-US) LCFI.  $Phase1$  and  $Phase2$  equal one for funds launched between July 2011 to March 2014 and April 2014 to March 2016, respectively. Standard errors are reported in brackets. \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% levels, respectively.

$LCFI =$	(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)		(9)		(10)		(11)		(12)	
	Flow	Year 1	Year 2-3	$US\ spin$	Year 2-3	Year 2-5	Year 1	Year 2-3	$LCFI\ years$	Year 2-3	Year 2-5	Year 1	Year 2-3	$US\ spin$	Year 1	Year 2-3	Year 2-5	Year 1	Year 2-3	$LCFI\ years$	Year 1	Year 2-3	Year 2-5	
$LCFI(\beta_1)$	-3.746*** (0.157)	-0.054 (1.963)	-0.349 (2.168)	-0.404*** (0.022)	0.055 (0.272)	-0.010 (0.297)	-3.920*** (0.163)	0.438 (2.029)	0.055 (0.272)	-0.010 (0.297)	-0.151 (2.241)	-0.342*** (0.023)	0.121 (0.280)	0.438 (2.029)	-0.151 (2.241)	-0.342*** (0.023)	0.121 (0.280)	-0.016 (0.306)	-0.342*** (0.023)	0.121 (0.280)	-0.016 (0.306)	-0.342*** (0.023)	0.121 (0.280)	-0.016 (0.306)
$Phase1(\beta_2)$	-1.166*** (0.048)	-0.318 (0.603)	-0.280 (0.665)	-1.130*** (0.048)	-0.298 (0.599)	-0.274 (0.661)	-1.345*** (0.049)	-0.035 (0.618)	-0.298 (0.599)	-0.274 (0.661)	-0.034 (0.681)	-1.288*** (0.049)	-0.024 (0.613)	-0.035 (0.618)	-1.345*** (0.049)	-0.024 (0.613)	-0.034 (0.681)	-0.045 (0.676)	-1.288*** (0.049)	-0.024 (0.613)	-0.045 (0.676)	-1.288*** (0.049)	-0.024 (0.613)	-0.045 (0.676)
$Phase2(\beta_2)$	-1.347*** (0.057)	-0.227 (0.712)	-0.376 (0.824)	-1.348*** (0.056)	-0.195 (0.708)	-0.359 (0.820)	-1.462*** (0.058)	0.025 (0.732)	-0.195 (0.708)	-0.359 (0.820)	-0.285 (0.845)	-1.445*** (0.058)	0.063 (0.728)	0.025 (0.732)	-1.445*** (0.058)	0.063 (0.728)	-0.285 (0.845)	-0.265 (0.841)	-1.445*** (0.058)	0.063 (0.728)	-0.265 (0.841)	-1.445*** (0.058)	0.063 (0.728)	-0.265 (0.841)
$LCFI\ Phase1(\beta_3)$	2.780*** (0.219)	0.533 (2.715)	0.785 (2.980)	0.366*** (0.029)	0.017 (0.356)	0.101 (0.389)	2.474*** (0.220)	0.490 (2.717)	0.017 (0.356)	0.101 (0.389)	0.930 (2.980)	0.281*** (0.029)	0.018 (0.358)	0.490 (2.717)	0.930 (2.980)	0.281*** (0.029)	0.018 (0.358)	0.169 (0.391)	0.281*** (0.029)	0.018 (0.358)	0.169 (0.391)	0.281*** (0.029)	0.018 (0.358)	0.169 (0.391)
$LCFI\ Phase2(\beta_3)$	7.456*** (0.286)	4.259 (3.529)	3.127 (4.229)	1.680*** (0.052)	0.813 (0.645)	0.640 (0.799)	7.356*** (0.286)	4.275 (3.526)	0.813 (0.645)	0.640 (0.799)	3.265 (4.223)	1.650*** (0.052)	0.803 (0.644)	4.275 (3.526)	3.265 (4.223)	1.650*** (0.052)	0.803 (0.644)	0.624 (0.798)	1.650*** (0.052)	0.803 (0.644)	0.624 (0.798)	1.650*** (0.052)	0.803 (0.644)	0.624 (0.798)
NonUS.spin							-1.332*** (0.172)	5.162*** (2.137)			4.627* (2.366)	-1.328*** (0.172)	5.152*** (2.137)	-1.332*** (0.172)	5.162*** (2.137)	-1.328*** (0.172)	4.612* (2.367)	-1.328*** (0.172)	5.152*** (2.137)	4.612* (2.367)	-1.328*** (0.172)	5.152*** (2.137)	4.612* (2.367)	-1.328*** (0.172)
NonUS.spin.Phase1							2.696*** (0.244)	-4.621 (3.011)			-4.327 (3.334)	2.742*** (0.244)	-4.593 (3.011)	2.696*** (0.244)	-4.621 (3.011)	2.742*** (0.244)	-4.295 (3.334)	2.742*** (0.244)	-4.593 (3.011)	-4.295 (3.334)	2.742*** (0.244)	-4.593 (3.011)	-4.295 (3.334)	2.742*** (0.244)
NonUS.spin.Phase2							1.970*** (0.271)	-5.024 (3.335)			-5.163 (3.927)	2.107*** (0.271)	-5.045 (3.334)	1.970*** (0.271)	-5.024 (3.335)	2.107*** (0.271)	-5.169 (3.927)	2.107*** (0.271)	-5.045 (3.334)	-5.169 (3.927)	2.107*** (0.271)	-5.045 (3.334)	-5.169 (3.927)	2.107*** (0.271)
US.experience							0.442*** (0.050)	-0.934 (0.621)			-0.810 (0.697)	0.190*** (0.049)	-0.948 (0.612)	0.442*** (0.050)	-0.934 (0.621)	0.190*** (0.049)	-0.827 (0.687)	0.190*** (0.049)	-0.948 (0.612)	-0.827 (0.687)	0.190*** (0.049)	-0.948 (0.612)	-0.827 (0.687)	0.190*** (0.049)
NonUS.experience							0.607*** (0.054)	0.429 (0.665)			0.388 (0.742)	0.575*** (0.054)	0.461 (0.667)	0.607*** (0.054)	0.429 (0.665)	0.575*** (0.054)	0.407 (0.744)	0.575*** (0.054)	0.461 (0.667)	0.407 (0.744)	0.575*** (0.054)	0.461 (0.667)	0.407 (0.744)	0.575*** (0.054)
Constant	5.069*** (0.184)	8.267*** (1.395)	6.994*** (1.516)	5.125*** (0.184)	8.257*** (1.394)	6.993*** (1.515)	3.339*** (0.200)	8.983*** (1.602)	8.257*** (1.394)	6.993*** (1.515)	8.430*** (1.751)	3.376*** (0.200)	8.921*** (1.603)	8.983*** (1.602)	8.430*** (1.751)	3.376*** (0.200)	8.433*** (1.753)	8.430*** (1.751)	3.376*** (0.200)	8.921*** (1.603)	8.433*** (1.753)	3.376*** (0.200)	8.921*** (1.603)	8.433*** (1.753)
R-squared	0.018	0.077	0.032	0.019	0.078	0.032	0.023	0.076	0.019	0.032	0.030	0.023	0.076	0.019	0.032	0.030	0.030	0.023	0.076	0.030	0.023	0.076	0.030	0.023
Number of HF's	1,451	1,420	1,420	1,451	1,420	1,420	1,451	1,420	1,420	1,420	1,420	1,451	1,420	1,451	1,420	1,420	1,420	1,420	1,451	1,420	1,420	1,451	1,420	1,420
Other manager specific controls	No	No	No	No	No	No	Yes	No	No	No	Yes	Yes	Yes	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Other HF specific controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 7: The performance of hedge funds launched before and after the Volcker Rule

This table reports the performance of new funds launched between July 2009 and March 2016. *US (NonUS) spin* equals 1 if a fund has a manager whose last employer is a US (non-US) LCFI, and *LCFI years* equals the number of years in a US LCFI for ex-bankers. *US (NonUS) experience* equals 1 if a fund has a manager who previously worked in a US (non-US) LCFI. *Phase1* and *Phase2* equal one for funds launched between July 2011 to March 2014 and April 2014 to March 2016, respectively. Standard errors are reported in brackets. \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% levels, respectively.

<i>LCFI =</i>	(1) <i>US_spin</i>	(2) <i>LCFI_years</i>	(3) <i>US_spin</i>	(4) <i>LCFI_years</i>
LCFI ( $\gamma_1$ )	0.061 (0.125)	0.007 (0.018)	0.113 (0.129)	0.010 (0.019)
Phase1 ( $\gamma_2$ )	0.038 (0.049)	0.035 (0.048)	0.032 (0.048)	0.027 (0.048)
Phase2 ( $\gamma_2$ )	-0.266*** (0.056)	-0.272*** (0.056)	-0.281*** (0.053)	-0.288*** (0.053)
LCFI·Phase1 ( $\gamma_3$ )	0.008 (0.157)	0.008 (0.021)	-0.009 (0.156)	0.009 (0.021)
LCFI·Phase2 ( $\gamma_3$ )	0.258 (0.309)	0.095 (0.079)	0.234 (0.309)	0.095 (0.079)
NonUS_spin			-0.263 (0.275)	-0.265 (0.275)
NonUS_spin·Phase1			0.298 (0.290)	0.301 (0.291)
NonUS_spin·Phase2			0.250 (0.305)	0.256 (0.305)
US_experience			-0.032 (0.047)	-0.035 (0.046)
NonUS_experience			-0.003 (0.043)	0.002 (0.043)
Constant	0.485*** (0.090)	0.489*** (0.090)	0.509*** (0.100)	0.509*** (0.100)
R-squared	0.0422	0.0422	0.0422	0.0422
Number of HFs	1,420	1,420	1,420	1,420
Fung and Hsieh 7 factors	Yes	Yes	Yes	Yes
Strategy fixed effect	Yes	Yes	Yes	Yes
Other manager specific controls	No	No	Yes	Yes
Other HF specific controls	Yes	Yes	Yes	Yes

Table 8: The risk and liquidation probability of hedge funds launched before and after the Volcker Rule

This table reports the risk and liquidation probability of new funds launched between July 2009 and March 2016.  $SRisk$  and  $IRisk$  are the systematic risk and idiosyncratic risk of a hedge fund.  $Liquidation$  equals 1 if a fund is liquidated within 5 years.  $US (NonUS) spin$  equals 1 if a fund has a manager whose last employer is a US (non-US) LCFI, and  $LCFI\ years$  equals the number of years in a US LCFI for ex-bankers.  $US (NonUS) experience$  equals 1 if a fund has a manager who previously worked in a US (non-US) LCFI.  $Phase1$  and  $Phase2$  equal one for funds launched between July 2011 to March 2014 and April 2014 to March 2016, respectively. Standard errors are reported in brackets. \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% levels, respectively.

$LCFI =$	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	SRisk	$US\_spin$ IRisk	Liquidation	SRisk	$LCFI\_years$ IRisk	Liquidation	SRisk	$US\_spin$ IRisk	Liquidation	SRisk	$LCFI\_years$ IRisk	Liquidation
LCFI ( $\beta_1$ )	-0.652** (0.295)	0.014 (0.011)	-0.202 (0.496)	-0.083** (0.039)	0.002* (0.001)	-0.133* (0.080)	-0.724** (0.356)	0.017 (0.011)	-0.289 (0.535)	-0.110** (0.048)	0.003** (0.001)	-0.155* (0.083)
Phase1 ( $\beta_2$ )	0.012 (0.226)	-0.485*** (0.004)	0.229 (0.140)	0.009 (0.224)	-0.485*** (0.004)	0.196 (0.139)	0.121 (0.222)	-0.485*** (0.004)	0.249* (0.145)	0.116 (0.220)	-0.485*** (0.004)	0.212 (0.143)
Phase2 ( $\beta_3$ )	-0.123 (0.220)	-0.484*** (0.004)	-0.693*** (0.185)	-0.124 (0.218)	-0.484*** (0.004)	-0.693*** (0.183)	-0.102 (0.212)	-0.483*** (0.004)	-0.696*** (0.191)	-0.104 (0.211)	-0.483*** (0.004)	-0.698*** (0.189)
LCFI-Phase1 ( $\beta_3$ )	-0.294 (0.426)	-0.010 (0.016)	-0.275 (0.700)	-0.014 (0.051)	-0.002 (0.002)	0.109 (0.099)	-0.263 (0.405)	-0.011 (0.015)	-0.262 (0.715)	0.004 (0.051)	-0.002 (0.002)	0.123 (0.101)
LCFI-Phase2 ( $\beta_3$ )	0.379 (0.745)	-0.025 (0.020)	0.870 (0.853)	0.083 (0.180)	-0.006** (0.003)	0.177 (0.178)	0.262 (0.757)	-0.027 (0.020)	0.830 (0.839)	0.057 (0.185)	-0.007** (0.003)	0.160 (0.167)
NonUS_spin							1.264 (1.037)	0.009 (0.010)	-0.297 (0.619)	1.271 (1.037)	0.009 (0.010)	-0.295 (0.622)
NonUS_spin-Phase1							-2.466*** (1.062)	-0.001 (0.014)	-0.328 (0.850)	-2.483** (1.061)	-0.001 (0.014)	-0.323 (0.853)
NonUS_spin-Phase2							-1.620 (1.176)	-0.023 (0.020)	-0.779 (1.219)	-1.604 (1.176)	-0.023 (0.020)	-0.802 (1.220)
US_experience							0.265 (0.324)	-0.003 (0.004)	0.135 (0.154)	0.243 (0.316)	-0.002 (0.004)	0.158 (0.151)
NonUS_experience							-0.313 (0.252)	-0.002 (0.004)	0.023 (0.163)	-0.332 (0.251)	-0.002 (0.004)	0.007 (0.163)
Constant	3.373*** (0.138)	1.050*** (0.003)	-0.995*** (0.266)	3.364*** (0.137)	1.050*** (0.003)	-0.983*** (0.266)	3.584*** (0.297)	1.053*** (0.005)	-0.734** (0.328)	3.583*** (0.299)	1.053*** (0.005)	-0.700** (0.328)
R-squared	0.002	0.917	0.060	0.001	0.917	0.060	0.016	0.918	0.068	0.016	0.918	0.069
Number of HF's	1,924	1,924	1,391	1,924	1,924	1,391	1,924	1,924	1,391	1,924	1,924	1,391
Other manager specific controls	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Other HF specific controls	No	No	Yes	No	No	Yes	No	No	Yes	No	No	Yes

Table 9: Propensity score matching results

This table reports the propensity matching results for new funds launched between July 2009 and March 2016. US spin includes funds that have at least one manager whose last employer is a US LCFI before starting the new fund and Others include other new hedge funds launched during the same period. The ‘Pre-Volcker period’ is from July 2009 to June 2011, the ‘Implementation period’ is from July 2011 to March 2014, and the ‘Compliance period’ is from April 2014 to March 2016. *Ret* is the first 36 monthly returns. *Flow*<sub>1</sub>, *Flow*<sub>2</sub>, and *Flow*<sub>3</sub> are the average flow for a hedge fund in the first, second, and third year, respectively. *SRisk* and *IRisk* are the systematic and idiosyncratic risk of a hedge fund, respectively. \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% levels, respectively.

	US spin	Others	Differences	t-stats
Panel A: Pre-Volcker period				
MgtFee	1.608	1.550	0.058	0.54
IncFee	18.422	15.625	2.797	2.08**
HWM	0.971	0.800	0.171	2.31**
Flow <sub>1</sub>	6.836	9.252	-2.416	-0.60
Flow <sub>2</sub>	2.741	2.323	0.418	0.19
Flow <sub>3</sub>	1.578	3.507	-1.930	-0.74
Return	0.838	0.742	0.097	0.47
SRisk	2.732	2.122	0.610	1.61
IRisk	1.064	1.050	0.014	0.92
Panel B: Implementation period				
MgtFee	1.416	1.539	-0.123	-0.75
IncFee	17.581	16.935	0.645	0.45
HWM	0.939	0.758	0.182	2.10**
Flow <sub>1</sub>	5.693	0.694	4.999	1.41
Flow <sub>2</sub>	3.097	1.209	1.888	1.29
Flow <sub>3</sub>	2.599	-1.231	3.830	1.21
Return	0.737	0.702	0.036	0.22
SRisk	2.430	3.383	-0.953	-2.04**
IRisk	0.573	0.559	0.014	0.84
Panel C: Compliance period				
MgtFee	1.705	1.000	0.705	2.93***
IncFee	15.000	17.955	-2.955	-0.83
HWM	0.750	0.917	-0.167	-1.08
Flow <sub>1</sub>	9.823	5.197	4.626	0.88
Flow <sub>2</sub>	4.971	10.921	-5.950	-0.64
Flow <sub>3</sub>	9.480	2.285	7.196	0.71
Return	0.964	0.866	0.099	0.22
SRisk	2.858	2.574	0.284	0.26
IRisk	0.566	0.553	0.013	0.47

Table 10: Balancing tests of propensity score matching

This table reports the balancing test results of propensity score matching. The treated group includes funds launched by ex-bankers from US LCFIs and the Control group includes other funds. The ‘Pre-Volcker period’ is from July 2009 to June 2011, the ‘Implementation period’ is from July 2011 to March 2014, and the ‘Compliance period’ is from April 2014 to March 2016. *AUM\_first* are the assets under management at origination (in million USD), *MgtFee* is the management fee (in percent), *IncFee* is the incentive fee (in percent), *Redemption* is the redemption period (in months), *Subscription* is the subscription period (in months), *Strategy* is the strategy category a fund belongs to, *Female* equals one if a fund has a female manager, *Team* equals one if a fund is managed by a team, *Investment Management*, *Financial Service*, *Research*, *Industry*, and *Government* equals one if a fund manager has investment management, financial service, research, non-financial industry, and government work experience. \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% levels, respectively.

Variables	Pre-Volcker period			Implementation period			Compliance period			
	Treated	Control	%bias	Treated	Control	%bias	Treated	Control	%bias	
AUM_first	45.114	43.143	0.200	43.061	105.120	-27.400	35.083	14.583	10.500	1.39
Redemption	1.717	1.605	6.200	1.704	1.559	7.600	1.092	1.378	-22.100	-0.62
Subscription	0.889	0.975	-17.200	0.795	0.801	-1.100	0.758	0.711	10.100	0.27
Female	0.143	0.114	9.200	0.091	0.030	23.000	0.083	0.000	31.300	1
Team	0.486	0.514	-5.800	0.576	0.606	-6.100	0.417	0.417	0.000	0
InvestmentManagement	0.714	0.771	-14.500	0.848	0.818	9.200	0.33	0.750	0.833	-20.000
FinancialService	0.114	0.086	8.000	0.091	0.091	0.000	0	0.167	0.000	43.800
Research	0.057	0.057	0.000	0.091	0.152	-20.100	0.250	0.333	-19.600	-0.43
Industry	0.029	0.000	17.500	0.030	0.000	20.100	1	0.000	0.000	.
Government	0.000	0.000	.	0.000	0.000	.	0.000	0.000	0.000	.

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