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JEL Classification: F36, G15, G23, H26

Keywords: tax evasion, FATCA, Mutual funds, skills, Market Efficiency

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Introduction

It is almost a folk theorem that informed investors such as professional fund managers make the market more informationally efficient. However, being informed is an endogenous choice of these investors (Grossman and Stiglitz 1980). On the one hand, fund managers have incentives to invest in research and information when the resulting superior performance allows them to collect economic rents (Berk and Green 2004).[1] In line with the folk theorem, more information processed by funds generally enhances the price efficiency of the stock market (Gârleanu and Pedersen 2018). On the other hand, when some fund attributes (e.g., tax exposure, checking facility, family affiliation, etc.) can help attract investors, fund managers may *optimally* devote fewer resources to information and more to these attributes to achieve product differentiation.[2] In this case, even when it is possible to achieve better performance via information acquisition, fund managers may choose not to pursue it in the presence of more cost-effective alternative attributes.

Understanding when and why fund managers choose to acquire information has important implications for the efficiency of both the fund industry and the security market. It is well known that product differentiation, particularly when coupled with market frictions *à la* Diamond (1971), may allow firms to enjoy monopoly power that can distort efficiency in the spirit of Spence (1975).[3] The same classical concern may apply to mutual funds: could certain types of fund attributes and related differentiation erode the performance incentives and competitiveness of the fund industry? Moreover, if the quest for such attributes reduces information acquisition, could the efficiency of the stock market be adversely affected? Important as these questions are, it is empirically challenging to provide an answer, as we do not directly observe the *ex-ante* choice sets of fund managers.

In this paper, we aim to address the above issues by exploiting an *exogenous shock* to one of the most important and controversial attributes that may influence the performance incentives of mutual funds: facilitate offshore tax evasion. Tax evasion has critical normative implications for the modern global economy. Vast evidence shows, for instance, that offshore tax evasion reduces tax revenues (e.g.,

[1] A large body of empirical literature documents that mutual fund investors tend to chase past winners (see, e.g., Chevalier and Ellison 1997; Sirri and Tufano 1998; Barber, Huang, and Odean 2016; Berk and van Binsbergen 2016; Ben-David, Li, Rossi, and Song 2019; and Choi and Robertson 2020).

[2] Product differentiation based on these attributes is indeed common in the mutual fund industry. See, e.g., Hortaçsu and Syverson (2004) for S&P index funds and Cremers, Ferreira, Matos, and Starks (2016) for international funds. Moreover, fund flows are positively related to marketing expenses (see, e.g., Jain and Wu 2000; Barber, Odean, and Zheng 2005; Gallaher, Kaniel, and Starks 2006; Bergstresser, Chalmers, and Tufano 2009) and payment to brokers (Christoffersen, Evans, and Musto 2013). In addition, broker-sold mutual funds charge higher fees and deliver worse performance (Bergstresser, Chalmers, and Tufano 2009; Del Guercio and Reuter 2014). Sometimes, a fund's underperformance may be deliberately accepted to achieve higher flows at the aggregate family level rather than at the individual fund level, e.g., to differentiate itself in terms of non-performance-related characteristics (Massa 2003) or help other funds of the same family by engaging in cross-subsidization (Gaspar, Massa, and Matos 2006).

[3] Spence (1975) points out that monopoly power may distort the product price (with respect to the quality provided) and thus give rise to potential market failure. Diamond (1971) shows that even a small search friction may allow firms to enjoy monopoly power in setting the prices of their products. Wolinsky (1986) and Anderson and Renault (1999) further introduce product differentiation into the Diamond (1971) system, showing that high search frictions are associated with heterogeneous attributes of product reduce competition.

Hanlon, Maydew, and Thornock 2015; Johannesen et al. 2019). Worse, such a practice concentrates among the rich and thus exacerbates the issue of income inequality (Zucman 2013; Alstadsæter, Johannesen, and Zucman 2018, 2019). Moreover, a lack of transparency in tax havens facilitates the expropriation activities of corporations (e.g., Bennedsen and Zeume 2018; O'Donovan, Wagner, and Zeume 2019). Although tax evasion is relatively unexplored in the mutual fund literature, as we discuss shortly, Sialm and Zhang's (2020) recent extension of the Berk and Green (2004) model to mutual fund tax clienteles predicts that it should exert significant impacts on funds.

More explicitly, we identify the impact of tax evasion based on the implementation of the Foreign Account Tax Compliance Act (FATCA) regulation, which targets the offshore tax evasion of U.S. persons. Before the FACTA, U.S. investors could benefit from investing in offshore funds to evade U.S. taxes. By requiring Foreign Financial Institutions ("FFIs") to report directly to the Internal Revenue Service (IRS), however, the FATCA essentially reduced the tax benefits of offshore funds to U.S. investors. This regulatory shock provides an ideal setting to investigate how tax evasion-related fund attributes can influence the performance of offshore funds and the efficiency of the security market.

Before the FATCA, tax-savvy U.S. investors were likely to self-select into offshore funds to benefit from tax evasion. The attribute of tax evasion, according to the theoretical framework of Sialm and Zhang (2020), implies that offshore funds compete on after-tax returns. In other words, offshore funds deliver competitive after-tax returns and lower before-tax returns due to the value of tax evasion. After the FATCA, however, the loss of tax benefits has essentially returned the grounds of competition to before-tax returns, incentivizing offshore funds to enhance performance. Conditioning on this incentive change and the ability for fund managers to generate performance, we should expect these funds to enhance their performance after the FATCA. This prediction posits our first hypothesis on how (curbing) tax evasion may affect the performance distribution of the mutual fund industry.

Moreover, the same shock provides a unique opportunity for us to explore the potential influence of mutual funds on the efficiency of the security market. Arguably, the very question of whether and how mutual funds affect stock market efficiency can be better assessed in the presence of regulatory shocks such as the FATCA rather than just observing the equilibrium outcome of fund returns and stock prices. In our context, if the main impact of the FATCA on performance incentives of affected funds is to step up their efforts and deliver better performance, then the accompanying information acquisition and informed trading should lead to improved stock market efficiency in the spirit of Gârleanu and Pedersen (2018). Hence, our second hypothesis posits that stocks with more ownership from affected funds should exhibit higher levels of informational efficiency after the FATCA.

We test these hypotheses by focusing on the complete sample of *actively* managed global open-end equity mutual funds for the period of 2011 to 2017. Using a standard difference-in-differences setting based on the FATCA, we examine offshore funds sold to U.S. investors (i.e., the treatment group) and compare them to offshore funds not sold to U.S. investors (i.e., the control group). We first observe that

offshore funds sold to U.S. investors display a 2.78% higher net-of-fee return and 2.57% higher style-adjusted return for the three-year post-FATCA window when compared to unaffected funds. The dollar value added of affected funds also increases by $9.72 million to $13.31 million per year. In addition, FATCA-induced performance improvement does not decay over time. Our results are robust to alternative performance measures based on gross-of-fee and risk-adjusted returns, and to analyses based on propensity score-matched samples.

Collectively, these observations suggest that the FATCA indeed incentivizes managers to create more value and distribute higher net-of-fee performance to investors. These findings lend support to our first hypothesis (and thus, the model of Sialm and Zhang 2020). Importantly, they also imply that offshore mutual funds can deliver better performance *if they want to*.[4] This message sheds light on some of the most fundamental features of the mutual fund industry and the stock market. Indeed, it suggests that asset prices are inefficient, which allows affected fund managers to generate risk-adjusted performance *à la* Berk and Green (2004) instead of facing the dilemma described by Grossman and Stiglitz (1980). This inefficiency also paves the way for our later tests to detect the marginal impact of funds (via the FATCA) on the market efficiency of asset prices.

To further understand the economic mechanisms that improve fund performance, we explore cross-sectional variation in fund characteristics. First, funds domiciled in tax havens and income funds are more likely to attract tax evaders before the FATCA and thus are more sensitive to the tax regulation change. In line with the first hypothesis, we find that managers of these more tax-sensitive funds are more incentivized to enhance performance. In addition, funds domiciled in all tax havens improve their performance regardless of whether a bilateral tax information exchange agreement (TIEA) with the U.S. was signed prior to the FATCA. This observation is consistent with the view that the FATCA can more effectively reduce tax evasion by overcoming the limitations of TIEAs (e.g., information exchange is done upon request rather than automatic under TIEAs). Finally, large funds, more skilled funds (measured by a low R-square), and funds with smaller pre-FATCA flow volatility exhibit greater improvements in performance, suggesting that existing research capacities and low funding risk also help facilitate the timely adjustment of investment strategies after the FATCA.

In addition to our main results on net-of fee performance, we also investigate whether affected funds respond by playing the price card—i.e., reducing fees—to substitute for the attribute of tax evasion. Offshore funds sold to U.S. investors show 2.8 bps lower fees per year over the three-year post-FATCA window than unaffected funds, which translates into a 1.62% decline relative to the average expense ratio. Since the resulting economic magnitude is relatively small, affected funds appear to be more constrained in reducing fees. Hence, the main tradeoff triggered by the FATCA occurs between tax evasion and performance rather than between tax evasion and lower fees. Collectively, the

[4] The null hypothesis of our test states that offshore funds do not increase performance after the FATCA. This can arise under two sufficient conditions in our context, i.e., when tax evasion is not an important consideration *or* when these funds do not have skills to generate performance. The rejection of the null rejects both of its sufficient conditions.

FATCA eliminates tax-evasion-based product differentiation and motivates performance-based competition in the mutual fund industry. In this case, the joint increase in distributed returns and reduction in fees enhance the competitiveness and efficiency of the fund industry (Pedersen 2015).

Next, we examine stock market implications. If the higher performance we document above is attributable to more information collection, it could lead to higher stock market efficiency. In line with the second hypothesis, we find that stocks with higher ownership from affected funds experience improved informational efficiency, especially in terms of more timely responses to local market information. A one-standard-deviation increase in ownership by affected funds is related to 4.84% higher efficiency as measured by the delay of local market information over the three-year post-FATCA window. The delay of local market information declines across all three years, suggesting that the shift in information collection is not temporary. A placebo test based on the ownership of non-affected funds does not exhibit similar patterns around the FATCA.

In contrast, there is almost no change in the delay of global market information among both affected and unaffected funds. As suggested by Bae, Ozoguz, Tan, and Wirjanto (2012), global market information is relatively easier to obtain for foreign funds; thus, all funds might have already incorporated global information into their investments prior to the FATCA. When affected funds step up their efforts to collect information, they are likely to focus on local information, which becomes more valuable when better performance is required to compensate for the loss of tax benefits.

Finally, we examine fund flows around the FATCA. We document that offshore funds sold to U.S. investors receive 3.12% lower flows and 3.04% lower style-adjusted flows per year over the three-year post-FATCA window when compared to unaffected funds. The effect becomes more sizable after the first year of FATCA implementation, consistent with the notion that tax-savvy U.S. investors gradually withdraw from offshore funds. Capital outflows are also concentrated among funds domiciled in tax havens. Note that offshore funds witness post-FATCA outflows *despite* their enhanced efforts in information acquisition, suggesting that counterfactual outflows would have been more massive had these funds failed to improve performance. This feature justifies the choice of funds to use performance to at least partially offset the adverse impact of the FATCA on the demand of tax-savvy investors.[5]

Our main contribution is to use the implementation of the FATCA as an exogenous shock that reduces the tax advantage of offshore funds sold to U.S. investors to provide novel evidence for how the endogenous choice of funds affects fund performance and market efficiency. Indeed, the policy initiative aimed at offshore tax evasion spills over from its targeted taxpayers to their fund managers. As a result, the loss of tax benefits incentivizes offshore funds to expend more effort on information

[5] The flow-performance relationship implies that the 2.78% additional return generated by offshore funds helps reduce the outflow of approximately 0.41%. However, we need to interpret this number with caution because the investor clientele of these funds is likely to change around the FATCA—i.e., from (their original) tax-savvy investors to normal investors. Consequently, the net flow is a joint effect of withdraws made by tax-savvy investors and of inflows of new ones (e.g., attracted by performance). Since our data cannot differentiate these flows, we leave the analysis of counterfactual flows to future research as better data become available.

acquisition, which subsequently improves the efficiency of both the global mutual fund industry and stock markets.

Our findings are related to several strands of the literature. We first enrich academic and policy discussions on cross-border tax evasion. Existing studies focus on how tax evasion affects the behavior of corporations and countries' balance sheets.[6] We instead document that fighting against tax evasion may have broader impacts on the efficiency of global financial markets. Our findings have important normative implications. The "unintended" consequence on market efficiency, for instance, needs to be taken into consideration when assessing the social value/cost of the FATCA and of similar policies (e.g., the "global FATCA" of the OECD's Common Reporting Standard).

We also contribute to the literature on market efficiency and particularly to studies exploring the relationship between market efficiency and the asset management industry. It has been a long literature convention to infer stock market efficiency from mutual fund performance that investors receive.[7] Berk and Green (2004), however, point out that this inference is misleading because the equilibrium fund performance—far from indicating the price efficiency of assets—reflects the extent to which fund investors compete for managerial skills. Gârleanu and Pedersen (2018) further explore the relationship in an extended Grossman and Stiglitz (1980) model and demonstrate that market frictions can shape the two levels of efficiency associated with the fund industry and security market. In other words, the competitiveness of mutual funds and the informativeness of asset prices may share common economic grounds, an analysis of which can deepen our understanding of the micro-foundations of market efficiency. Our novelty is to show that tax evasion provides a heuristic empirical example of such economic grounds to affect the dual-efficiency of mutual funds and asset prices.

In doing so, we also contribute to the literature on mutual fund performance. Past work explores various fund characteristics that help identify skilled fund managers.[8] We instead focus on a selection mechanism through which being skilled (or informed) is an endogenous choice of fund managers, in line with the tax-framework of Sialm and Zhang (2020).[9] To cope with the empirical caveat that such

[6] See, e.g., Johannesen (2014), Hanlon, Maydew, and Thornock (2015), Omartian (2017), Bennedsen and Zeume (2018), Belnap, Thornock, and Williams (2019), Johannesen et al. (2019), Menkhoff and Miethe (2019), Casi, Spengel, and Stage (2020), and De Simone, Lester, and Markle (2020).

[7] The main idea is that the inability for mutual funds to deliever persistent performance implies that asset prices are efficieint in impounding all information. Accordingly, an extensive literature documents that average mutual funds underperform the respective benchmark and aims to infer the efficiency of the stock market or the competitiveness of the mutual fund industry from such evidence (see, e.g., Fama 1970; Malkiel 1995; Gruber 1996; Carhart 1997; Zheng 1999; Wermers 2000; Bollen and Busse 2001; Christoffersen and Musto 2002; Gil-Bazo and Ruiz-Verdú 2009; and Fama and French 2010).

[8] See, among others, industry concentration (Kacperczyk, Sialm, and Zheng 2005), latent information acquisition (Mamaysky, Spiegel, and Zhang 2008), the return gap (Kacperczyk, Sialm, and Zheng 2008), the active share (Cremers and Petajisto 2009; Petajisto 2013), R-square (Amihud and Goyenko 2013), time-varying allocation (Kacperczyk, Van Nieuwerburgh, and Veldkamp 2014), fund turnover (Pástor, Stambaugh, and Taylor 2017), herding behavior (Jiang and Verardo 2018), active fundamental performance (Jiang and Zheng 2018), and active fund overpricing (Avramov, Cheng, and Hameed 2019).

[9] Interestingly, instead of skilled funds engaging in tax management, as empirically documented in Sialm and Zhang (2020) for onshore funds, the attribute of tax evasion substitutes performance for offshore funds. The incentive difference between onshore and offshore funds is reasonable, as offshore tax evasion essentially creates a regulatory arbitrage opportunity at a scale that is unavailable to onshore tax management.

endogenous choice is unobservable, we investigate how funds react to an exogenous regulatory shock. Our approach and results complement those of existing studies based on cross-sectional analysis.

The remainder of this paper is organized as follows. Section II describes the data and the main variables used. Section III provides background information on FATCA regulation. Sections IV and V examine how mutual funds react to the FATCA in terms of performance and fees. Section VI investigates the impact on the price informativeness of underlying stocks. Section VII examines how U.S. investors react to the FATCA in terms of fund flows. A brief conclusion follows.

II. Data and Main Variables

A. Data Sources

Our data are drawn from different sources. The main database on mutual funds is the Morningstar Direct mutual fund database, which reports monthly total returns for global mutual funds. Morningstar Direct has complete coverage of open-end mutual funds worldwide beginning in the early 1990s. The database is survivorship bias-free, as it includes data on both active and defunct funds. From Morningstar, we obtain additional control variables such as fund total net assets (TNA), the expense ratio, and fund turnover. We consolidate multiple share classes into portfolios by combining share class net assets and by value-weighting share class returns, expense ratios, and turnover ratios based on one-month lagged share class TNA. The mutual fund holdings data are from the Factset/Lionshares database. Stock-level data are drawn from the Center for Research in Security Prices (CRSP), COMPUSTAT North America, and COMPUSTAT Global. All prices have been converted to U.S. dollars.

Our study focuses on actively managed equity funds. We require funds to have "Equity" as stated under the Morningstar "Broad Category Group." We also obtain information on index funds from Morningstar (i.e., "Index Funds" from the "Open End Funds Universe") to identify whether a fund is a pure index fund or an actively managed fund. We further restrict our sample to funds with TNA of at least $10 million prior to the FATCA. The sample period ranges from July 2011 to June 2017, and the final sample includes 10,079 actively managed equity mutual funds domiciled in 34 countries.

B. Main Variables

The main variables are as follows: *U.S. Sale,* defined as a dummy variable that equals 1 for offshore funds (i.e., funds not domiciled in the U.S.) sold to U.S. investors (i.e., region of sale reported as the U.S., Global Cross-Border, or Pure Offshore) and 0 for offshore funds not sold to U.S. investors; *Fund Flow,* computed as $Flow_{f,t} = \left[TNA_{f,t} - TNA_{f,t-1} \times \left(1 + r_{f,t}\right)\right]/TNA_{f,t-1}$ where $Flow_{f,t}$ refers to the fractional flow received by fund f in month t, $TNA_{f,t}$ refers to the TNA for the same month, and $r_{f,t}$ refers to fund total return for the same month; and *Fund Return* defined as the monthly net-of-fee return reported by Morningstar Direct.

Next, we define *Style-adjusted Return (STYRET)* as the fund return minus the value-weighted average return of all funds of the same investment style. We also consider risk-adjusted performance, labeled *Domestic Four-Factor-adjusted Return (FFC4)*, as Fama-French-Carhart (FFC) four-factor-adjusted fund performance. The risk adjustment is computed as realized fund returns minus the product of the fund's four-factor betas and the realized four-factor returns of a given month. The three Fama and French (1993) factors (market, size, and book-to-market) and Carhart's (1997) momentum factor are measured for the region in which a fund invests. The betas of a fund are estimated as the exposure of the fund to relevant risk factors over a five-year estimation period. We also apply an international eight-factor model that includes four domestic FFC factors and four international FFC factors to compute the *International Eight-Factor-adjusted Return (FFC8)*. Furthermore, we consider the dollar value added as an alternative performance measure, labeled *Value Added*. Berk and van Binsbergen (2015) argue that the expected value a fund adds is a better measure of skill than the fund's return or alpha. *Value added* is defined as the product of fund style-adjusted gross returns (or gross alpha) and lagged TNA. The gross alpha is computed from the international eight-factor model over a five-year rolling window as illustrated above.

We further control for a list of fund characteristics that may affect fund performance and flows: *Log(Fund TNA)*, defined as the logarithm of fund TNA; *Log(Fund Age)*, defined as the logarithm of the number of operational months from inception; *Expense Ratio*, defined as the annual expense ratio; and *Fund Turnover*, defined as the annualized turnover ratio. Appendix A provides a detailed definition for each variable.

We report the summary statistics in Table 1. Panel A reports the mean, standard deviation, median, and quantile distribution of monthly fund flow and performance. Panels B and C report similar statistics for other annual fund and stock characteristics, respectively.

III. The Regulation of the FATCA

U.S. persons are taxed on their worldwide income, but some establish foreign accounts to evade U.S. taxes. For decades, offshore income was subject to self-reporting and the banking secrecy of foreign tax havens shielded tax evaders from investigation by U.S. tax authorities (Johannesen et al. 2019; De Simone, Lester, and Markle 2020). Starting in 2008, the U.S. government initiated a series of attempts to curb offshore tax evasion. For instance, the U.S. government signed bilateral TIEAs with a number of tax havens, took legal measures against individual banks to obtain information on their U.S. customers, and implemented a series of programs providing incentives to voluntarily declare offshore accounts (Johannesen et al. 2019; De Simone, Lester, and Markle 2020). However, due to a lack of scope and enforcement mechanisms, the overall effect on tax compliance has been limited. Information exchange rarely occurs in practice, and tax evaders can relocate to other noncollaborative tax havens and use new means to hide their true income (e.g., Sheppard 2009; Johannesen and Zucman 2014; Johannesen et al. 2019; Menkhoff and Miethe 2019).

To further fight widespread offshore tax evasion by U.S. persons, Congress passed the FATCA in March 2010 as part of the Hiring Incentives to Restore Employment Act.[10] What makes the FATCA more powerful is that FFIs are now required to report directly to the IRS on the financial accounts held by U.S. taxpayers or by foreign entities in which U.S. taxpayers hold a substantial ownership interest. Reporting institutions include not only banks but also other financial institutions such as investment entities, brokers, and certain insurance companies as well as some nonfinancial foreign entities. The dramatic shift from self-reporting to automatic third-party reporting significantly increased detection risk, thereby making cross-border tax arbitrage less attractive (e.g., Dharmapala 2016; Omartian 2017; De Simone, Lester, and Markle 2020).

Another important feature of the FATCA lies in its unprecedented scope and high participation rate. FFIs can either comply with the FATCA or incur a 30% withholding tax on any U.S.-sourced income, including interest, dividends, and gross proceeds from sales of securities (Parillo 2010; Sapirie 2014). The penalty-like withholding tax on nonparticipating FFIs, the willingness of the U.S. government to impose sanctions on FFIs that violate U.S. rules (e.g., sanctions vis-à-vis Iran), the size of such sanctions, and the extraterritorial power of U.S. authorities due to the dollar being the main currency combine to make the FATCA a very stringent and biting regulation for any international financial institution. As documented by Belnap, Thornock, and Williams (2019), 97% of FFIs have registered under the FATCA with 87,993 registering in July 2014 when it was first implemented and with that number growing to 314,026 FFIs by June 2018. As of January 2019, 113 foreign jurisdictions had signed Intergovernmental Agreements (IGAs) to comply with the FATCA.

The FATCA was signed into law on March 18, 2010 and became effective on January 1, 2013. FFIs needed to register with the IRS to comply by June 30, 2014, and the 30% withholding tax has been imposed on nonparticipating FFIs since July 1, 2014. In short, mandated information sharing under the FATCA went into effect after June 30, 2014.

IV. Fund Performance Around the FATCA

A. Fund Performance

We start by testing how funds react to the FATCA and focus specifically on their performance. Since the FATCA targets the offshore tax evasion of U.S. persons, our identification strategy involves examining offshore funds sold to U.S. investors (i.e., the treatment group, the affected funds) and comparing them to offshore funds not sold to U.S. investors (i.e., the control group, the unaffected funds).[11] In particular, we perform a difference-in-differences estimate of fund performance around the FATCA via monthly panel regression:

[10] The IRS website (https://www.irs.gov/businesses/corporations/foreign-account-tax-compliance-act-fatca) and Belnap, Thornock, and Williams (2019) Appendix 1 provide a detailed background on the FATCA.

[11] It is reasonable to assume that non-U.S. investors are not affected by and indifferent to a regulation targeting U.S. investors, and a similar setting is adopted by Hanlon, Maydew, and Thornock (2015) and De Simone, Lester, and Markle (2020).

$$Perf_{f,t} = \alpha + \beta_1 USSale_f \times Post_t + \gamma N_{f,t-1} + e_{f,t}, \quad (1)$$

where $Perf_{f,t}$ refers to the performance of offshore fund f in month t, and $USSale_f$ is a dummy variable that equals 1 if offshore fund f is sold to U.S. investors and 0 if it is not. $Post_t$ refers to a dummy variable (*Post FATCA 3Y*) that equals 1 for the three years after the implementation of the FATCA (i.e., 2014:07–2017:06) and 0 for the three years preceding its implementation (i.e., 2011:07–2014:06).[12] The vector *N* stacks all other fund control variables, including *Log(Fund TNA)*, *Log(Fund Age)*, *Expense Ratio*, *Fund Turnover*, *Fund Return*, and *Fund Flow*. We provide detailed definitions for all variables in Appendix A. We include fund and month fixed effects in all specifications. Standard errors are clustered at the domicile country level.

We consider various definitions of performance, including net-of-fee and gross-of-fee returns. Both are considered before and after adjusting for investment style. Returns are further adjusted by a domestic four-factor model (*FFC4*) or international eight-factor model (*FFC8*), as illustrated above. We also consider dollar value added as in Berk and van Binsbergen (2015) based on gross-of-fee style-adjusted or FFC8-adjusted returns.

The dollar value added captures the before-fee value creation generated by managerial skills (Berk and van Binsbergen 2015). However, investors receive the return on the assets they invest net of fees. In other words, value added represents the overall dollar value created by fund managers while the net-of-fee percentage return represents what the mutual fund investors actually receive (for each dollar they invest). From an overall "welfare" perspective, it is important not only how much each fund delivers to its investors (i.e., fund return) but also how much investors invest with the fund (i.e., fund TNA). Therefore, to present numbers that are comparable in terms of value created by fund managers and value appropriated by investors, we adopt weighted least squares regression for return-based performance measures where each fund is weighted according to its TNA for the end of the month before FATCA adoption. Weighting the percentage return by fund size better reflects the overall return for mutual fund investors by incorporating the amount they invest.

We report the results in Panel A of Table 2. We focus on the β_1 coefficient in Equation (1), as it captures the average monthly performance change for a treated group relative to the control group for the post-FATCA period (compared to the pre-FATCA period). The results show a strong positive

[12] We use the effective date of IGAs as the beginning of the post-FATCA period and limit our sample period to July 2011 to June 2017 for several reasons. First, while the FATCA was passed in 2010, it was unclear whether the U.S. would succeed in influencing foreign governments to enforce it given its conflicts with many countries' domestic privacy laws and banking regulations (Belnap, Thornock, and Williams 2019). Later, the U.S. modified the FATCA regime and released proposed regulations detailing the implementation of the FATCA in February 2012. The IRS issued final regulations in January 2013, but by then only five countries had signed the IGAs. All 34 countries in our sample signed IGAs effective on June 30, 2014, and mandated information sharing went into effect afterwards. In our context, this is an appropriate starting point for testing the strategic reactions of affected funds in response to the loss of tax advantages. Second, while investors anticipate the effective date given the extremely high level of initial participation, they could shift assets on short notice, as the financial market is highly liquid. We also explicitly test this in the empirical analysis and find no pre-trends. Finally, we limit our sample period to July 2011 to June 2017 (i.e., three years before to three years after FATCA application) to avoid confounding events, i.e., the U.S. signed bilateral agreements on information exchange on request with six tax havens between 2008 and 2010 (Johannesen et al. 2019), and the OECD's Mutual Competent Authority Agreement, which allows for the automatic exchange of information under its Common Reporting Standard (CRS) starting from September 2017 (Casi, Spengel, and Stage 2020).

correlation between $USSale_f \times Post_t$ and fund performance. In particular, offshore funds sold to U.S. investors display a 2.78% (2.57%) higher net-of-fee return (style-adjusted return) per year over the three-year window in Model 1 (Model 2).[13] Our findings on gross-of-fee returns are statistically and economically comparable (Models 3 and 4). Similar results hold when $Perf_{f,t}$ is measured by risk-adjusted returns. Specifically, for the affected funds, the domestic four-factor-adjusted (FFC4-adjusted) return increases by 1.28% per year (Model 5) and the international eight-factor-adjusted (FFC8-adjusted) return increases by 1% per year (Model 6). In addition, the dollar value added increases by $13.31 ($9.72) million per year based on style-adjusted (FFC8-adjusted) returns in Model 7 (Model 8). Internet Appendix Table IA1 confirms that our main findings are robust to ordinary least squares regression (Panel A) and alternative clustering methods by time, fund, and region of sale (Panel B).

To capture the potential anticipation to FATCA effectiveness, we conduct a placebo test on the parallel trend assumption by directly analyzing the pre-FATCA period. Specifically, we estimate a difference-in-differences specification using monthly panel regression:

$$Perf_{f,t} = \alpha + \beta_1 USSale_f \times Pre_t + \beta_2 USSale_f \times Post_t + \gamma N_{f,t-1} + e_{f,t}, \quad (2)$$

where Pre_t refers to a dummy variable that equals 1 for the year before the implementation of the FATCA (i.e., 2013:07–2014:06) and 0 otherwise. All other variables are defined as in Equation (1). We include fund and month fixed effects in all specifications. Standard errors are clustered at the domicile country level.

We tabulate the results in Panel B of Table 2. The β_1 coefficient measures the difference between the treatment group and the control group for the pre-FATCA period. We confirm that β_1 is statistically indistinguishable from zero across all specifications. This suggests that the control group exhibits a similar performance pattern as the treatment group in the pre-FATCA period (after controlling for fixed effects and fund characteristics), which justifies our difference-in-differences research design. Furthermore, we continue to find that affected funds deliver better performance during the post-FATCA period across all specifications. For instance, the net-of-fee style-adjusted (FFC8-adjusted) return increases by 2.14% (1.27%) per year over the three-year window in Model 2 (Model 6), and the dollar value added increases by $14.4 ($11.18) million per year based on style-adjusted (FFC8-adjusted) returns in Model 7 (Model 8).

Overall, we find that offshore funds sold to U.S. investors respond to the FATCA regulation by enhancing their performance. On the one hand, the stronger gross-of-fee performance and higher dollar value added support the notion that funds can improve performance if they *want to*. On the other hand, a similar improvement in net-of-fee performance implies that investors are compensated by better performance when affected funds become less attractive due to the loss of tax advantages. Our findings also imply that asset prices are inefficient, which allows affected offshore funds to generate performance

[13] In Model 1, the monthly net-of-fee return difference between treated and control funds is 0.232%, which translates to an annualized return of 0.232% × 12 = 2.78%.

à la Berk and Green (2004). This inefficiency also allows our later sections to detect the marginal impact of funds (via FATCA) on market efficiency.

B. Economic Grounds of Performance Improvement

Till now, we have documented that mutual funds affected by the FATCA experience a sharp increase in performance, suggesting that they can generate performance if they want to. To further understand the economic mechanisms that improve fund performance, we explore cross-sectional variation in fund characteristics related to the incentive and ability to deliver better performance after the FATCA.

First, U.S. persons might invest in offshore assets for many legitimate reasons, but tax evaders are more likely to hold assets in tax havens.[14] Consequently, affected funds domiciled in tax havens should suffer a greater loss in their competitive advantage. In a similar vein, the effect of the FATCA could vary with the distribution type of the fund. Income funds distribute any interest or dividend income from the investment and such payments are taxable, while accumulation funds reinvest the income within the fund. Therefore, we hypothesize that funds domiciled in tax havens and income funds are more sensitive to the tax regulation change and are subject to higher losses of tax benefits after the FATCA, resulting in greater incentives to improve performance and mitigate capital outflows.

Second, the incremental cost required to improve performance could be lower for skilled funds. Given the fixed cost of setting up support teams to conduct investment research, better equipped and more skilled funds could be more capable of adapting to regulatory change and improving performance over the short term by devoting more effort. Thus, we hypothesize that skilled funds are more likely to reoptimize their investment strategies and deliver higher performance after the FATCA.

Third, a large empirical literature documents the existence of asset fire sales and bank-run-like redemptions in the mutual fund industry, and such liquidity-motivated trading is costly and unprofitable (e.g., Edelen 1999; Coval and Stafford 2007). Therefore, we hypothesize that mutual funds with lower funding risk and less precautionary incentives to avoid asset fire sales are more likely to optimize their portfolio allocation and improve performance.

Finally, reactions to the FATCA could also vary with fund size. On the one hand, large funds are more likely to suffer from higher diseconomies of scale in terms of searching for good investment opportunities and the market impact related to their trading. On the other hand, they have the advantage of mobilizing more resources and exploiting their research platforms. Small funds may instead be more agile in trading but with access to a smaller infrastructure.[15] The net impact on fund performance remains an empirical question.

[14] Tax haven refers to jurisdictions with low effective tax rates and a sufficient commitment to financial secrecy to be attractive to foreigners wishing to shield income from home-country taxation (Johannesen et al. 2019). Zucman (2013) estimates that roughly 8% of the global financial wealth of households is held in tax havens, translating to approximately 10% of global GDP. In addition, three-quarters of household assets held in tax havens are unrecorded.

[15] Belnap, Thornock, and Williams (2019) document that the FATCA imposes significant costs on FFIs, especially for small FFIs in local financial services markets.

To test the above economic mechanisms, we estimate the following difference-in-differences specification via monthly panel regression:

$$Perf_{f,t} = \alpha + \beta_1 USSale_f \times Post_t + \beta_2 USSale_f \times Post_t \times Char_f + \beta_3 Post_t \times Char_f + \gamma N_{f,t-1} + e_{f,t}, \quad (3)$$

where $Char_f$ refers to a list of fund characteristics, including *Haven*, defined as a dummy variable that equals 1 if a fund's domicile country is identified as a tax haven, and 0 otherwise; *TIEA Haven*, defined as a dummy variable that equals 1 if a fund's domicile country is identified as a tax haven and signed a bilateral TIEA with the U.S. prior to the FATCA and 0 otherwise; *Non-TIEA Haven*, defined as a dummy variable that equals 1 if a fund's domicile country is identified as a tax haven and did not sign a bilateral TIEA with the U.S. prior to the FATCA and 0 otherwise; *Tax Managed*, defined as a dummy variable that equals 1 for income funds and 0 for accumulation funds; TR^2, defined as the average R-square obtained from a regression of fund returns on the international eight-factor model *(FFC8)* for the three-year period before the FATCA; *FlowVol*, defined as the standard deviation of monthly fund flows over the three-year period before the FATCA; and *Fund Size*, defined as the logarithm of fund TNA at the end of the month before the FATCA. Specifically, R-square (TR^2) proxies for mutual fund management skill, and a lower R-square is associated with greater selectivity and better performance (Amihud and Goyenko 2013). Flow volatility (*FlowVol*) proxies for the potential liquidity demand from fund investors and managers' precautionary incentives to avoid asset fire sales, and funds with more volatile flows tend to have greater funding risk. All other variables are defined as in Equation (1). We include fund and month fixed effects in all specifications. Standard errors are clustered at the domicile country level.

We focus on net-of-fee returns, style-adjusted returns, and value added in all subsequent analyses while our results are robust to alternative performance measures. We report the results in Table 3. In Panel A, we report the results for net-of-fee returns (Models 1–6) and style-adjusted returns (Models 7–12), while in Panel B we present the results for value added based on style-adjusted returns (Models 1–6) and FFC8-adjusted returns (Models 7–12). When we focus on triple interactions, we find that funds domiciled in tax havens, income funds, large funds, and funds with lower R-square and flow volatility show greater improvements in performance. The results are largely robust to various performance measures—both return and value added, both raw and style-adjusted.

Intuitively, funds domiciled in tax havens and income funds are more sensitive to the tax regulation change and hence are more incentivized to enhance performance and regain their competitive advantage. In addition, funds domiciled in all tax havens improve their performance regardless of whether they signed bilateral TIEAs with the U.S. prior to the FATCA. This implies that the FATCA overcomes the main limitations of existing TIEAs, e.g., information exchange is not automatic but upon request, and tax authorities must possess sufficient evidence on tax evasion to request information, thus inducing additional responses from fund managers. Finally, large funds, more skilled funds (measured

by a low R-square), and funds with lower funding risk (measured by low flow volatility) could mobilize their existing research capacities to achieve stronger performance at a relatively low cost and are therefore more likely to choose to do so.

Our findings are also economically meaningful. Affected funds domiciled in tax havens display a 1.97% higher style-adjusted returns per year over the three-year event window (Panel A Model 7), and this further translates into $13.14 million in value added per year (Panel B Model 1). Additionally, affected funds domiciled in tax havens with (without) TIEAs before the FATCA show a 1.84% (2.47%) higher style-adjusted return per year (Panel A Model 8), and this further translates into $14.77 ($6.78) million in value added per year (Panel B Model 2). Regarding distribution types, affected income funds show a 2.78% higher style-adjusted return per year (Panel A Model 9) while the effect on value added is insignificant. In terms of managerial skills and funding risk, a one-standard-deviation increase in R-square (flow volatility) is associated with a 0.81% (0.75%) lower annualized style-adjusted return for the affected funds as shown in Panel A Model 10 (Model 11), and this further translates into $10.29 ($6.51) million less value added per year as shown in Panel B Model 4 (Model 5). Finally, a one-standard-deviation increase in fund size is associated with a 0.55% higher style-adjusted return per year (Panel A Model 12), and this corresponds to $14.45 million more value added per year (Panel B Model 6).

Overall, these results suggest that offshore funds sold to U.S. investors react to the FATCA by improving their performance, and this effect is particularly strong among funds domiciled in tax havens, income funds, large funds, more skilled funds, and funds with lower funding risk. In line with the endogenous choice of fund managers to deliver performance, affected funds choose to deliver higher performance after the FATCA because they are more incentivized to do so and/or are more capable of doing so. Our findings support the notion that every fund can have skill but may optimally choose not to deliver it, resulting in potential inefficiencies in both the asset management industry and stock markets.

C. Dynamic Behavior

Our next question concerns whether and how the positive effect on fund performance proceeds over time after the implementation of the FATCA. In particular, we are interested in temporary versus more persistent effects. If tax advantages were used to substitute for performance to attract investors before the FATCA, the permanent loss of tax advantage after the FATCA should have a persistent impact on fund performance. To address this question, we modify Equations (1) and (2) by expanding the variable $Post_t$ to a list of dummy variables: $Post\ FATCA^{+1}$ equals 1 for one year after the implementation of FATCA (i.e., 2014:07–2015:06) and 0 otherwise, and $Post\ FATCA^{+2:+3}$ equals 1 for the second and third years after the implementation of the FATCA (i.e., 2015:07–2017:06) and 0 otherwise. All other variables are defined as in Equations (1) and (2). We include fund and month fixed effects in all specifications. Standard errors are clustered at the domicile country level.

The results are reported in Table 4 Panel A. In line with the substitution of performance and tax advantage, the FATCA-induced performance improvement does not decay over time. In particular, offshore funds sold to U.S. investors display a 3.06% higher style-adjusted return in the first year after the FATCA, and the economic magnitude remains sizable at 2.3% per year for the following two years (Model 2). The dollar value added increases by $14.46 ($9.92) million for affected funds in the first year and by $12.67 ($9.61) million per year in the following two years if we use style-adjusted returns (FFC8-adjusted return) as reported in Model 3 (Model 4). Models 5–8 further control for the pre-FATCA period. We find no pretrends in fund performance across all specifications while our findings for the post-FATCA period remain intact. Collectively, the FATCA not only incentivizes managers to create more value but also benefits investors as they receive better net-of-fee performance, and the improvement in performance persists over the three years following FATCA implementation.

D. Robustness Checks

To address the potential concern that offshore funds sold to U.S. investors could be systematically different from those that do not target U.S. investors, we repeat our analysis using a propensity score matched (PSM) sample. For each affected fund, we use the PSM approach to construct a matched sample by matching offshore funds sold to U.S. investors (treatment group) to those not sold to U.S. investors (control group). We compute propensity scores using a logistic regression based on fund characteristics. They include: *Log(Fund TNA)*, *Log(Fund Age)*, *Expense Ratio*, *Fund Turnover*, *Fund Return*, and *Fund Flow*. We further require the treatment and control funds to have the same investment style and apply nearest-neighbor matching.

We conduct a similar difference-in-differences test of fund performance using the PSM sample. The results are reported in Table 4 Panel B, and the layout used is the same as that of Panel A. Our main findings are robust to the PSM approach. For affected funds, the style-adjusted return increases by 3.62% within one year and by 2.88% per year in the following two years (Model 2), and the dollar value added increases by $23.12 ($12.13) million in the first year and by $13 ($10.27) million per year in the following two years based on style- and FFC8-adjusted returns in Model 3 (Model 4). Models 5–8 further control for the pre-FATCA period, and we find no pretrends in fund performance across all specifications. Furthermore, our results for the post-FATCA period remain statistically and economically significant.

Overall, our findings suggest that mutual funds can deliver better performance if they wish to. The FATCA incentivizes affected funds to improve performance to offset the loss in their competitive advantage created by offshore tax evasion. Fund managers create more value in general (in terms of dollar value added and gross-of-fee performance) and investors also benefit from higher net-of-fee performance. Moreover, according to various performance metrics, the superior performance does not decay over the first three years of FATCA implementation.

V. Fund Fees Around the FATCA

Next, we examine whether mutual funds react to the FATCA by adjusting their fees. Intuitively, funds could react to the FATCA by playing the quality card (i.e., improving performance) and price card (i.e., reducing fees). Given that fund fees are only available with annual frequency, we estimate the following difference-in-differences specifications using annual panel regressions:

$$Fee_{f,t} = \alpha + \beta_1 USSale_f \times Post_t + \gamma N_{f,t-1} + e_{f,t}, \quad (4A)$$

$$Fee_{f,t} = \alpha + \beta_1 USSale_f \times Pre_t + \beta_2 USSale_f \times Post_t + \gamma N_{f,t-1} + e_{f,t}, \quad (4B)$$

where $Fee_{f,t}$ refers to the expense ratio or style-adjusted expense ratio of fund f in year t, and all other variables are defined as in Equations (1) and (2). We include fund and year fixed effects in all specifications. Standard errors are clustered at the domicile country level.

We report the results in Table 5, with Models 1–3 for fund fees and Models 4–6 for style-adjusted fees. In addition to improving performance, affected funds also reduce fees to retain investors, though the economic magnitude is much smaller. In particular, offshore funds sold to U.S. investors display a 2.8 bps lower fee for the three years following the event (Model 1) than unaffected funds, and this translates into a 1.62% decline relative to the average expense ratio of 1.725% for the sample. In addition, affected funds on average display a 2.3 bps lower fee for the first year and further reduce the fee by 3.1 bps per year in the following two years (Model 2). Our results are robust to controlling for the pre-FATCA period and style adjustment. Since the economic magnitude is relatively small, affected funds appear to be more constrained in reducing fees consistent with the empirical evidence of fees being highly persistent (Cooper, Halling, and Lemmon 2012).

In comparing our performance and fee results, we find that the main tradeoff triggered by the FATCA occurs between tax evasion and performance. Nonetheless, since affected funds both increase distributed returns and decrease fees, curbing offshore tax evasion eliminates tax-evasion-based product differentiation and motivates performance-based competition, improving the efficiency of the mutual fund industry in the spirit of Pedersen (2015).

VI. Effects on Price Efficiency

So far we have documented that affected funds deliver better performance to offset the loss of tax benefits after the FATCA. If the outperformance is indeed due to enhanced efforts in information acquisition and processing rather than pure luck, it could also improve the informational efficiency of individual stocks in which they invest. We therefore investigate whether the stocks held by affected funds display higher price efficiency after the FATCA.

More specifically, we define market efficiency from the delay in the stock price to market returns. Following Bae, Ozoguz, Tan, and Wirjanto (2012), we consider two measures of efficiency: delay of local market information *(Delay_Local)* and global market information (*Delay_Global*). This further

allows us to investigate the type of information used by the affected funds. By construction, less market delay indicates higher price efficiency. We estimate the following annual panel regression:

$$Delay_{i,t} = \alpha + \beta_1 IO\_Affected_{i,t} \times Post_t + \beta_2 IO\_NonAffected_{i,t} \times Post_t + \gamma C_{i,t-1} + e_{i,t}, \quad (5)$$

where $Delay_{i,t}$ refers to a list of market delay proxies of stock i in year t, including the delay of local market information ($Delay\_Local_{i,t}$) and of global market information ($Delay\_Global_{i,t}$). $IO\_Affected_{i,t}$ denotes the percentage ownership held by offshore funds sold to U.S. investors, and $IO\_NonAffected_{i,t}$ denotes the percentage ownership held by funds not affected by FATCA (i.e., funds domiciled in the U.S. and offshore funds not sold to U.S. investors). The vector *C* stacks all other stock control variables, including *Log(Stock Size)*, *Book-to-Market*, and *Stock Return*. All other variables are defined as in Equation (1). We include stock and country-year (or country-industry-year) fixed effects. Standard errors are clustered at the firm and year levels.

We report the results in Table 6 Panel A. As shown in Models 1–4, higher ownership from affected funds is negatively associated with the delay of local market information for the three years after the FATCA, indicating higher informational efficiency. This holds across the different specifications both statistically and economically. In particular, a one-standard-deviation increase in the ownership of affected funds is related to 4.84% higher efficiency in the delay of local market information in Model 4 (scaled by the standard deviation of delay measures). A placebo test using the ownership of non-affected funds does not show similar patterns, and its impact on price efficiency does not vary around the time of FATCA application.

As shown in Models 5–8, there is almost no change in the delay of global market information among both affected and unaffected funds. Bae, Ozoguz, Tan, and Wirjanto (2012) document that global market information is relatively easy to obtain for foreign funds, and foreign capital can improve informational efficiency by better processing global information. As a result, all funds might have already incorporated global information into their investments prior to the FATCA, and thus the FATCA has very limited impacts. When affected funds step up their efforts to collect information, they are likely to focus on local information. Acquiring local information could be more costly and only becomes valuable when better performance is required to compensate for the loss of tax benefits.

Next, we explore whether the effect is time varying. Table 6 Panel B presents similar statistics when $Post_t$ denotes the year-by-year change. We find that the delay of local market information declines with ownership from affected funds across all three years, confirming that funds are trying to improve their performance by collecting information that they were not collecting before and that this is mostly local information. As shown in Model 4, a one-standard-deviation increase in the ownership of affected funds is related to 3.97% higher efficiency in the first year and 5.43% higher efficiency in the following two years (scaled by the standard deviation of delay measures), and efficiency is measured by less delay of local market information.

Overall, we find consistent evidence that the improvement in fund performance and market efficiency is not temporary. Our findings suggest that more transparency in tax reporting not only allows the government to better fight tax evasion but also incentivizes offshore funds to expend more effort on information acquisition, thereby improving the efficiency of both the global mutual fund industry and stock markets.

VII. Do Investors React to the FATCA?

Finally, we examine the reactions of investors by analyzing fund flows. We explore whether the FATCA induces a reshuffle in flows with U.S. investors reallocating away from previously invested offshore funds. If affected funds are able to fully compensate for the loss of competitive advantage by maneuvering net-of-fee performance, we expect to find no effect on flows. However, if the cost for funds to fully adjust is too high—especially in the presence of increasing marginal costs to improve performance due to more competition and higher price efficiency—we should see a negative impact on flows. Since our flow analysis jointly examines investors' and managers' reactions, we focus on how the FATCA affects flows *once we condition on the adjusted net-of-fee performance* so that the null of no change can be interpreted as (1) there is no change in investor behavior or (2) an adjustment in net-of-fee performance sufficient to fully absorb the shock. We estimate the following difference-in-differences specifications using monthly panel regressions:

$$Flow_{f,t} = \alpha + \beta_1 USSale_f \times Post_t + \gamma N_{f,t-1} + e_{f,t}, \quad (6A)$$

$$Flow_{f,t} = \alpha + \beta_1 USSale_f \times Pre_t + \beta_2 USSale_f \times Post_t + \gamma N_{f,t-1} + e_{f,t}, \quad (6B)$$

where $Flow_{f,t}$ refers to the monthly flow or style-adjusted flow of fund f in month t, and all other variables are defined as in Equations (1) and (2). We include fund and month fixed effects in all specifications. Standard errors are clustered at the domicile country level.

In Table 7, we report the results for fund flow (Models 1–3) and style-adjusted flows (Models 4–6). We find that offshore funds sold to U.S. investors experience lower demand, and the effect becomes sizable after the first year of FATCA adoption. In particular, affected funds display 3.12% lower flows (Model 1) and 3.04% lower style-adjusted flows (Model 4) per year over three years (compared to those not sold to U.S. investors). In addition, the decline in fund flows is statistically insignificant in the first year after FATCA application, while we find strong annual outflows of 4.42% for the following two years (Model 2). Our results are robust to controlling for the pre-FATCA period and to style adjustment.

These results suggest that instead of shifting assets in anticipation of the FATCA regulation, tax-savvy U.S. investors react to the FATCA by gradually withdrawing from offshore funds. Our findings also imply that offshore fund investors are indeed very sensitive to tax benefits, which justifies the choice of affected funds to deliver better performance to retain them. Finally, net outflows following FATCA implementation indicate that despite enhanced efforts toward information acquisition and

improved net-of-fee performance, such adjustment is not sizable enough to fully offset the loss of tax benefits of affected funds.

Next, we explore the cross-sectional variation in fund flows after FATCA implementation. We focus on fund characteristics directly related to the tax incentives of investors such as whether a fund is located in a tax haven and a fund's distribution status. Existing work also suggests that investors chase past performance and especially the Morningstar star rating (e.g., Ben-David, Li, Rossi, and Song 2019). Therefore, we further interact the star rating with FATCA adoption to control for time-varying investor demand due to the adjustment of fund performance. Specifically, we estimate the following difference-in-differences specification via monthly panel regression:

$$Flow_{f,t} = \alpha + \beta_1 USSale_f \times Post_t + \beta_2 USSale_f \times Post_t \times Char_f + \beta_3 Post_t \times Char_f + \gamma N_{f,t-1} + e_{f,t}, \quad (7)$$

where $Char_f$ refers to a list of fund characteristics, including *Haven*, *TIEA Haven*, *Non-TIEA Haven*, *Tax Managed*, as defined as in Equation (3) and *Star* is defined as the one-year lagged star rating from Morningstar. All other variables are defined as in Equations (1) and (2). We include fund and month fixed effects in all specifications. Standard errors are clustered at the domicile country level.

We present the results in Table 8 with Models 1–6 referring to fund flows and Models 7–12 referring to style-adjusted flows. Notably, outflows are concentrated among funds domiciled in tax havens and especially those signing bilateral TIEAs with the U.S. prior to the FATCA. For the three years following FATCA implementation, affected funds domiciled in tax havens show 4.99% lower flows (Model 1) and 5.6% lower style-adjusted flows (Model 7) per year, and affected funds domiciled in tax havens with TIEAs snow 6.3% lower flows (Model 2) and 6.88% lower style-adjusted flows (Model 8) per year, respectively reflecting 60% to 126% more outflows compared to the full sample results given in Table 7. Our findings confirm that tax evaders are more likely to invest in tax havens and that the FATCA induces additional investor responses over the previous upon-request information exchange regime. In addition, the effect of the FATCA does not vary with the distribution status or star rating of a fund, and our main results remain valid after controlling for time-varying investor demand related to star ratings (Models 4–6 and 10–12). Despite the generally positive flow-performance relationship found (as shown by the coefficient of star ratings across all specifications), flow-performance sensitivity does not vary across fund types around the time of FATCA implementation (as indicated by the insignificant triple interaction of *US Sale* × *Post FATCA 3Y* × *Star*). This further implies that performance is not a primary concern for the subset of offshore fund investors who aim to evade taxes.

Overall, the FATCA induces a reshuffle of fund flows with U.S. investors withdrawing their previous investments in offshore funds. Outflows are concentrated among funds domiciled in tax havens. The affected funds have reacted to FATCA regulation by improving net-of-fee performance, but this has only partially compensated for the loss of their competitive advantage provided by offshore

tax evasion. In addition, the FATCA induces additional responses from investors and fund managers over the previous upon-request information exchange regime. Our findings suggest that mutual funds can deliver better performance if they want to. Their enhanced efforts to collect information subsequently improve the efficiency of both the global mutual fund industry and stock markets.

Conclusion

We explore a novel setting to study the endogenous choice of fund managers to acquire information and deliver performance. In particular, we analyze the implementation of the FATCA regulation, which targets the offshore tax evasion of U.S. persons. The FATCA has exogenously reduced the attractiveness of offshore funds to U.S. investors, changing the incentives of fund managers to deliver performance.

We rely on a complete sample of actively managed equity mutual funds around the world for 2011 to 2017. Applying a standard difference-in-differences approach to study the period around FATCA implementation, we examine offshore funds sold to U.S. investors (i.e., the treatment group) and compare them to offshore funds not sold to U.S. investors (i.e., the control group). We document that offshore funds sold to U.S. investors significantly improve their performance and that the effect is stronger among funds domiciled in tax havens; income funds; and large, skilled funds with low flow volatility. Moreover, in generating additional performance, affected funds also enhance the price efficiency of their invested stocks, especially in terms of more timely responses to local market information. Finally, the FATCA nevertheless induces sizable outflows for affected funds, confirming a negative impact of the regulation on the demands of tax-savvy investors, which also justifies the choice of affected funds to use improved performance to offset this effect.

Our findings imply that although mutual funds do not seem to beat the market on average, this may not be because the market is efficient, but because mutual funds optimally choose not to do so. However, when some of the attributes they use to attract investors change (i.e., offshore tax evasion), funds are willing and, more importantly, able to deliver better performance. Our results have important normative implications. We document that more transparency in tax reporting not only allows the government to better fight tax evasion but also has broader implications for financial markets. Indeed, it affects the behaviors of both investors (i.e., targeted taxpayers) and their fund managers as well as the efficiency of both the global mutual fund industry and stock markets.

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Appendix A: Variable Definitions

Variables	Definitions
A. Fund Performance and Flow Measures (in %)	
Fund Return	The monthly return reported by the CRSP survivorship bias-free mutual fund database. When a portfolio has multiple share classes, its total return is computed as the share class total net assets (TNA)-weighted return of all share classes, where the TNA values are one-month lagged.
Style-adjusted Return (STYRET)	Fund returns minus the TNA-weighted average return of funds in the same style, and the TNA values are one-month lagged.
Domestic Four-Factor-adjusted Return (FFC4)	Realized fund returns minus the product of a fund's four-factor betas and the realized four-factor returns in a given month. The four-factor model consists of domestic Fama and French (1993) and Carhart (1997) factors (market, size, book-to-market, and momentum, FFC). The betas of the fund are estimated as the exposures of the fund to the relevant risk factors in a five-year rolling window.
International Eight-Factor-adjusted Return (FFC8)	Realized fund returns minus the product of a fund's eight-factor betas and the realized eight-factor returns in a given month. The eight-factor model consists of four domestic FFC factors and four international FFC factors. The betas of the fund are estimated as the exposures of the fund to the relevant risk factors in a five-year rolling window.
Gross-of-Fee Fund Return	Fund total return plus one-twelfth of the annualized expense ratio.
Value Added	The monthly value added of the fund is computed as the style-adjusted gross return (or gross alpha) multiplied by the one-month lagged TNA, following Berk and van Binsbergen (2015). The style-adjusted gross return is computed as the gross-of-fee fund returns minus the TNA-weighted average gross-of-fee return of the funds in the same style, and the TNA values are one-month lagged. The gross alpha is computed as realized fund gross return minus the productions between a fund's eight-factor betas multiplied by the realized factor returns in a given month. The factor model estimation is the same as in *International eight-Factor Adjusted Return*.
Fund Flow	Fund flow in a given month t is computed as follows: $Flow_{f,t} = \left[TNA_{f,t} - TNA_{f,t-1} \times \left(1 + r_{f,t}\right)\right]/TNA_{f,t-1}$, where $TNA_{f,t}$ refers to the total net assets of fund f in month t, and $r_{f,t}$ refers to fund total return in the same month.
B. Other Fund Characteristics	
US Sale	A dummy variable that equals 1 for offshore funds (i.e., funds not domiciled in U.S.) sold to U.S. investors (i.e., region of sale reported as U.S., Global Cross-Border, or Pure Offshore), and 0 for offshore funds not sold to U.S. investors. Both domicile country and region of sale are obtained from Morningstar Direct.
Haven	A dummy variable that equals 1 if a fund's domicile country is identified as a tax haven, and 0 otherwise. In our sample, tax havens include British Virgin Islands, Cayman Islands, Guernsey, Ireland, Liechtenstein, Luxembourg, Singapore, and Switzerland, following Dyreng and Lindsey (2009) and Bennedsen and Zeume (2018).
TIEA Haven	A dummy variable that equals 1 if a fund's domicile country is identified as a tax haven and signed a bilateral tax information exchange agreement (TIEA) with the U.S. prior to FATCA, and 0 otherwise. In our sample, tax havens with TIEAs include British Virgin Islands, Cayman Islands, Guernsey, Liechtenstein, Luxembourg, and Switzerland, following Johannesen et al. (2019), De Simone, Lester, and Markle (2020), and the OECD website (https://www.oecd.org/ctp/exchange-of-tax-information/taxinformationexchangeagreementstieas.htm).
Non-TIEA Haven	A dummy variable that equals 1 if a fund's domicile country is identified as a tax haven and did not sign a bilateral TIEA with the U.S. prior to FATCA, and 0 otherwise.
Tax Managed	A dummy variable that equals 1 for income funds (i.e., distribution status as 'Inc'), and 0 for accumulation funds (i.e., distribution status as 'Acc'). The distribution status is obtained from Morningstar Direct.
TR^2	R-square of fund f in a given month t, $R^2_{f,t}$ is obtained from the international eight-factor model with a two-year estimation period. More specifically, we regress monthly fund excess return on the four domestic FFC factor returns and four international FFC factor returns. The logistic transformation of R-square in a given month t is then computed as follows: $TR^2_{f,t} =$

	$\log\left[\sqrt{R_{f,t}^2 + c}/\left(1 - \sqrt{R_{f,t}^2 + c}\right)\right]$, where $c = 0.5/n$, and n is the sample size ($n = 24$), following Amihud and Goyenko (2013).
FlowVol	The standard deviation of monthly fund flow over three-year period.
Log(Fund TNA)	The logarithm of TNA as reported in Morningstar Direct, in millions.
Log(Fund Age)	The logarithm of number of operational months since inception.
Expense Ratio (in %)	The annualized expense ratio as reported in Morningstar Direct.
Fund Turnover (in %)	The annualized turnover ratio as reported in Morningstar Direct.
Star	The star rating ranging from 1 to 5 stars as reported in Morningstar Direct.
C. Market Delay Measures (in %)	
Delay_Local	The price delay to the local market information for stock i in year t is computed as follows: $Delay\_Local_{i,t} = 1 - \frac{R^2_{restricted,i,t}}{R^2_{unrestricted,i,t}}$, where $R^2_{restricted,i,t}$ and $R^2_{unrestricted,i,t}$ refer to the R-square from restricted and unrestricted market models estimated using weekly returns in each year t. The restricted model (RM) and unrestricted model (UM) are defined as follows: RM: $R_{i,w,t} = \alpha_{i,t} + \sum_{k=0}^{3} \delta_{i,k,t} R_{g,w-k,t} + \gamma_{i,0,t} R_{l,w,t} + e_{i,w,t}$; UM: $R_{i,w,t} = \alpha_{i,t} + \sum_{k=0}^{3} \delta_{i,k,t} R_{g,w-k,t} + \sum_{k=0}^{3} \gamma_{i,k,t} R_{l,w-k,t} + e_{i,w,t}$, where $R_{i,w,t}$ refers to the accumulated return of stock i in week w of year t and $R_{g,w-k,t}$ and $R_{l,w-k,t}$ refer to the contemporaneous and lagged returns on the value-weighted world market portfolio and the local market portfolio, following Hou and Moskowitz (2005) and Bae, Ozoguz, Tan, and Wirjanto (2012).
Delay_Global	The price delay to the global market information for stock i in year t is computed as follows: $Delay\_Global_{i,t} = 1 - \frac{R^2_{restricted,i,t}}{R^2_{unrestricted,i,t}}$, where $R^2_{restricted,i,t}$ and $R^2_{unrestricted,i,t}$ refer to the R-square from restricted and unrestricted market models estimated using weekly returns in each year t. The restricted model (RM) and unrestricted model (UM) are defined as follows: RM: $R_{i,w,t} = \alpha_{i,t} + \delta_{i,0,t} R_{g,w,t} + \sum_{k=0}^{3} \gamma_{i,k,t} R_{l,w-k,t} + e_{i,w,t}$; UM: $R_{i,w,t} = \alpha_{i,t} + \sum_{k=0}^{3} \delta_{i,k,t} R_{g,w-k,t} + \sum_{k=0}^{3} \gamma_{i,k,t} R_{l,w-k,t} + e_{i,w,t}$, where all variables are defined as in *Delay_Local*.
D. Other Stock Characteristics	
IO_Affected	The number of shares held by offshore funds that are sold to U.S. investors divided by the number of shares outstanding, in percentage.
IO_Non-Affected	The number of shares held by all funds minus the number of shares held by affected funds (i.e., offshore funds that are sold to U.S. investors), divided by the number of shares outstanding, in percentage.
Log(Stock Size)	The logarithm of market capitalization of stocks, in millions.
Book-to-Market	The book-to-market ratio for stock i in year t is computed as follows: $BM_{i,t} = BE_{i,t}/ME_{i,t}$, where $BE_{i,t}$ refers to the book value of equity of stock i in year t, computed as the summation of stockholders' equity and deferred taxes, minus the preferred stock, and $ME_{i,t}$ refers to its market value at the end of the year.
Stock Return	The cumulative stock returns of the past 12 months.

Table 1: Summary Statistics

This table presents the summary statistics for the data used in the paper during the period from July 2011 to June 2017. Panel A reports the mean, standard deviation, median, and quantile distribution of monthly fund flow and performance. Panels B and C report similar statistics for other annual fund and stock characteristics, respectively. Appendix A provides a detailed definition for each variable.

Quantile Distribution of Mutual Fund Characteristics							
	Mean	Std.Dev.	Quantile Distribution				
			10%	25%	Median	75%	90%
Panel A: Monthly Fund Characteristics (in %)							
Fund Return	0.404	5.052	-5.793	-2.280	0.660	3.344	6.146
Style-adjusted	-0.242	3.175	-3.781	-1.757	-0.144	1.378	3.126
FFC4-adjusted	-0.267	2.674	-3.055	-1.384	-0.200	0.933	2.411
FFC8-adjusted	-0.278	2.619	-2.975	-1.349	-0.209	0.885	2.306
Gross-of-Fee Fund Return	0.497	5.053	-5.700	-2.190	0.755	3.439	6.245
Style-adjusted	-0.229	3.176	-3.768	-1.743	-0.131	1.396	3.143
Value Added							
Style-adjusted	-0.420	9.070	-4.877	-1.186	-0.045	0.874	3.922
FFC8-adjusted	-0.307	7.391	-3.812	-0.914	-0.037	0.692	3.122
Fund Flow	-0.246	4.837	-3.929	-1.713	-0.421	0.621	3.434
Panel B: Annual Fund Characteristics							
Log(Fund TNA)	18.153	1.399	16.411	17.099	18.054	19.115	20.073
Log(Fund Age)	4.533	0.811	3.434	4.082	4.654	5.125	5.429
Expense Ratio (in %)	1.725	0.712	0.940	1.350	1.687	2.015	2.490
Fund Turnover (in %)	80.445	74.890	12.212	45.528	70.005	101.262	141.843
TR^2	3.376	1.403	1.756	2.247	3.207	4.344	5.418
FlowVol	2.915	1.739	0.856	1.507	2.639	4.067	5.423
Fund Size	18.321	1.399	16.571	17.200	18.166	19.260	20.268
Panel C: Annual Stock Characteristics							
Delay_Local	17.869	16.672	2.369	5.455	12.421	25.123	41.983
Delay_Global	17.960	16.974	2.210	5.245	12.303	25.602	42.805
IO_Affected	0.969	2.034	0.000	0.000	0.217	1.016	2.710
IO_Non-Affected	9.139	9.824	0.437	1.590	5.137	14.130	24.298
Log(Stock Size)	6.874	1.627	4.893	5.699	6.771	7.963	9.080
Book-to-Market	0.917	1.260	0.203	0.368	0.672	1.120	1.765
Stock Return	0.107	0.488	-0.359	-0.165	0.036	0.276	0.597

Table 2: Fund Performance Around FATCA

Panel A presents difference-in-differences estimates in the following monthly panel regressions (with fund and month fixed effects and their corresponding t-statistics with standard errors clustered at domicile country level):

$$Perf_{f,t} = \alpha + \beta_1 USSale_f \times Post_t + \gamma N_{f,t-1} + e_{f,t},$$

where $Perf_{f,t}$ refers to the monthly performance of offshore fund f in month t. $USSale_f$ refers to a dummy variable that equals 1 if offshore fund f is sold to U.S. investors, and 0 if it is not. $Post_t$ refers to a dummy variable, i.e., *Post FATCA 3Y* equals 1 for three years after the implementation of FATCA (i.e., 2014:07–2017:06), and 0 for three years before its implementation (i.e., 2011:07–2014:06). Vector *N* stacks all other fund control variables, including *Log(Fund TNA)*, *Log(Fund Age)*, *Expense Ratio*, *Fund Turnover*, *Fund Return*, and *Fund Flow*. $Perf_{f,t}$ is measured by net-of-fee return and style-adjusted return (Models 1 and 2), gross-of-fee return and style-adjusted return (Models 3 and 4), risk-adjusted return based on a domestic four-factor model (market, size, book-to-market, and momentum) (Model 5) and international eight-factor model including four domestic factors and four international factors (Model 6), and value added based on style-adjusted return (Model 7) and international eight-factor model (Model 8). Panel B presents similar difference-in-differences estimates in the following monthly panel regressions:

$$Perf_{f,t} = \alpha + \beta_1 USSale_f \times Pre_t + \beta_2 USSale_f \times Post_t + \gamma N_{f,t-1} + e_{f,t},$$

where Pre_t refers to a dummy variable that equals 1 for one year before the implementation of FATCA (i.e., 2013:07–2014:06), and 0 otherwise. All other variables are defined as above. Appendix A provides a detailed definition for each variable. Numbers with *, **, and *** are significant at the 10%, 5%, and 1% level, respectively.

Table 2—Continued

Panel A: Difference-In-Differences Estimates of Fund Return (in %) and Value Added (in Millions) Around FATCA

	Return		Gross-of-Fee Return		Risk-adjusted Return		Value Added	
	Return	STYRET	Return	STYRET	FFC4	FFC8	STYRET	FFC8
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
US Sale × Post FATCA 3Y	0.232***	0.214***	0.231***	0.212***	0.107**	0.083*	1.109***	0.810***
	(5.17)	(5.25)	(5.20)	(5.29)	(2.13)	(1.91)	(7.56)	(4.95)
Log(Fund TNA)	-0.338***	-0.333***	-0.340***	-0.335***	-0.288***	-0.278***	-0.879***	-0.892***
	(-14.31)	(-14.81)	(-14.30)	(-14.77)	(-9.83)	(-9.74)	(-7.78)	(-7.36)
Log(Fund Age)	0.177**	0.179**	0.178**	0.180**	0.151	0.133	0.039	0.323
	(2.45)	(2.57)	(2.49)	(2.61)	(1.32)	(1.18)	(0.15)	(0.66)
Expense Ratio	-0.081**	-0.079*	-0.068	-0.065	-0.056	-0.056	-0.210***	-0.056
	(-2.04)	(-1.94)	(-1.69)	(-1.60)	(-1.36)	(-1.51)	(-2.97)	(-0.70)
Fund Turnover	0.000	0.000	0.000	0.000	0.000*	0.000**	0.000	0.001*
	(1.05)	(1.31)	(1.11)	(1.36)	(2.02)	(2.15)	(0.74)	(1.85)
Fund Return	-0.313***	-0.301***	-0.313***	-0.301***	-0.051*	-0.100***	-0.574***	-0.180***
	(-10.00)	(-9.70)	(-9.99)	(-9.72)	(-2.00)	(-5.72)	(-5.44)	(-3.56)
Fund Flow	0.016***	0.019***	0.016***	0.019***	0.019***	0.022***	-0.030	0.037**
	(4.99)	(5.59)	(5.01)	(5.64)	(4.75)	(4.98)	(-0.82)	(2.46)
Obs	574,418	574,418	574,418	574,418	502,880	502,880	574,418	502,880
R-squared	0.744	0.113	0.744	0.113	0.090	0.094	0.051	0.053
Fund FE	Y	Y	Y	Y	Y	Y	Y	Y
Month FE	Y	Y	Y	Y	Y	Y	Y	Y

Panel B: Difference-In-Differences Estimates of Fund Return (in %) and Value Added (in Millions) Around FATCA

	Return		Gross-of-Fee Return		Risk-adjusted Return		Value Added	
	Return	STYRET	Return	STYRET	FFC4	FFC8	STYRET	FFC8
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
US Sale × Pre FATCA^{-1}	-0.110	-0.100	-0.110	-0.101	0.088	0.063	0.251	0.322
	(-1.28)	(-1.18)	(-1.28)	(-1.19)	(1.15)	(0.76)	(0.96)	(1.12)
US Sale × Post FATCA 3Y	0.193***	0.178***	0.192***	0.177***	0.139**	0.106**	1.200***	0.932***
	(3.08)	(3.02)	(3.07)	(3.01)	(2.25)	(2.12)	(5.57)	(4.42)
Log(Fund TNA)	-0.338***	-0.332***	-0.339***	-0.334***	-0.289***	-0.278***	-0.880***	-0.893***
	(-14.37)	(-14.86)	(-14.35)	(-14.82)	(-9.59)	(-9.50)	(-7.75)	(-7.32)
Log(Fund Age)	0.176**	0.178**	0.177**	0.179**	0.151	0.133	0.039	0.324
	(2.40)	(2.52)	(2.44)	(2.56)	(1.32)	(1.18)	(0.15)	(0.67)
Expense Ratio	-0.082**	-0.080*	-0.068*	-0.066	-0.055	-0.056	-0.209***	-0.055
	(-2.08)	(-1.98)	(-1.73)	(-1.64)	(-1.34)	(-1.48)	(-2.95)	(-0.68)
Fund Turnover	0.000	0.000	0.000	0.000	0.000*	0.000**	0.000	0.001*
	(1.07)	(1.32)	(1.13)	(1.37)	(1.98)	(2.12)	(0.73)	(1.82)
Fund Return	-0.314***	-0.301***	-0.314***	-0.302***	-0.050*	-0.100***	-0.574***	-0.179***
	(-10.17)	(-9.86)	(-10.16)	(-9.88)	(-2.00)	(-5.71)	(-5.43)	(-3.56)
Fund Flow	0.016***	0.019***	0.016***	0.019***	0.019***	0.022***	-0.031	0.036**
	(4.95)	(5.54)	(4.97)	(5.58)	(4.76)	(5.06)	(-0.82)	(2.44)
Obs	574,418	574,418	574,418	574,418	502,880	502,880	574,418	502,880
R-squared	0.744	0.113	0.744	0.113	0.090	0.094	0.051	0.053
Fund FE	Y	Y	Y	Y	Y	Y	Y	Y
Month FE	Y	Y	Y	Y	Y	Y	Y	Y

Table 3: Fund Performance Around FATCA by Fund Characteristics

Panel A presents difference-in-differences estimates in the following monthly panel regressions (with fund and month fixed effects and their corresponding t-statistics with standard errors clustered at domicile country level):

$$Perf_{f,t} = \alpha + \beta_1 USSale_f \times Post_t + \beta_2 USSale_f \times Post_t \times Char_f + \beta_3 Post_t \times Char_f + \gamma N_{f,t-1} + e_{f,t},$$

where $Perf_{f,t}$ refers to the monthly net-of-fee return (Models 1–6) or style-adjusted return (Models 7–12) of offshore fund f in month t. $USSale_f$ refers to a dummy variable that equals 1 if offshore fund f is sold to U.S. investors, and 0 if it is not. $Post_t$ refers to a dummy variable: *Post FATCA 3Y* equals 1 for three years after the implementation of FATCA (i.e., 2014:07–2017:06), and 0 for three years before its implementation (i.e., 2011:07–2014:06). $Char_f$ refers to a list of fund characteristics: *Haven* refers to a dummy variable that equals 1 if a fund's domicile country is identified as a tax haven, and 0 otherwise; *TIEA Haven* refers to a dummy variable that equals 1 if a fund's domicile country is identified as a tax haven and signed a bilateral TIEA with the U.S. prior to FATCA, and 0 otherwise; *Non-TIEA Haven* refers to a dummy variable that equals 1 if a fund's domicile country is identified as a tax haven and did not sign a bilateral TIEA with the U.S. prior to FATCA, and 0 otherwise; *Tax Managed* refers to a dummy variable that equals 1 for income funds and 0 for accumulation funds; TR^2 refers to the average R-square obtained from a regression of fund returns on the international eight-factor model over the three-year period before FATCA; *FlowVol* refers to the standard deviation of monthly fund flows over the three-year period before FATCA; and *Fund Size* refers to the logarithm of fund TNA at the end of the month before FATCA. Vector *N* stacks all other fund control variables, including *Log(Fund TNA), Log(Fund Age), Expense Ratio, Fund Turnover, Fund Return,* and *Fund Flow.* Panel B presents similar statistics when $Perf_{f,t}$ is measured by value added of offshore fund f in month t, with Models 1–6 based on style-adjusted return and Models 7–12 based on an international eight-factor model. Appendix A provides a detailed definition for each variable. Numbers with *, **, and *** are significant at the 10%, 5%, and 1% level, respectively.

Table 3—Continued

Panel A: Difference-In-Differences Estimates of Fund Return (in %) Around FATCA

	Return						STYRET					
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10	Model 11	Model 12
US Sale × Post FATCA 3Y	-0.035	-0.035	0.097***	0.336***	0.262***	-0.475*	-0.077*	-0.077*	0.082**	0.317***	0.240***	-0.465*
	(-0.85)	(-0.85)	(2.76)	(3.05)	(5.52)	(-1.74)	(-1.86)	(-1.86)	(2.62)	(3.17)	(4.91)	(-1.96)
US Sale × Post FATCA 3Y × Haven	0.127***						0.164***					
	(2.95)						(3.84)					
US Sale × Post FATCA 3Y × TIEA Haven		0.113**						0.153***				
		(2.65)						(3.55)				
US Sale × Post FATCA 3Y × Non-TIEA Haven		0.182***						0.206***				
		(4.72)						(5.42)				
US Sale × Post FATCA 3Y × Tax Managed			0.224***						0.232***			
			(3.54)						(3.76)			
US Sale × Post FATCA 3Y × TR^2				-0.049**						-0.048**		
				(-2.16)						(-2.40)		
US Sale × Post FATCA 3Y × FlowVol					-0.038***						-0.036***	
					(-3.13)						(-3.09)	
US Sale × Post FATCA 3Y × Fund Size						0.034**						0.033**
						(2.30)						(2.58)
Post FATCA 3Y × Haven	0.112**						0.101**					
	(2.24)						(2.13)					
Post FATCA 3Y × TIEA Haven		0.112**						0.099**				
		(2.22)						(2.07)				
Post FATCA 3Y × Non-TIEA Haven		0.111**						0.109**				
		(2.29)						(2.40)				
Post FATCA 3Y × Tax Managed			-0.150***						-0.148***			
			(-2.99)						(-3.14)			
Post FATCA 3Y × TR^2				-0.008						-0.020		
				(-0.28)						(-0.81)		
Post FATCA 3Y × FlowVol					0.040***						0.043***	
					(3.43)						(3.76)	
Post FATCA 3Y × Fund Size						-0.025						-0.030*
						(-1.41)						(-1.88)
Log(Fund TNA)	-0.331***	-0.330***	-0.331***	-0.336***	-0.339***	-0.327***	-0.327***	-0.327***	-0.327***	-0.330***	-0.336***	-0.322***
	(-14.11)	(-14.09)	(-13.91)	(-12.56)	(-13.83)	(-13.65)	(-14.36)	(-14.38)	(-14.21)	(-12.78)	(-14.13)	(-13.90)
Log(Fund Age)	0.082*	0.082*	0.093**	0.108**	0.081*	0.085*	0.088*	0.088*	0.098**	0.111**	0.085*	0.087*
	(1.90)	(1.90)	(2.06)	(2.10)	(1.78)	(1.91)	(2.03)	(2.02)	(2.17)	(2.14)	(1.87)	(1.96)
Expense Ratio	-0.092***	-0.092***	-0.090***	-0.101***	-0.087***	-0.094***	-0.088***	-0.088***	-0.085***	-0.098***	-0.084***	-0.090***
	(-3.06)	(-3.05)	(-3.09)	(-3.18)	(-2.94)	(-3.16)	(-2.86)	(-2.86)	(-2.89)	(-3.05)	(-2.79)	(-2.96)
Fund Turnover	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	(0.86)	(0.87)	(0.84)	(0.78)	(0.86)	(0.83)	(1.11)	(1.12)	(1.10)	(1.02)	(1.10)	(1.10)
Fund Return	-0.251***	-0.251***	-0.251***	-0.239***	-0.246***	-0.250***	-0.238***	-0.238***	-0.239***	-0.227***	-0.234***	-0.238***
	(-8.71)	(-8.72)	(-8.77)	(-8.38)	(-8.87)	(-8.73)	(-8.71)	(-8.71)	(-8.75)	(-8.28)	(-8.79)	(-8.73)
Fund Flow	0.012***	0.012***	0.012***	0.014***	0.015***	0.012***	0.015***	0.015***	0.014***	0.017***	0.017***	0.014***
	(3.26)	(3.24)	(3.12)	(3.40)	(3.67)	(2.98)	(3.91)	(3.91)	(3.78)	(4.15)	(4.42)	(3.57)
Obs	574,418	574,418	574,418	518,825	559,492	574,418	574,418	574,418	574,418	518,825	559,492	574,418
R-squared	0.700	0.700	0.700	0.700	0.702	0.700	0.121	0.121	0.122	0.123	0.122	0.121
Fund FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Month FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

Table 3—Continued

Panel B: Difference-In-Differences Estimates of Value Added (in Millions) Around FATCA												
	STYRET						FFC8					
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10	Model 11	Model 12
US Sale × Post FATCA 3Y	-0.185	-0.185	1.022***	3.359***	2.100***	-15.261***	-0.023	-0.023	0.759***	2.519***	1.596***	-9.404***
	(-0.93)	(-0.93)	(6.18)	(5.84)	(5.10)	(-6.89)	(-0.04)	(-0.04)	(3.90)	(7.11)	(3.80)	(-3.52)
US Sale × Post FATCA 3Y × Haven	1.095***						0.789					
	(4.26)						(1.40)					
US Sale × Post FATCA 3Y × TIEA Haven		1.231***						0.894				
		(5.67)						(1.63)				
US Sale × Post FATCA 3Y × Non-TIEA Haven		0.565**						0.329				
		(2.50)						(0.60)				
US Sale × Post FATCA 3Y × Tax Managed			0.012						-0.144			
			(0.04)						(-0.37)			
US Sale × Post FATCA 3Y × TR^2				-0.611***						-0.456***		
				(-5.00)						(-6.51)		
US Sale × Post FATCA 3Y × FlowVol					-0.312***						-0.242***	
					(-4.10)						(-3.24)	
US Sale × Post FATCA 3Y × Fund Size						0.861***						0.529***
						(6.96)						(3.55)
Post FATCA 3Y × Haven	0.402**						0.128					
	(2.12)						(0.71)					
Post FATCA 3Y × TIEA Haven		0.348*						0.103				
		(1.90)						(0.57)				
Post FATCA 3Y × Non-TIEA Haven		0.619***						0.245				
		(3.23)						(1.24)				
Post FATCA 3Y × Tax Managed			-0.416**						-0.331***			
			(-2.56)						(-3.18)			
Post FATCA 3Y × TR^2				-0.077						0.111**		
				(-1.43)						(2.16)		
Post FATCA 3Y × FlowVol					0.171***						0.086**	
					(3.84)						(2.30)	
Post FATCA 3Y × Fund Size						-0.289						-0.036
						(-1.69)						(-0.24)
Log(Fund TNA)	-0.877***	-0.879***	-0.877***	-0.863***	-0.916***	-0.857***	-0.891***	-0.892***	-0.892***	-0.914***	-0.900***	-0.913***
	(-7.87)	(-7.96)	(-7.82)	(-7.61)	(-7.63)	(-8.09)	(-7.42)	(-7.45)	(-7.43)	(-8.30)	(-7.50)	(-7.36)
Log(Fund Age)	-0.005	-0.005	0.037	0.004	-0.034	-0.011	0.303	0.300	0.328	0.337	0.285	0.362
	(-0.02)	(-0.02)	(0.14)	(0.01)	(-0.13)	(-0.06)	(0.64)	(0.64)	(0.67)	(0.64)	(0.60)	(0.89)
Expense Ratio	-0.204***	-0.204***	-0.197***	-0.221***	-0.192**	-0.207***	-0.054	-0.054	-0.046	-0.063	-0.043	-0.049
	(-2.94)	(-2.94)	(-2.91)	(-2.74)	(-2.72)	(-2.90)	(-0.68)	(-0.68)	(-0.58)	(-0.79)	(-0.54)	(-0.60)
Fund Turnover	0.000	0.000	0.000	0.000	0.000	0.000	0.001*	0.001*	0.001*	0.001	0.001*	0.001*
	(0.86)	(0.85)	(0.80)	(0.75)	(0.86)	(0.89)	(1.94)	(1.91)	(1.89)	(1.62)	(1.95)	(1.76)
Fund Return	-0.576***	-0.576***	-0.578***	-0.581***	-0.574***	-0.578***	-0.181***	-0.181***	-0.183***	-0.186***	-0.182***	-0.180***
	(-5.39)	(-5.39)	(-5.48)	(-5.35)	(-5.42)	(-5.38)	(-3.53)	(-3.53)	(-3.65)	(-3.69)	(-3.55)	(-3.56)
Fund Flow	-0.030	-0.030	-0.031	-0.035	-0.028	-0.034	0.037**	0.037**	0.037**	0.039**	0.037**	0.042***
	(-0.82)	(-0.82)	(-0.85)	(-0.89)	(-0.70)	(-1.19)	(2.46)	(2.47)	(2.44)	(2.57)	(2.34)	(3.44)
Obs	574,418	574,418	574,418	518,825	559,492	574,418	502,880	502,880	502,880	473,785	500,073	502,880
R-squared	0.051	0.051	0.051	0.051	0.051	0.051	0.053	0.053	0.053	0.054	0.053	0.053
Fund FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Month FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

Table 4: Robustness Checks on Fund Performance Around FATCA

Panel A presents difference-in-differences estimates in the following monthly panel regressions (with fund and month fixed effects and their corresponding t-statistics with standard errors clustered at domicile country level):

$$Perf_{f,t} = \alpha + \beta_1 USSale_f \times Pre_t + \beta_2 USSale_f \times Post_t + \gamma N_{f,t-1} + e_{f,t},$$

where $Perf_{f,t}$ refers to the monthly performance of offshore fund f in month t. $USSale_f$ refers to a dummy variable that equals 1 if offshore fund f is sold to U.S. investors, and 0 if it is not. Pre_t refers to a dummy variable that equals 1 for one year before the implementation of FATCA (i.e., 2013:07–2014:06), and 0 otherwise. $Post_t$ refers to a list of dummy variables: *Post FATCA*$^{+1}$ equals 1 for one year after the implementation of FATCA (i.e., 2014:07–2015:06), and 0 otherwise; and *Post FATCA*$^{+2:+3}$ equals 1 for the second and third year after the implementation of FATCA (i.e., 2015:07–2017:06), and 0 otherwise. Vector *N* stacks all other fund control variables, including *Log(Fund TNA), Log(Fund Age), Expense Ratio, Fund Turnover, Fund Return,* and *Fund Flow*. $Perf_{f,t}$ is measured by net-of-fee return (Models 1 and 5) and style-adjusted return (Models 2 and 6), and by value added based on style-adjusted return (Models 3 and 7) and an international eight-factor model (Models 4 and 8). Panel B further employs a propensity score matching (PSM) approach to match the sample of offshore funds sold to U.S. investors (treatment) and those not sold to U.S. investors (control). In particular, we compute propensity scores based on a logistic regression using *Log(Fund TNA), Log(Fund Age), Expense Ratio, Fund Turnover, Fund Return,* and *Fund Flow*. Appendix A provides a detailed definition for each variable. Numbers with *, **, and *** are significant at the 10%, 5%, and 1% level, respectively.

Panel A: Difference-In-Differences Estimates of Fund Return (in %) and Value Added (in Millions) Around FATCA

	Return		Value Added		Return		Value Added	
	Return	STYRET	STYRET	FFC8	Return	STYRET	STYRET	FFC8
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
US Sale × Pre FATCA^{-1}					-0.109	-0.100	0.251	0.322
					(-1.28)	(-1.18)	(0.96)	(1.12)
US Sale × Post FATCA^{+1}	0.299***	0.255***	1.205***	0.827***	0.261***	0.220***	1.296***	0.949***
	(3.82)	(3.22)	(4.99)	(5.11)	(3.51)	(2.97)	(5.01)	(4.71)
US Sale × Post FATCA$^{+2:+3}$	0.197***	0.192**	1.056***	0.801***	0.158*	0.157*	1.147***	0.922***
	(2.84)	(2.71)	(4.51)	(3.67)	(1.76)	(1.72)	(3.85)	(3.56)
Log(Fund TNA)	-0.338***	-0.333***	-0.880***	-0.892***	-0.337***	-0.332***	-0.880***	-0.893***
	(-14.25)	(-14.75)	(-7.80)	(-7.36)	(-14.30)	(-14.79)	(-7.77)	(-7.32)
Log(Fund Age)	0.178**	0.179**	0.039	0.324	0.176**	0.178**	0.040	0.325
	(2.45)	(2.57)	(0.15)	(0.67)	(2.40)	(2.53)	(0.15)	(0.67)
Expense Ratio	-0.081**	-0.079*	-0.210***	-0.056	-0.082**	-0.080*	-0.209***	-0.055
	(-2.05)	(-1.96)	(-2.98)	(-0.70)	(-2.09)	(-2.00)	(-2.95)	(-0.69)
Fund Turnover	0.000	0.000	0.000	0.001*	0.000	0.000	0.000	0.001*
	(1.07)	(1.32)	(0.74)	(1.82)	(1.09)	(1.33)	(0.73)	(1.79)
Fund Return	-0.313***	-0.300***	-0.574***	-0.180***	-0.313***	-0.301***	-0.574***	-0.179***
	(-9.99)	(-9.67)	(-5.43)	(-3.56)	(-10.16)	(-9.83)	(-5.42)	(-3.56)
Fund Flow	0.016***	0.019***	-0.031	0.037**	0.016***	0.019***	-0.031	0.036**
	(4.86)	(5.37)	(-0.82)	(2.41)	(4.82)	(5.32)	(-0.82)	(2.39)
Obs	574,418	574,418	574,418	502,880	574,418	574,418	574,418	502,880
R-squared	0.744	0.113	0.051	0.053	0.744	0.113	0.051	0.053
Fund FE	Y	Y	Y	Y	Y	Y	Y	Y
Month FE	Y	Y	Y	Y	Y	Y	Y	Y

Table 4—Continued

Panel B: Difference-In-Differences Estimates of Fund Return (in %) and Value Added (in Millions) Around FATCA (PSM Sample)								
	Return		Value Added		Return		Value Added	
	Return	STYRET	STYRET	FFC8	Return	STYRET	STYRET	FFC8
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
US Sale × Pre FATCA^{-1}					-0.021	-0.008	-0.002	0.582
					(-0.23)	(-0.09)	(-0.01)	(1.27)
US Sale × Post FATCA^{+1}	0.337***	0.302***	1.927***	1.011***	0.330***	0.299***	1.926***	1.233***
	(4.85)	(4.25)	(5.74)	(4.27)	(5.42)	(5.03)	(5.89)	(4.88)
US Sale × Post FATCA$^{+2:+3}$	0.232***	0.240***	1.083***	0.856***	0.225***	0.237***	1.083**	1.075***
	(4.78)	(5.00)	(3.35)	(2.83)	(3.53)	(3.73)	(2.66)	(2.86)
Log(Fund TNA)	-0.355***	-0.354***	-1.273***	-1.327***	-0.355***	-0.354***	-1.273***	-1.329***
	(-13.74)	(-13.42)	(-6.20)	(-6.55)	(-13.64)	(-13.31)	(-6.19)	(-6.49)
Log(Fund Age)	0.116*	0.123*	-0.387*	-0.311	0.115	0.123*	-0.387*	-0.313
	(1.72)	(1.87)	(-1.96)	(-1.64)	(1.68)	(1.84)	(-1.96)	(-1.65)
Expense Ratio	-0.056	-0.060	-0.202	0.081	-0.056	-0.060	-0.202	0.085
	(-0.69)	(-0.87)	(-1.66)	(0.86)	(-0.69)	(-0.87)	(-1.66)	(0.88)
Fund Turnover	0.000	0.000	0.002***	0.001***	0.000	0.000	0.002***	0.001***
	(1.00)	(1.38)	(3.48)	(3.26)	(0.99)	(1.36)	(3.47)	(3.09)
Fund Return	-0.330***	-0.310***	-0.926***	-0.386***	-0.330***	-0.310***	-0.926***	-0.385***
	(-18.17)	(-16.94)	(-8.65)	(-7.95)	(-18.37)	(-17.10)	(-8.65)	(-7.80)
Fund Flow	0.009	0.013*	-0.140***	0.055**	0.009	0.013*	-0.140***	0.053**
	(1.38)	(1.95)	(-6.74)	(2.11)	(1.39)	(1.95)	(-6.64)	(2.10)
Obs	137,060	137,060	137,060	121,650	137,060	137,060	137,060	121,650
R-squared	0.739	0.113	0.064	0.067	0.739	0.113	0.064	0.067
Fund FE	Y	Y	Y	Y	Y	Y	Y	Y
Month FE	Y	Y	Y	Y	Y	Y	Y	Y

Table 5: Fund Fees Around FATCA

This table presents difference-in-differences estimates in the following annual panel regressions (with fund and year fixed effects and their corresponding t-statistics with standard errors clustered at domicile country level):

$$Fee_{f,t} = \alpha + \beta_1 USSale_f \times Pre_t + \beta_2 USSale_f \times Post_t + \gamma N_{f,t-1} + e_{f,t},$$

where $Fee_{f,t}$ refers to the expense ratio (Models 1–3) or style-adjusted expense ratio (Models 4–6) of offshore fund f in year t. $USSale_f$ refers to a dummy variable that equals 1 if offshore fund f is sold to U.S. investors, and 0 if it is not. Pre_t refers to a dummy variable that equals 1 for one year before the implementation of FATCA (i.e., 2013:07–2014:06), and 0 otherwise. $Post_t$ refers to a list of dummy variables: *Post FATCA 3Y* equals 1 for three years after the implementation of FATCA (i.e., 2015–2017), and 0 for three years before its implementation (i.e., 2011–2013); *Post FATCA*$^{+1}$ equals 1 for one year after the implementation of FATCA (i.e., 2014:07–2015:06), and 0 otherwise; and *Post FATCA*$^{+2:+3}$ equals 1 for the second and third year after the implementation of FATCA (i.e., 2015:07–2017:06), and 0 otherwise. Vector *N* stacks all other fund control variables, including *Log(Fund TNA)*, *Log(Fund Age)*, *Expense Ratio*, *Fund Turnover*, *Fund Return*, and *Fund Flow*. Appendix A provides a detailed definition for each variable. Numbers with *, **, and *** are significant at the 10%, 5%, and 1% level, respectively.

Difference-In-Differences Estimates of Fund Fee (in %) Around FATCA						
	Fee			Style-adjusted Fee		
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
US Sale × Pre FATCA^{-1}			-0.007			-0.008
			(-0.88)			(-0.89)
US Sale × Post FATCA 3Y	-0.028***			-0.029***		
	(-3.40)			(-3.39)		
US Sale × Post FATCA^{+1}		-0.023**	-0.025***		-0.023**	-0.025***
		(-2.41)	(-3.29)		(-2.52)	(-3.49)
US Sale × Post FATCA$^{+2:+3}$		-0.031***	-0.034***		-0.032***	-0.035***
		(-3.30)	(-3.81)		(-3.20)	(-3.60)
Log(Fund TNA)	-0.036***	-0.036***	-0.036***	-0.039***	-0.039***	-0.039***
	(-5.18)	(-5.19)	(-5.19)	(-5.74)	(-5.75)	(-5.76)
Log(Fund Age)	0.018*	0.018*	0.019*	0.021**	0.021**	0.021**
	(1.83)	(1.83)	(1.83)	(2.13)	(2.13)	(2.14)
Expense Ratio	0.198***	0.198***	0.198***	0.199***	0.199***	0.199***
	(5.05)	(5.05)	(5.05)	(5.08)	(5.08)	(5.08)
Fund Turnover	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
	(-0.63)	(-0.58)	(-0.59)	(-0.92)	(-0.86)	(-0.87)
Fund Return	-0.003	-0.003	-0.003	-0.004*	-0.004*	-0.004*
	(-1.57)	(-1.60)	(-1.60)	(-1.77)	(-1.80)	(-1.81)
Fund Flow	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001
	(-1.29)	(-1.30)	(-1.29)	(-0.76)	(-0.76)	(-0.76)
Obs	36,785	36,785	36,785	36,785	36,785	36,785
R-squared	0.935	0.935	0.935	0.934	0.934	0.934
Fund FE	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y

Table 6: Market Delay Around FATCA

Panel A presents the results of the following panel regressions (with stock and country-year or country-industry-year fixed effects and their corresponding t-statistics with standard errors clustered at the stock and year level):

$$Delay_{i,t} = \alpha + \beta_1 IO\_Affected_{i,t} \times Post_t + \beta_2 IO\_NonAffected_{i,t} \times Post_t + \gamma C_{i,t-1} + e_{i,t},$$

where $Delay_{i,t}$ refers to a list of market delay proxies of stock i in year t, including the delay to local market information ($Delay\_Local_{i,t}$), and delay to global market information ($Delay\_Global_{i,t}$). $IO\_Affected_{i,t}$ refers to the percentage ownership held by offshore funds sold to U.S. investors, and $IO\_NonAffected_{i,t}$ refers to the percentage ownership held by funds that are not affected by FATCA. $Post_t$ refers to a dummy variable, i.e., *Post FATCA 3Y* equals 1 for three years after the implementation of FATCA (i.e., 2014:07–2017:06), and 0 for three years before its implementation (i.e., 2011:07–2014:06). Vector *C* stacks all other stock control variables, including *Log(Stock Size)*, *Book-to-Market*, and *Stock Return.* Panel B presents similar statistics when $Post_t$ refers to a list of dummy variables: *Post FATCA*$^{+1}$ equals 1 for one year after the implementation of FATCA (i.e., 2014:07–2015:06), and 0 otherwise; and *Post FATCA*$^{+2:+3}$ equals 1 for the second and third year after the implementation of FATCA (i.e., 2015:07–2017:06), and 0 otherwise. Appendix A provides a detailed definition for each variable. Numbers with *, **, and *** are significant at the 10%, 5%, and 1% level, respectively.

Panel A: Market Delay (in %) Around FATCA

	Delay_Local				Delay_Global			
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
IO_Affected × Post FATCA 3Y	-0.266**	-0.331**	-0.335**	-0.397**	-0.016	-0.054	-0.042	-0.057
	(-2.92)	(-2.71)	(-2.99)	(-2.76)	(-0.24)	(-0.74)	(-0.75)	(-0.86)
IO_Non-Affected × Post FATCA 3Y		0.087		0.086		0.050		0.020
		(1.43)		(1.35)		(1.62)		(0.70)
IO_Affected	0.087	0.113	0.097	0.123*	0.213**	0.228*	0.222**	0.228**
	(1.13)	(1.70)	(1.44)	(2.18)	(2.57)	(2.36)	(3.10)	(3.33)
IO_Non-Affected	-0.005	-0.040*	0.003	-0.032	-0.065	-0.085*	-0.052	-0.060
	(-0.17)	(-2.08)	(0.10)	(-1.62)	(-1.66)	(-2.33)	(-1.33)	(-1.62)
Log(Stock Size)	-2.285***	-2.328***	-2.262***	-2.299***	-1.644***	-1.668***	-1.355***	-1.364***
	(-10.79)	(-10.64)	(-10.52)	(-11.40)	(-5.57)	(-5.10)	(-6.20)	(-6.11)
Book-to-Market	0.117	0.111	0.148	0.138	0.033	0.029	-0.177	-0.180
	(1.14)	(1.09)	(1.13)	(1.07)	(0.19)	(0.20)	(-1.38)	(-1.38)
Stock Return	0.718	0.733	0.808*	0.811*	0.254	0.263	0.277	0.278
	(1.72)	(1.76)	(2.08)	(2.07)	(0.62)	(0.68)	(0.81)	(0.81)
Obs	62,001	62,001	58,092	58,092	62,001	62,001	58,092	58,092
R-squared	0.402	0.402	0.476	0.476	0.420	0.420	0.493	0.493
Stock FE	Y	Y	Y	Y	Y	Y	Y	Y
Country-Year FE	Y	Y	N	N	Y	Y	N	N
Country-Industry-Year FE	N	N	Y	Y	N	N	Y	Y

Table 6—Continued

Panel B: Market Delay (in %) Around FATCA								
	Delay_Local				Delay_Global			
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
IO_Affected × Post FATCA^{+1}	-0.178*	-0.243**	-0.262**	-0.325**	-0.085	-0.123	-0.104	-0.119
	(-2.44)	(-2.98)	(-3.04)	(-3.27)	(-1.31)	(-1.91)	(-1.91)	(-1.93)
IO_Affected × Post FATCA$^{+2:+3}$	-0.326**	-0.391**	-0.384**	-0.445**	0.030	-0.007	-0.001	-0.015
	(-3.01)	(-2.99)	(-2.67)	(-2.65)	(0.43)	(-0.06)	(-0.01)	(-0.21)
IO_Non-Affected × Post FATCA 3Y		0.087		0.085		0.050		0.020
		(1.43)		(1.35)		(1.67)		(0.70)
IO_Affected	0.089	0.115	0.099	0.125*	0.211**	0.226*	0.221**	0.227**
	(1.17)	(1.77)	(1.48)	(2.25)	(2.55)	(2.42)	(3.07)	(3.30)
IO_Non-Affected	-0.005	-0.040*	0.003	-0.032	-0.065	-0.085*	-0.051	-0.060
	(-0.18)	(-2.09)	(0.10)	(-1.63)	(-1.65)	(-2.34)	(-1.33)	(-1.62)
Log(Stock Size)	-2.285***	-2.327***	-2.262***	-2.298***	-1.644***	-1.669***	-1.356***	-1.365***
	(-10.81)	(-10.66)	(-10.49)	(-11.37)	(-5.58)	(-5.09)	(-6.21)	(-6.12)
Book-to-Market	0.117	0.111	0.149	0.139	0.032	0.029	-0.178	-0.180
	(1.14)	(1.09)	(1.13)	(1.07)	(0.19)	(0.19)	(-1.39)	(-1.39)
Stock Return	0.718	0.733	0.807*	0.810*	0.255	0.263	0.278	0.279
	(1.72)	(1.76)	(2.08)	(2.07)	(0.62)	(0.68)	(0.81)	(0.81)
Obs	62,001	62,001	58,092	58,092	62,001	62,001	58,092	58,092
R-squared	0.402	0.402	0.476	0.476	0.420	0.420	0.493	0.493
Stock FE	Y	Y	Y	Y	Y	Y	Y	Y
Country-Year FE	Y	Y	N	N	Y	Y	N	N
Country-Industry-Year FE	N	N	Y	Y	N	N	Y	Y

Table 7: Fund Flow Around FATCA

This table presents difference-in-differences estimates in the following monthly panel regressions (with fund and month fixed effects and their corresponding t-statistics with standard errors clustered at domicile country level):

$$Flow_{f,t} = \alpha + \beta_1 USSale_f \times Pre_t + \beta_2 USSale_f \times Post_t + \gamma N_{f,t-1} + e_{f,t},$$

where $Flow_{f,t}$ refers to the monthly flow (Models 1–3) or style-adjusted flow (Models 4–6) of offshore fund f in month t. $USSale_f$ refers to a dummy variable that equals 1 if offshore fund f is sold to U.S. investors, and 0 if it is not. Pre_t refers to a dummy variable that equals 1 for one year before the implementation of FATCA (i.e., 2013:07–2014:06), and 0 otherwise. $Post_t$ refers to a list of dummy variables: *Post FATCA 3Y* equals 1 for three years after FATCA implementation (i.e., 2015–2017), and 0 for three years before (i.e., 2011–2013); *Post FATCA*$^{+1}$ equals 1 for one year after FATCA implementation (i.e., 2014:07–2015:06), and 0 otherwise; and *Post FATCA*$^{+2:+3}$ equals 1 for the second and third year after FATCA implementation (i.e., 2015:07–2017:06), and 0 otherwise. Vector *N* stacks all other fund control variables, including *Log(Fund TNA)*, *Log(Fund Age)*, *Expense Ratio*, *Fund Turnover*, *Fund Return*, and *Fund Flow*. Appendix A provides a detailed definition for each variable. Numbers with *, **, and *** are significant at the 10%, 5%, and 1% level, respectively.

Difference-In-Differences Estimates of Fund Flow (in %) Around FATCA						
	Flow			Style-adjusted Flow		
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
US Sale × Pre FATCA^{-1}			0.133			0.157
			(0.92)			(1.09)
US Sale × Post FATCA 3Y	-0.260***			-0.253***		
	(-2.78)			(-2.77)		
US Sale × Post FATCA^{+1}		-0.066	-0.018		-0.079	-0.022
		(-0.69)	(-0.13)		(-0.86)	(-0.17)
US Sale × Post FATCA$^{+2:+3}$		-0.368***	-0.320**		-0.350***	-0.293**
		(-3.62)	(-2.44)		(-3.47)	(-2.25)
Log(Fund TNA)	-1.502***	-1.502***	-1.502***	-1.503***	-1.503***	-1.503***
	(-15.92)	(-15.90)	(-15.88)	(-15.86)	(-15.84)	(-15.82)
Log(Fund Age)	-0.493***	-0.492***	-0.492***	-0.487***	-0.487***	-0.487***
	(-5.54)	(-5.54)	(-5.55)	(-5.53)	(-5.52)	(-5.53)
Expense Ratio	0.062	0.061	0.061	0.067	0.066	0.066
	(0.76)	(0.74)	(0.75)	(0.83)	(0.81)	(0.82)
Fund Turnover	0.000	0.000	0.000	0.000	0.000	0.000
	(0.13)	(0.18)	(0.17)	(0.09)	(0.13)	(0.12)
Fund Return	0.145***	0.146***	0.146***	0.146***	0.146***	0.146***
	(4.41)	(4.43)	(4.44)	(4.35)	(4.36)	(4.37)
Fund Flow	0.169***	0.168***	0.168***	0.170***	0.170***	0.170***
	(8.10)	(8.06)	(8.05)	(8.29)	(8.25)	(8.24)
Obs	572,004	572,004	572,004	572,004	572,004	572,004
R-squared	0.104	0.104	0.104	0.100	0.100	0.100
Fund FE	Y	Y	Y	Y	Y	Y
Month FE	Y	Y	Y	Y	Y	Y

Table 8: Fund Flow Around FATCA by Fund Characteristics

This table presents difference-in-differences estimates in the following monthly panel regressions (with fund and month fixed effects and their corresponding t-statistics with standard errors clustered at domicile country level):

$$Flow_{f,t} = \alpha + \beta_1 USSale_f \times Post_t + \beta_2 USSale_f \times Post_t \times Char_f + \beta_3 Post_t \times Char_f + \gamma N_{f,t-1} + e_{f,t},$$

where $Flow_{f,t}$ refers to the monthly flow (Models 1–6) or style-adjusted flow (Models 7–12) of offshore fund f in month t. $USSale_f$ refers to a dummy variable that equals 1 if offshore fund f is sold to U.S. investors, and 0 if it is not. $Post_t$ refers to a dummy variable: *Post FATCA 3Y* equals 1 for three years after the implementation of FATCA (i.e., 2014:07–2017:06), and 0 for three years before its implementation (i.e., 2011:07–2014:06). $Char_f$ refers to a list of fund characteristics: *Haven* refers to a dummy variable that equals 1 if a fund's domicile country is identified as a tax haven, and 0 otherwise; *TIEA Haven* refers to a dummy variable that equals 1 if a fund's domicile country is identified as a tax haven and signed a bilateral TIEA with the U.S. prior to FATCA, and 0 otherwise; *Non-TIEA Haven* refers to a dummy variable that equals 1 if a fund's domicile country is identified as a tax haven and did not sign a bilateral TIEA with the U.S. prior to FATCA, and 0 otherwise; *Tax Managed* refers to a dummy variable that equals 1 for income funds and 0 for accumulation funds; and *Star* refers to the one-year lagged star rating from Morningstar. Vector *N* stacks all other fund control variables, including *Log(Fund TNA)*, *Log(Fund Age)*, *Expense Ratio*, *Fund Turnover*, *Fund Return*, and *Fund Flow*. Appendix A provides a detailed definition for each variable. Numbers with *, **, and *** are significant at the 10%, 5%, and 1% level, respectively.

Table 8—Continued

Difference-In-Differences Estimates of Fund Flow (in %) Around FATCA												
	Flow						Style-adjusted Flow					
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10	Model 11	Model 12
US Sale × Post FATCA 3Y	0.217	0.217	-0.378***	0.542	0.547	-0.198	0.268	0.268	-0.369***	0.603	0.608	-0.183
	(1.40)	(1.40)	(-4.21)	(1.12)	(1.15)	(-0.53)	(1.60)	(1.60)	(-4.22)	(1.22)	(1.25)	(-0.48)
US Sale × Post FATCA 3Y × Haven	-0.416**			-0.503**			-0.467**			-0.555**		
	(-2.21)			(-2.27)			(-2.38)			(-2.43)		
US Sale × Post FATCA 3Y × TIEA Haven		-0.525***			-0.609***			-0.573***			-0.657***	
		(-3.25)			(-3.56)			(-3.30)			(-3.60)	
US Sale × Post FATCA 3Y × Non-TIEA Haven		0.037			-0.062			-0.028			-0.127	
		(0.22)			(-0.33)			(-0.15)			(-0.64)	
US Sale × Post FATCA 3Y × Tax Managed			0.113			0.101			0.117			0.105
			(0.67)			(0.61)			(0.69)			(0.63)
US Sale × Post FATCA 3Y × Star				-0.083	-0.085	-0.065				-0.086	-0.088	-0.067
				(-0.70)	(-0.74)	(-0.51)				(-0.72)	(-0.75)	(-0.52)
Post FATCA 3Y × Haven	-0.267***			-0.277***			-0.257***			-0.266***		
	(-3.40)			(-3.30)			(-3.23)			(-3.14)		
Post FATCA 3Y × TIEA Haven		-0.230***			-0.236***			-0.220***			-0.226***	
		(-3.00)			(-2.96)			(-2.82)			(-2.79)	
Post FATCA 3Y × Non-TIEA Haven		-0.428***			-0.456***			-0.416***			-0.445***	
		(-5.39)			(-5.74)			(-5.05)			(-5.43)	
Post FATCA 3Y × Tax Managed			-0.058			-0.061			-0.055			-0.059
			(-0.69)			(-0.70)			(-0.65)			(-0.65)
Post FATCA 3Y × Star				0.024	0.026	0.025				0.026	0.028	0.027
				(0.60)	(0.65)	(0.67)				(0.65)	(0.70)	(0.72)
US Sale × Star				0.162**	0.159**	0.149*				0.162**	0.159**	0.147*
				(2.33)	(2.22)	(1.88)				(2.30)	(2.19)	(1.83)
Log(Fund TNA)	-1.545***	-1.543***	-1.543***	-1.600***	-1.599***	-1.600***	-1.546***	-1.544***	-1.545***	-1.602***	-1.600***	-1.601***
	(-15.98)	(-15.88)	(-15.99)	(-17.11)	(-17.01)	(-17.08)	(-16.01)	(-15.90)	(-16.02)	(-17.17)	(-17.07)	(-17.15)
Log(Fund Age)	-0.253***	-0.251***	-0.294***	-0.221***	-0.219***	-0.264***	-0.248***	-0.245***	-0.288***	-0.215***	-0.213***	-0.258***
	(-3.50)	(-3.53)	(-4.36)	(-3.21)	(-3.22)	(-4.16)	(-3.54)	(-3.56)	(-4.43)	(-3.24)	(-3.25)	(-4.22)
Expense Ratio	0.033	0.031	0.039	0.039	0.038	0.046	0.036	0.035	0.042	0.043	0.041	0.049
	(0.25)	(0.24)	(0.29)	(0.27)	(0.26)	(0.32)	(0.27)	(0.26)	(0.32)	(0.30)	(0.29)	(0.34)
Fund Turnover	-0.000	-0.000	0.000	0.000	0.000	0.000	-0.000	-0.000	-0.000	0.000	0.000	0.000
	(-0.11)	(-0.09)	(0.00)	(0.06)	(0.08)	(0.18)	(-0.15)	(-0.13)	(-0.04)	(0.02)	(0.03)	(0.13)
Fund Return	0.149***	0.149***	0.147***	0.133***	0.133***	0.131***	0.150***	0.150***	0.148***	0.134***	0.134***	0.132***
	(4.48)	(4.48)	(4.47)	(3.94)	(3.94)	(3.93)	(4.39)	(4.39)	(4.38)	(3.87)	(3.87)	(3.86)
Fund Flow	0.155***	0.155***	0.156***	0.140***	0.140***	0.141***	0.158***	0.158***	0.159***	0.143***	0.143***	0.143***
	(7.78)	(7.77)	(7.87)	(7.39)	(7.38)	(7.51)	(7.98)	(7.97)	(8.07)	(7.61)	(7.60)	(7.73)
Star				0.315***	0.314***	0.314***				0.314***	0.314***	0.313***
				(7.31)	(7.32)	(7.43)				(7.24)	(7.25)	(7.34)
Obs	488,753	488,753	488,753	488,753	488,753	488,753	488,753	488,753	488,753	488,753	488,753	488,753
R-squared	0.091	0.091	0.091	0.092	0.092	0.092	0.088	0.088	0.088	0.089	0.089	0.089
Fund FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Month FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

Table IA1: Fund Performance Around FATCA

Panel A presents difference-in-differences estimates in the following monthly panel regressions (with fund and month fixed effects and their corresponding t-statistics with standard errors clustered at domicile country level):

$$Perf_{f,t} = \alpha + \beta_1 USSale_f \times Post_t + \gamma N_{f,t-1} + e_{f,t},$$

where $Perf_{f,t}$ refers to the monthly performance of offshore fund f in month t. $USSale_f$ refers to a dummy variable that equals 1 if offshore fund f is sold to U.S. investors, and 0 if it is not. $Post_t$ refers to a dummy variable, i.e., *Post FATCA 3Y* equals 1 for three years after the implementation of FATCA (i.e., 2014:07–2017:06), and 0 for three years before its implementation (i.e., 2011:07–2014:06). Vector *N* stacks all other fund control variables, including *Log(Fund TNA), Log(Fund Age), Expense Ratio, Fund Turnover, Fund Return,* and *Fund Flow.* $Perf_{f,t}$ is measured by net-of-fee return and style-adjusted return (Models 1 and 2), gross-of-fee return and style-adjusted return (Models 3 and 4), risk-adjusted return based on a domestic four-factor model (market, size, book-to-market, and momentum) (Model 5) and international eight-factor model including four domestic factors and four international factors (Model 6). All specifications employ ordinary least squares regression. Panel B presents similar statistics, with $Perf_{f,t}$ measured by net-of-fee style-adjusted return (Models 1–3, weighted least squares) and value added based on style-adjusted return (Models 4–6, ordinary least squares). Standard errors are clustered by domicile country and month (Models 1 and 4), fund (Models 2 and 5), and region of sale (Models 3 and 6). Appendix A provides a detailed definition for each variable. Numbers with *, **, and *** are significant at the 10%, 5%, and 1% level, respectively.

Panel A: Difference-In-Differences Estimates of Fund Return (in %) Around FATCA

	Return		Gross-of-Fee Return		Risk-adjusted Return	
	Return	STYRET	Return	STYRET	FFC4	FFC8
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
US Sale × Post FATCA 3Y	0.157***	0.143***	0.156***	0.142***	0.060***	0.048***
	(4.26)	(4.24)	(4.25)	(4.24)	(3.25)	(2.71)
Log(Fund TNA)	-0.331***	-0.327***	-0.331***	-0.328***	-0.310***	-0.302***
	(-14.04)	(-14.29)	(-14.13)	(-14.39)	(-25.93)	(-25.40)
Log(Fund Age)	0.094**	0.098**	0.093**	0.098**	0.030	0.025
	(2.07)	(2.18)	(2.07)	(2.18)	(1.19)	(1.01)
Expense Ratio	-0.094***	-0.090***	-0.082**	-0.078**	-0.065***	-0.069***
	(-3.15)	(-2.94)	(-2.70)	(-2.51)	(-3.81)	(-3.52)
Fund Turnover	0.000	0.000	0.000	0.000	0.000***	0.000***
	(0.79)	(1.05)	(0.80)	(1.05)	(4.90)	(4.91)
Fund Return	-0.250***	-0.238***	-0.250***	-0.238***	-0.062***	-0.091***
	(-8.73)	(-8.73)	(-8.74)	(-8.75)	(-11.96)	(-18.51)
Fund Flow	0.012***	0.015***	0.012***	0.015***	0.022***	0.023***
	(3.17)	(3.83)	(3.13)	(3.80)	(8.29)	(8.79)
Obs	574,418	574,418	574,418	574,418	502,880	502,880
R-squared	0.700	0.121	0.700	0.122	0.095	0.100
Fund FE	Y	Y	Y	Y	Y	Y
Month FE	Y	Y	Y	Y	Y	Y
Cluster	Domicile	Domicile	Domicile	Domicile	Domicile	Domicile

Table IA1—Continued

Panel B: Difference-In-Differences Estimates of Fund Return (in %) and Value Added (in Millions) Around FATCA						
	STYRET			Value Added (STYRET)		
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
US Sale × Post FATCA 3Y	0.214**	0.214***	0.214***	1.109**	1.109***	1.109***
	(2.69)	(6.23)	(4.39)	(2.57)	(8.30)	(4.86)
Log(Fund TNA)	-0.333***	-0.333***	-0.333***	-0.879***	-0.879***	-0.879***
	(-4.42)	(-18.64)	(-11.48)	(-3.76)	(-21.56)	(-6.05)
Log(Fund Age)	0.179*	0.179***	0.179***	0.039	0.039	0.039
	(1.74)	(5.17)	(3.89)	(0.09)	(0.54)	(0.20)
Expense Ratio	-0.079*	-0.079**	-0.079***	-0.210***	-0.210***	-0.210***
	(-1.73)	(-2.15)	(-3.13)	(-2.85)	(-3.10)	(-3.51)
Fund Turnover	0.000	0.000**	0.000	0.000	0.000*	0.000
	(1.01)	(2.02)	(1.37)	(0.63)	(1.69)	(0.86)
Fund Return	-0.301***	-0.301***	-0.301***	-0.574**	-0.574***	-0.574***
	(-3.03)	(-30.34)	(-9.52)	(-2.58)	(-26.01)	(-5.12)
Fund Flow	0.019*	0.019***	0.019***	-0.030	-0.030**	-0.030
	(1.94)	(4.02)	(5.31)	(-0.74)	(-2.42)	(-0.86)
Obs	574,418	574,418	574,418	574,418	574,418	574,418
R-squared	0.113	0.113	0.113	0.051	0.051	0.051
Fund FE	Y	Y	Y	Y	Y	Y
Month FE	Y	Y	Y	Y	Y	Y
Cluster	Domicile, Month	Fund	Region of Sale	Domicile, Month	Fund	Region of Sale