Financial Conduct Authority

Occasional Paper 30

Best buys and own brands: investment platforms' recommendations of funds

Gordon Cookson, Tim Jenkinson, Howard Jones and Jose Vicente Martinez

FCA occasional papers in financial regulation

The FCA occasional papers

The FCA is committed to encouraging debate on all aspects of financial regulation and to creating rigorous evidence to support its decision-making. To facilitate this, we publish a series of Occasional Papers, extending across economics and other disciplines.

The main factor in accepting papers is that they should make substantial contributions to knowledge and understanding of financial regulation. If you want to contribute to this series or comment on these papers, please contact Peter Lukacs or Kevin James at peter.lukacs@fca.org.uk and kevin.james@fca.org.uk.

Disclaimer

Occasional Papers contribute to the work of the FCA by providing rigorous research results and stimulating debate. While they may not necessarily represent the position of the FCA, they are one source of evidence that the FCA may use while discharging its functions and to inform its views. The FCA endeavours to ensure that research outputs are correct, through checks including independent referee reports, but the nature of such research and choice of research methods is a matter for the authors using their expert judgement. To the extent that Occasional Papers contain any errors or omissions, they should be attributed to the individual authors, rather than to the FCA.

Authors

Gordon Cookson, Tim Jenkinson, Howard Jones, and Jose Vicente Martinez.

Gordon Cookson (gordon.cookson@fca.org.uk) is with the U.K. Financial Conduct Authority.

Tim Jenkinson (tim.jenkinson@sbs.ox.ac.uk) and Howard Jones (howard.jones@sbs.ox.ac.uk) are with the Saïd Business School, University of Oxford.

Jose Vicente Martinez (jose.v.martinez@uconn.edu) is with the University of Connecticut.

Acknowledgements

All our publications are available to download from www.fca.org.uk. If you would like to receive this paper in an alternative format, please call 020 7066 9644 or email publications_graphics@fca.org.uk or write to Editorial and Digital Department, Financial Conduct Authority, 25 The North Colonnade, Canary Wharf, London E14 5HS.

Contents

1   Introduction

Background

Investment platforms, also known as 'fund supermarkets', are important intermediaries in fund investment. These web-based services allow retail investors to research, buy and sell, manage, and monitor their holdings in funds. The U.K. fund industry, which is the focus of this paper, is one of the largest outside the U.S., with some GBP1.2 trillion of assets under management.[1] Investment platforms have been growing in significance: fund assets held in U.K. platforms rose from around GBP100 billion at the end of 2008 to over GBP500 billion at the end of 2015, and platforms now channel over 50% of U.K. fund flows. Investment platforms offer investors a wide array of funds to choose from, and like other intermediaries, many platforms pick out a short list of funds to 'recommend' to investors.[2] Given the growing importance of platforms and the fact that their 'recommendations' are made available directly to their users, they have become increasingly a focus of attention in the U.K., particularly because, in two ways, platforms are exposed to potential conflicts of interest when making 'recommendations'. First, some leading platforms are affiliated with funds, such that their 'own brands' are also offered through that supermarket.[3] Second, until a regulatory change which came into full effect in 2016, platforms in the U.K. could receive from funds a share of the fee revenue on investments which were channeled through the platform.

As part of a review of the asset management industry by the U.K. Financial Conduct Authority (the 'FCA'), we have access to detailed, non-public data for three leading direct-to-consumer platforms over the period 2006–2015 including access to platforms' recommendations of funds.[4] Each of these platforms covers on average 45% by number, and 75% by value, of all funds available to retail investors in the U.K. Together these three platforms have a share of over 50% of assets under administration of all U.K. platforms. As well as platforms' recommendations across a wide range of asset classes and investment regions, our data set includes precise details of the fees charged by asset managers, the fraction of these fees shared with platforms and, for two of the platforms, the investor flows into funds which were channeled through the platforms. This allows us to link recommendations with incentives, flows, and performance in a way which has not been possible in previous studies of fund intermediation.

We use this unique data set to address three main questions. First, what drives platform recommendations? Second, what effect do these recommendations have on fund flows? And, third, do these recommendations add value for investors? In answering all these

---

[1] As estimated by the Investment Company Institute (2017),

[2] Platforms in the UK will typically state that these best buy lists or top picks are not recommendations, potentially to avoid giving the impression they are providing financial advice. This is because firms providing financial advice may face additional regulatory requirements. In the remainder of this paper we use the term 'recommendations' purely for convenience to describe platform best buy or top pick lists.

[3] We define affiliated funds to be those where the platform provider is also the asset manager of that fund (i.e. the manufacturer), or where the platform provider is also the distributor of that fund (but not necessarily the manufacturer, for example under a white label arrangement).

[4] The FCA completed its asset management market study in June 2017.

questions we also assess the effect on drivers, flows, and performance of the two potential sources of conflicts of interest mentioned above, namely affiliation and revenue-sharing.

Key findings

Looking first at the drivers of recommendations, we find that affiliated funds are more likely to be recommended by platforms. Controlling for past performance, Morningstar analyst rankings, costs, and other variables, affiliated funds are significantly more likely to be added to the recommendation list than non-affiliated funds. Average model-implied addition probabilities, across the three platforms and the whole data sample, for affiliated funds are three times as large as for otherwise identical non-affiliated funds. At the same time, other things equal, affiliated funds are less likely to be deleted from recommendation lists than non-affiliated funds. We estimate that these differences in addition and deletion probabilities imply a long term, equilibrium, percentage of non-affiliated funds in recommendation lists equal to 3.6%, compared to 13.8% for otherwise identical affiliated funds. Thus, the long-term percentage of recommended affiliated funds is on average 3.8 times larger than the percentage of recommended non-affiliated funds. We also find that this tendency to recommend affiliated funds has increased since regulatory changes have been introduced that prohibit commission-sharing with funds.

We also find that recommended funds share a higher proportion of their revenues with the platforms than non-recommended funds. All else equal, an increase in platform revenues received from the fund of 25bps (the interquartile range) implies across the platforms, an average increase in the long-term percentage of funds in recommendation lists from 3.87% for funds with existing revenue share agreements to 5.18% (for otherwise identical funds with revenue share agreements 25bps higher).

It is conceivable that platforms favour affiliated and high revenue-sharing funds in their recommendations because of some characteristic which is unobservable to the econometrician. As a further test for this, we investigate whether funds affiliated with a platform and those sharing high levels of revenues with platforms are also favoured in recommendations by analysts producing the Morningstar Analyst Rating who, like platforms, are making forward-looking recommendations (but do not face the same conflicting incentives as platforms), and we find that they are not.

Apart from affiliation and revenue sharing, we find that, on average, recommended funds had exhibited significantly better past performance than the non-recommended funds on the same platform. The percentage of funds rated as gold, silver, or bronze by the Morningstar Analyst Rating, a forward looking third-party measure of quality, is also significantly larger among recommended than non-recommended funds. Recommended funds tend to have a lower expense ratio, making them less costly to investors in fee terms.

Turning to the impact of recommendations on flows, our analysis shows that platform recommendations have a substantial impact on flows. Every year following the addition of a fund to a platform's recommendation list and while still recommended, that fund experiences an average inflow of GBP5.9 million, equating to 1% of the total assets under management of the fund (and not just those invested through the platform). When we interact recommendations with the first of our two possible conflict measures –

affiliation – we find that GBP flows are less responsive to the recommendation of a fund affiliated with a platform. This may indicate that investors discount, to some extent, the own-brand recommendations of platforms. We find no significant effect, however, in the case of percentage flows. On the other hand, the response of flows to recommendations does not vary significantly with revenue-sharing, suggesting that investors do not offset platforms' biases along this dimension. The different responses of flows to affiliated and high revenue-sharing funds likely reflect the fact that fund affiliation is evident to investors whereas, in the U.K., revenue-sharing agreements are not disclosed.

As for our third question, whether recommendations add value for investors, we measure the performance of funds recommended by platforms on two bases: first assuming that funds are held only for the period during which they are recommended and second, to allow for less responsiveness by investors, assuming that investors hold the recommended funds for five years starting from the first recommendation date (or until the end of our sample period). On the first of the two approaches, over our 10-year sample period, a portfolio comprising all funds recommended by platforms delivered average net returns in excess of Morningstar category benchmarks of 0.08% per year. In contrast, non-recommended funds available on the same platform under-perform the benchmarks by 0.86% per year. This makes the excess returns of recommended funds a statistically significant 0.94% per annum higher than the excess returns obtained by non-recommended funds available via the same platform. When we compare the returns of recommended funds to a matched sample of non-recommended funds classified in the same Morningstar asset category, which is a closer comparison, the results are similar: recommended funds outperform non-recommended funds by a statistically significant 0.60% per year. We also find that the level of revenue sharing has little impact on these patterns: recommended funds with both high and low revenue-sharing significantly outperform non-recommended funds (at least when measured using five-year holding periods). When we measure the performance of recommended funds on our second measure, which assumes a five-year holding period, we find qualitatively similar results.

However, these performance differences do not hold for the affiliated recommended funds, which perform no better than other available funds in the same Morningstar category (and available via the same platform). This is consistent with platforms being guided by favouritism, rather than private information, when adding own-brand funds to their best-buy lists.

The remainder of the paper proceeds as follows. In section 2 we describe the institutional setting and our unique dataset. Section 3 analyses the determinants of recommendations and their effect on fund flows. In section 4 we compare the performance of funds that appear on best-buy lists to those that do not, and how this performance differs for affiliated funds. Section 5 concludes.

Equality and diversity considerations

We have considered the equality and diversity issues that may arise from the contents of this Occasional Paper.

Overall, we do not consider that the proposals in this Occasional Paper adversely impact any of the groups with protected characteristics i.e. age, disability, sex, marriage or civil

partnership, pregnancy and maternity, race, religion and belief, sexual orientation and gender reassignment.

2   Industry setting and data

The role of investment platforms

Investment platforms are web-based services which allow retail investors to research, buy and sell, manage, and monitor their holdings in funds.[5] They are an important and growing distribution channel in many countries. In the U.K., assets under administration held in platforms rose from around GBP100 billion at the end of 2008 to over GBP500 billion at the end of 2015 (Platforum (2016)). Platforms accounted for 52% of gross sales of funds to retail investors in 2015, representing GBP83 billion (Investment Association (2016)); a third of these platform sales were direct-to-consumer, and two-thirds were intermediated by an advisor (FCA (2016)). In this paper, where we analyze the determinants and impact of platform recommendations, we focus on the direct-to-consumer channel. Sales not involving platforms may be made directly with an asset manager or through an advisor.[6] The leading direct-to-consumer platform in the U.K. is Hargreaves Lansdown, which has a 36% share of assets under administration. The next three largest – Barclays, TD, and Fidelity – have around 10% each. The rest of the market is shared among a large number of smaller players. Of the ten largest U.K. direct-to-consumer platforms by market share, seven are vertically integrated, meaning that they have affiliated funds which they offer via their platform (FCA (2016)).

Investment platforms offer a wide range of funds, which can be classified and ranked by the user according to, among other criteria, asset class, investment style, charges, as well as third-party rankings, notably those of Morningstar.[7] Within its universe of funds, a platform may also provide a list of recommended funds which is updated from time to time. Selection criteria include past performance, perceived risk, charges, process, tenure of the fund manager, as well as third-party rankings. These platform recommendations are the focus of the present paper.[8]

The way in which platforms are remunerated for their services must be seen in the context of a regulatory change which occurred in the U.K. towards the end of our sample period. From 2006, when our sample starts, to 2012, investors paid a single all-in annual fee (and in some cases an initial charge) to the asset manager, who could share this fee with platforms in return for channeling funds to them. The details of such revenue-sharing arrangements were not disclosed and even their existence was unknown to many

---

[5] We use 'investment platform' synonymously with 'fund supermarket'. The term 'investment platform' is sometimes used in the U.K. to include so-called 'wrap' platforms, in which assets other than fund shares (e.g. directly owned equities) may be held, but we do not include these in our definition.

[6] Data for the U.S. market do not allow a straight comparison. Recent Investment Company Industry research (ICI, (2016)) shows that 34% of U.S. fund-owning households bought at least some of their fund shares via a category of channels which includes fund supermarkets, discount brokers, and asset management companies directly, the other channels being employer-sponsored retirement plans and investment professionals (brokers, etc.). A number of U.S. firms which are not primarily platform providers nonetheless offer such a service. For example, Charles Schwab, known primarily as a bank and broker, also provides an investment platform comparable with those in our data set.

[7] This can be done directly on the platform's website or on a spreadsheet downloadable from the website.

[8] Investment platforms in the U.K. are not considered to have fiduciary responsibility towards their clients (see Law Commission 2014).

investors.[9] There were no separate payments to platforms. In particular, there were no 'sales loads' as are commonly paid to intermediaries in the U.S. The value of revenues paid to platforms by funds as part of the revenue-sharing arrangements were typically between 0.5% and 0.75% of the amount invested.[10]

Between 2013 and 2016, the U.K. asset management industry implemented a regulatory change (the Retail Distribution Review, or RDR) which was designed to end revenue-sharing and required investors to pay the platform and the asset manager separately for their services. For platforms, the RDR rules applied to all business (i.e. not just new business) through a 'sunset clause', which required platforms to have completed their transition to RDR rules before 6 April 2016. RDR rules came into force for new business on 6 April 2014. This meant that not all direct-to-consumer platforms (the focus of this paper) implemented RDR at the same time, and indeed, changes occurred at different rates between 2014 and 2016. In order to keep their business under the old and new regimes separate, funds maintained 'bundled' share classes, on which revenues could be shared with platforms, and launched 'clean' share classes, which could not take part in revenue sharing. Many platforms implemented RDR rules through a staggered approach whereby, during a transitional period, they offered clean share classes for new business alongside bundled share classes for existing investors. Each of the three platforms we study switched to clean share classes for new money being invested during the period February 2014 to April 2014. Existing investments could continue in the bundled share classes for longer, pending action by investors to effect a switch to the clean classes. After this point all their clients were being charged a separate distribution (platform) fee, and were either invested in clean share classes, or in bundled share classes where all commission from asset managers was fully passed on to the client. However, even when revenue sharing was allowed in the U.K., there were two notable differences between institutional arrangements in the U.K. and the U.S. First, the amount of the annual (and sometimes) initial fees that funds shared with platforms was not disclosed in the U.K.[11], whereas U.S. funds must disclose their 12b-1 fees, which represent the annual fees and initial charges which fund managers use for marketing and distribution expenses (although the breakdown between revenue sharing and other distribution/marketing costs is not disclosed). Second, there were no sales loads paid directly to U.K. platforms, in contrast to the U.S. fund industry, where front-end loads in particular are an important part of the compensation of intermediaries.

Following the implementation of RDR for platforms, the situation in the U.K. is simple: investors pay one fee to the platform (the platform charge) and a separate fee to the fund manager (the asset manager fee), and there is no sharing of either annual or initial charges.

The dataset

The FCA obtained data from the four largest investment platforms. One of these platforms was excluded from the analysis, as critical data required for our analysis (such

---

[9] The initial charges were typically at levels substantially lower than the maximum level stated in a fund's prospectus. The number of funds levying an initial charge had been declining over time as part of an industry trend towards a zero load environment in the U.K., and by 2012 only a small number of funds levied an initial charge.

[10] There was no cap on the fraction of fees that funds could share with platforms comparable to the cap of 1% which is imposed on the 12b-1 fees that U.S. funds can charge under FINRA regulations.

[11] The inducement rules in place at the time should have made distributors provide a summary disclosure that the platform received payments from the asset managers, but not necessarily how much.

as revenue share data and investment flow data) were not available. The analysis in this paper is therefore based on the remaining three large, well-established platforms. These platforms have a combined share in excess of 50% of the U.K. market for direct-to-consumer assets under administration. None of the smaller platforms, from which data was not obtained, has a market share in excess of 5%. Furthermore, most of them do not produce their own recommendations. Data was provided on a monthly basis from 2006 (or the earliest date when the platform provided recommendations) until 2015.

Each of the platforms in our study makes available to their clients at least one internally produced recommendation list.[12] When a platform has more than one internally prepared recommendation list we aggregate them into a single list per platform. This data allows us to identify, for each platform, when a fund appeared in a recommendation list, the period during which it remained on the list, and (if applicable) the date when the fund was removed from the list. This information is typically not publicly available, as platforms are not required to disclose their historical fund recommendations.

The information requested by the FCA also provided us with information for the same three platforms on their annual core platform charges over time, expressed as a proportion of assets under administration. For each fund share class available on the platforms in our sample we also have historical information on the revenue shared by the fund with platforms in the form of commission, as well as the revenue passed on to a platform's clients in the form of a rebate. The revenue passed on by the fund to the platform and any rebate to platform clients are expressed as a proportion of assets under management. We also have information at a share class level on fund initial charges, expressed as a proportion of initial investment.

Before RDR, the principal source of revenue for investment platforms was a share of annual fees passed onto them by fund managers. Following RDR, the key source of revenue for platforms is a separate platform charge levied directly from investors. Before RDR, the share of fees paid by funds to platforms used to vary by fund and share class; since RDR, platform charges are the same for all funds offered on a platform, but vary from platform to platform. Platform charges in some cases vary according to an investor's portfolio size, with larger portfolios being rewarded with lower platform charges.

We carry out our analysis at the fund level. This is because all fund commentary and other communications regarding the lists discuss the funds at a fund level and not in relation to individual share classes. Because of RDR, funds tend to have clean and bundled retail share classes (at least during part of our sample period, as discussed earlier). If a fund has multiple retail share classes within each of these two categories, we group them into a single clean or bundled group by averaging performance, fees and other charges. We analyze only bundled share classes during the bundled period and clean share classes during the clean period.[13] The bundled and clean share periods are platform-specific and depend on when the platform implemented RDR.

These variables are combined with publicly available monthly data for 2006-2015 on returns, assets under management, and other variables of interest from Morningstar Direct, a third-party source for fund and share class information. Charges data is also

---

[12] Some platforms also make available to their clients recommendation lists produced by third parties not connected to the platform (these external recommendation lists may also be available elsewhere, such as on third party websites).

[13] An exception to this rule is some funds that were only available in clean share format before RDR. Those funds are included in the pre-RDR analysis.

sourced from Morningstar Direct, and is available only annually. The charges data is augmented with charges data obtained by the FCA from a sub-sample of asset managers.

Our sample comprises equity, fixed income, asset allocation, and alternative investment open-ended retail funds available for sale in the U.K., with GBP-denominated share classes. We exclude funds in the following Morningstar broad category groups: commodities, property, money market, convertible and miscellaneous, because none (or almost none) of the funds in these categories ever appeared in the platform recommendation lists in our sample. The excluded categories only represent a small percentage of the funds offered by these platforms. Our dataset contains both currently operating and closed/merged funds.

For our analysis it is important to determine which funds are offered on each platform, as these funds form the pool from which a platform's recommendation lists are drawn. We use two criteria to infer availability in a platform: the existence of revenue share agreements (we only have this information on an end-of-year basis); and within-platform fund flows (this information was obtained by the FCA for two platforms and is available on a monthly basis but only when funds experience flows). We consider a fund as being available on a platform in any given month if there is a revenue share agreement in place and/or if, within three months of the month in question, there are flows within the platform. We find that both indicators coincide in almost all cases.

Of the funds listed on the platforms in our sample, some are affiliated to the platform and others are not affiliated. We use two different Morningstar Direct data fields ('branding name' and 'advisor') to track affiliation from a fund to the platform. Branding name reflects the fund distributor, and advisor is the fund management company. A fund is considered affiliated to a platform if it shares branding name or advisor with the Platform.

Platforms typically carry a large number of funds. As Table I shows, on average each platform in our sample includes 1,595 different funds. This represents 45.2% of the funds available in the U.K. each year during our sample period (in the four large categories we study). The assets under management of these funds are 74.9% of all assets under management by U.K. funds, suggesting that most of the larger funds are available via the platforms.[14] During our sample period, on average of 7.2% of the funds available in the platforms appeared on internally prepared recommendation lists, a percentage that has shown a tendency to decrease over time.

As shown in Table II, funds offered on the platforms in our sample tend to be larger, older, and exhibit better past performance (prior one- and three-year performance and percentage of Morningstar 5 Star rated funds) and expected future performance (percentage of Morningstar gold and gold, silver or bronze rated funds) than those not available on the platforms.[15]

For the purposes of this table, performance percentiles are calculated over the previous one and three years based on funds in the same Morningstar category and assuming no platform rebates, and average platform charges after RDR. Returns and fees and charges

[14] The figures we report are averages across platforms of yearly averages of monthly data for each platform. The sample mean is an average of these averages. Pre-RDR and Post-RDR calculations take into account the different implementation points of RDR in the different platforms.

[15] From a technical point of view what we report here are simple averages using all monthly observations for each fund, and we compute p-values taking into account intra-fund correlations by using standard errors clustered at the fund level. We have three platforms, so each fund enters in our sample up to three times in a single time period. It may enter as an in-platform fund for one of the platforms and not in platform for the other two.

are also not platform-specific, and include an average platform service charge fee for clean share classes post-RDR. We also ignore initial charges, if any. This is in contrast to the rest of our analysis, where we concentrate on within platform comparisons. There, in calculating charges and the returns to investors we take into account all charges and rebates offered by platforms. We do this by assuming investors hold a portfolio of GBP50,000 on a platform in order to calculate platform charges, which typically vary by portfolio size. When there are initial charges we also take their impact on costs and returns into account by assuming a five-year holding period.

The Morningstar Analyst rating reported in Table II is a qualitative, forward-looking measure of performance that reflects an analyst's expectation of a fund's future performance relative to its peers over a business cycle (see Armstrong, Genc, and Verbeek (2016) for more information). The current Morningstar Analyst rating scale was introduced in November 2011 and consists of gold, silver, bronze, neutral and negative ratings. Before this, two different systems were used: elite, superior, standard, inferior, impaired, and an AAA, AA, A system inherited from the acquired business Old Broad Street Research. These were mapped together as follows (thus extending our sample back until 2006): elite and AAA historical ratings mapped directly to the gold ratings cohort, and we labeled them together as "gold". We also create a broader category capturing any level of positive recommendation, which we refer to as "gold, silver or bronze" (and so, in addition to our "gold" category, this includes funds rated as superior, AA, A, silver or bronze).

Table III contains further information about the sample of funds offered and recommended by each platform. It shows that equity funds comprise the most important category both in terms of funds offered (an average of 1,015 funds per year, or 64% of the available funds) and in terms of recommendations (an average of 82 fund recommended per platform per year, or 74% of the recommendations made), followed by fixed income and asset allocation. Alternative investment funds represent only a small fraction of their offering sample.

3   What determines recommendations and do they affect fund flows?

What determines recommendations?

In this section, we explore what determines the listing of a fund in a platform recommendation list. Table IV describes the characteristics of funds which are recommended and those which are not recommended. Our sample contains 330,175 platform-fund-month observations, of which 231,524 are observations from before the implementation of RDR and 98,651 are from after RDR implementation. In the full sample 20,461 platform-fund-month observations correspond to recommended funds and 309,714 to non-recommended funds. P-values for the differences between the mean characteristics of recommended and non-recommended funds are based on standard errors clustered at the fund level.

Overall, on average across the platforms, recommended funds exhibit significantly better past performance. We compute fund performance percentile rankings using past one- and three-year platform-specific returns in excess of Morningstar chosen benchmarks, and we also calculate the percentage of 5-starred Morningstar funds in each group.[16] On the former measure, the average one-year (three-year) past performance ranking of recommended funds is 55.8% (63.4%), whereas the non-recommended funds average 49.0% (48.5%).

The percentage of funds rated as gold, silver, or bronze by the Morningstar Analyst rating, a forward-looking measure of quality, is also significantly larger among recommended funds. 18.0% of recommended funds have the gold rating, compared with only 1.4% of non-recommended funds. Indeed, over 60% (14%) of recommended (non-recommended) funds are rated as gold, silver or bronze, which suggests that platforms are either heavily influenced by Morningstar Analyst ratings when constructing their best-buy lists, or at least that they use similar information and criteria. Recommended funds also tend to be less costly to investors, they are significantly larger in terms of assets under management, possibly in part because of the recommendations, and exhibit higher standard deviations of monthly returns.

Table IV also shows that a significantly higher percentage of affiliated than non-affiliated funds is recommended in these internal lists. Recommended funds also tend to contribute significantly higher revenues to the platforms listing them, per each pound individuals invest in through the platforms, than non-recommended funds.[17]

These characteristics of recommended and non-recommended funds, being univariate and observation weighted, do not necessarily imply any bias in favour of affiliated funds or funds that make larger contributions to platforms. Affiliated funds and funds that make larger revenue contributions to platforms may very well be better funds. After all,

[16] Returns used in the computation of performance ranks are adjusted to reflect all relevant charges and rebates levied by each platform in which the fund is offered. These charges and rebates are computed assuming a total combined investment in funds of GBP 50,000 through the platform. The same applies to fund expenses and charges.

[17] After RDR, funds stopped making payments to platforms and platforms started to charge their customers a flat fee, or a fee that depends on the assets individuals invest through the platforms, but not on the funds they invest in.

recommended funds in general exhibit better past performance, expected future performance, and are on average also cheaper than non-recommended funds, and the same may be true of the subgroup of affiliated and high-contributing funds that are recommended. Even if that were not true, funds in these two categories might also exhibit other characteristics that the analysts preparing recommendations list also favour, like significant size or a long track-record.

Next, we test whether funds affiliated with the platforms and those which pay as commission greater amounts to the platform (as a percentage of assets accumulated through the platform) are treated preferentially relative to non-affiliated funds or funds which pay the platform less. We do so by studying alterations which platforms make to their recommendation lists.[18] Platforms adjust their recommendation lists from time to time by deleting some funds and adding others. We use the following logit models separately to model fund addition and deletion probabilities:

$$P(ACT_{p,f,t} = 1) = \Lambda\big(AFF^{ACT}_{p,f,t-1}\beta^{ACT}_{AFF} + RS^{ACT}_{p,f,t-1}\beta^{ACT}_{RS} + \mathbf{Z}^{ACT}_{p,f,t-1}\boldsymbol{\beta}^{ACT}_{Z}\big), \qquad (1)$$

where $ACT_{p,f,t}$ = $ADD_{p,f,t}$ (Addition) or $DEL_{p,f,t}$ (Deletion) is an indicator variable that takes the value of 1 if fund f is added to, or deleted from, (depending on the specification) the recommendation list in platform p during month t and 0 otherwise, $AFF^{ACT}_{p,f,t-1}$ is an indicator for whether the fund f is affiliated with platform p at the end of month $t-1$, $RS^{ACT}_{p,f,t-1}$ is the revenue obtained by the platform p from each pound individuals invest in fund f through the platform at time $t-1$, and $\mathbf{Z}^{ACT}_{p,f,t-1}$ is a vector of lagged control variables including the pro-rated total cost of the fund assuming a five-year investment or holding period (fund's total expense ratio, plus one fifth of the initial fund charge, plus associated platform charges minus any fund rebates), performance percentiles computed using platform-specific fund returns in excess of Morningstar-chosen category benchmarks over the previous one and three years (platform-specific returns take into account charges and rebates applied by platforms assuming a five-year investment or holding period), the turnover of the fund, the natural logarithm of the fund's size (in millions of GB pounds), fund age, the standard deviation of the fund's return, an indicator variable for whether Morningstar has assigned a five-star rating to the fund, indicator variables for whether Morningstar analysts have assigned a gold, or gold, silver, or bronze rating to the fund, and unreported indicator variables for calendar years and for specific fund types (e.g., equity, fixed income, asset allocation, and alternative investments). The function $\Lambda(z)$ is defined as $\Lambda(z) = \exp(z) / (1 + \exp(z))$.

We estimate different logit regressions for additions to the recommendation lists and deletions from these lists. We also estimate different logit regressions for the full sample (of additions or deletions) as well as for subsamples covering the periods before and after the implementation of RDR by each platform. In all cases we report z-scores based on standard errors clustered at the fund level.

---

[18] List membership depends on these decisions, as well as the initial listing decisions made when a recommendation list is first launched. In our analysis we exclude initial listing decisions since we do not always observe them in our sample (some of them were made before the start of our sample period). It is important to notice, however, that as time passes the importance or influence of initial listings becomes less relevant for current list composition. Including initial listing as additions, for the platforms we have that information, does not significantly alter the results reported below.

If there were favouritism toward affiliated funds then, all else equal, the percentage of affiliated funds recommended would be larger than the percentage of non-affiliated funds recommended. In the long run (steady state equilibrium) these percentages depend exclusively on the conditional probabilities of adding an affiliated fund to the recommendation list (P_{AFF}^{ADD}), removing an affiliated fund from that list (P_{AFF}^{DEL}), adding a non-affiliated fund to the recommendation list (P_{NAFF}^{ADD}), and removing a non-affiliated fund from that list (P_{NAFF}^{DEL}). Favouritism toward affiliated funds implies that $P_{AFF}^{ADD} / (P_{AFF}^{ADD} + P_{AFF}^{DEL}) > P_{NAFF}^{ADD} / (P_{NAFF}^{ADD} + P_{NAFF}^{DEL})$. A sufficient (although not necessary) condition for this inequality to be satisfied is that $P_{AFF}^{ADD} \geq P_{NAFF}^{ADD}$ and $P_{AFF}^{DEL} \leq P_{NAFF}^{DEL}$, with at least one of these two inequalities satisfied in a strict sense. That is, all else equal, affiliated funds have to be more, or at least as, likely to be added to recommendations lists ($\beta_{AFF}^{ADD} \geq 0$, using Equation (1) notation) and less, or at most as, likely to be delisted ($\beta_{AFF}^{DEL} \leq 0$), with at least one of these two inequalities satisfied in a strict sense. Similarly, a sufficient condition for favouritism towards funds paying higher revenues to the platform is that, all else equal, funds contributing higher revenues be more, or at least as, likely to be added to recommendations lists ($\beta_{RS}^{ADD} \geq 0$), and less, or at most as, likely to be delisted ($\beta_{RS}^{ADD} \leq 0$), with at least one of these two conditions satisfied in strict sense.

Table V reports logit coefficient estimates for the various specifications, again pooling together the data from the three platforms. We find that addition probabilities differ significantly between affiliated and non-affiliated funds. For the full sample, the coefficient estimates on our *Affiliated* dummy in the additions model is significantly positive at the 1% level. This indicates that, at identical levels of past performance, external assessments of future performance, costs and other controlled for variables, affiliated funds are significantly more likely to be added to the recommendation list than non-affiliated funds. It should be remembered that these regressions represent average effects, and that the factors influencing recommendations may differ across platforms. The sub-period analysis indicates that this effect is stronger in the post-RDR period. Before RDR there was a modest, but statistically insignificant, preference for own-brand funds. But, since RDR, the probability of being recommended is significantly higher for funds that are affiliated with the platform. These results are mirrored in the deletion models, where the coefficient estimates on our *Affiliated* dummy variable becomes negative and significant at the 1% level in the post-RDR period. This suggest that, other things equal, affiliated funds are at least equally likely, and in some situations, more likely to be deleted from recommendation lists than non-affiliated funds.

To interpret the coefficient estimates we compute average marginal effects. The second part of Table V displays model-implied average marginal effects for the two main variables of interest: *Affiliation* and *Platform Revenue from the Fund*. Using data for the entire sample period, the results show that, all else equal, the predicted probability of being added to a recommendation list in any given month is 0.0017 greater for affiliated funds than for non-affiliated funds. As a result, average model-implied monthly addition probabilities for affiliated funds ($P_{AFF}^{ADD} = 0.0027$) are three times as large as for otherwise identical non-affiliated funds ($P_{NAFF}^{ADD} = 0.0009$).[19] At the same time, deletion probabilities are smaller for affiliated funds than for non-affiliated funds, with differences in deletion probabilities equal to -0.0085 per month for the full sample and a statistically significant

---

[19] Average model implied addition probabilities for affiliated funds, P_{AFF}^{ADD}, are computed as the average across our sample of $\Lambda(\beta_{AFF}^{ADD} + RS_{p,f,t-1}^{ADD}\beta_{RS}^{ADD} + \mathbf{Z}_{p,f,t-1}^{ADD}\boldsymbol{\beta}_{Z}^{ADD})$, whereas average model implied addition probabilities for non-affiliated funds, P_{NAFF}^{ADD}, are computed as the average across our sample of $\Lambda(RS_{p,f,t-1}^{ADD}\beta_{RS}^{ADD} + \mathbf{Z}_{p,f,t-1}^{ADD}\boldsymbol{\beta}_{Z}^{ADD})$. We follow a similar procedure for the computation of affiliated and non-affiliated fund deletion probabilities.

-0.0290 per month for the post-RDR sample. To understand the impact of these differences in addition and deletion probabilities it is useful to think on their implications for the long-term percentage of affiliated and non-affiliated funds being recommended. Using average model implied estimates of addition and deletion probabilities, across the three platforms, the long term, equilibrium, percentage of non-affiliated funds in recommendation lists, $P_{NAFF}^{ADD}/(P_{NAFF}^{ADD} + P_{NAFF}^{DEL})$ = 0.0009 / (0.0009 + 0.0252), is 3.63%, compared to 13.81% ($P_{AFF}^{ADD}/(P_{AFF}^{ADD} + P_{AFF}^{DEL})$ = 0.0027 / (0.0027 + 0.0167)), for otherwise identical affiliated funds. That is, these addition and deletion probabilities imply a percentage of affiliated funds being recommended that is 3.8 times larger than the percentage of non-affiliated funds receiving a recommendation.

Addition probabilities are also significantly larger for funds paying a larger share of the assets they obtain through the platform back to the platforms. For example, our calculations indicate that, on average across the platforms and all else equal, an increase of 100 bps in *Platform Revenue from the Fund* increases the probability of the fund being added to the recommendation list by 0.0016 in any given month, with no discernible effect in deletion probabilities.[20] As an illustration, this implies that an increase in *Platform Revenue from the Fund* equal to 25bps (the interquartile range) will result in average addition probabilities that are 40% larger than the average model implied addition probabilities for the observations in our sample (the average monthly, model implied, addition probability is 0.0010). In turn this leads to an increase in the long term percentage of funds in recommendation lists from 3.87%, for funds with actual revenue share agreements ($P_{Av}^{ADD}/(P_{Av}^{ADD} + P_{Av}^{DEL})$ = 0.0010 / (0.0010 + 0.0249)), to 5.18% for otherwise identical funds with 25bps higher revenue share agreements ($P_{Av+0.25}^{ADD}/(P_{Av+0.25}^{ADD} + P_{Av+0.25}^{DEL})$ = 0.0014 / (0.0014 + 0.0257)).[21] That is, these addition and deletion probabilities imply, on average, a percentage of recommended funds that is 34% larger than the actual percentage other things equal. The effect is larger, 56%, if we focus on estimates obtained using data from the pre-RDR period only.

The additional control variables indicate that funds that are costlier to investors (higher *Total Fees and Charges Ratio*) are, other things equal, less likely to be added to recommendation lists, and as likely to be deleted once there. Thus, while platforms issuing these recommendations may favour funds that make higher payments to platforms, they do not certainly favour funds that are more expensive to their customers. Additionally, funds with better prior performance or expected future performance are marginally more likely to be added to the recommendation list and/or less likely to be deleted from these lists. In our analysis we use three different measures of fund prior performance and two measures of independent analysts' sentiment about the funds future performance, all of which are correlated with each other, thus making it difficult to interpret their individual coefficients (our main interest is in controlling for these factors rather than assessing their contribution to the appearance of a fund on an individual list). Our results suggest that Morningstar five-star funds are more likely to be added to recommendation lists and are equally likely to be deleted from them once there (when simultaneously controlling for the funds past one and three year return in excess of Morningstar chosen benchmarks), whereas funds with recent one and three year good

---

[20] The revenue channel was shut down following RDR implementation, thus we do not compute marginal effects or estimate coefficients for the post RDR sample (what the revenue platforms obtain from selling a fund is equal across funds).

[21] Average model implied addition probabilities at current revenue share levels ,P_{Av}^{ADD}, are computed as the average across our sample of $\Lambda(AFF_{p,f,t-1}^{ADD}\beta_{AFF}^{ADD} + RS_{p,f,t-1}^{ADD}\beta_{RS}^{ADD} + \mathbf{Z}_{p,f,t-1}^{ADD}\boldsymbol{\beta}_Z^{ADD})$, whereas average model implied addition probabilities for non-affiliated funds ,P_{Av+25}^{ADD}, are computed as the average across our sample of $\Lambda(AFF_{p,f,t-1}^{ADD}\beta_{AFF}^{ADD} + (RS_{p,f,t-1}^{ACT}+0.25)\beta_{RS}^{ACT} + \mathbf{Z}_{p,f,t-1}^{ACT}\boldsymbol{\beta}_Z^{ACT})$. We follow a similar procedure for the computation of affiliated and non-affiliated funds deletion probabilities.

past performance are less likely to be deleted from these lists. At the same time, funds rated gold, silver, or bronze by Morningstar analysts, a measure of expected future performance and independent analysts' sentiment for the fund, are marginally more likely to be added to and less likely to be deleted from these lists.

Morningstar analyst ratings are produced by a team of analysts following processes (see Armstrong, Genc, and Verbeek, 2016) that are similar to those used by the analysts that prepare platforms internal lists, without being subject to the conflicts of interest that potentially affect the latter.[22] Their significance in the previous set of regressions suggests that both groups of analysts, those behind platform recommendations and Morningstar's, share some common sentiment or perceive certain intangibles about funds in a similar way. It is even possible that the two groups imitate each other or that one of them follows the other.

Morningstar analysts are likely drawn to some of the same features of funds which, while unobservable to the econometrician, also attract platform analysts. However, they have no reason to be influenced by the revenue share or affiliation incentives that potentially distort platforms' internal recommendation lists. We take advantage of this feature of Morningstar ratings in a second placebo-like test designed to further assess the robustness of our findings. In this test we explore Morningstar analysts' decisions to add funds to, and delete funds from, their gold, silver, or bronze lists, using the same modelling strategy and explanatory variables we used to analyse platform listing and delisting decisions. We estimate a logit model identical to that described in Equation (1) using the same set of platform-fund-month observations but modelling additions and deletions to the Morningstar list rather than to the platforms internal lists. These regressions include the same *Affiliation* and *Platform Revenue from the Fund* variables used when modelling platforms listing and delisting decisions but excluding Morningstar analyst ratings.

If there is nothing special about affiliated funds and funds rebating larger shares of assets under management to platforms (before RDR) we would expect these two variables to be not statistically significant in the regressions. On the other hand, if those funds have unobservable qualities that attract analysts (for reasons other than the incentives they offer platforms) we would expect these variables to be statistically significant. This is another way of controlling for the fact that affiliated funds and funds that contribute larger revenues to platforms may be attractive to analysts for reasons that are difficult to quantify using traditional variables. It is also a potentially more flexible, given the differences in baseline addition and deletion probabilities between platforms and analyst ratings.

We report the results of this estimation in Table VI. Results in this table show that neither an affiliation between fund and the platform where it is offered, nor revenue rebate have any significant impact on Morningstar analysts' addition and deletion decisions to gold, silver, or bronze lists, during the full sample or during any of the sample periods we study. We therefore conclude that analysts do not see anything special in these funds. We cannot do a similar estimation for gold only lists because no affiliated fund was added to Morningstar analysts' gold list during our sample period. As a result, the coefficient on affiliated cannot be determined, if anything providing further support to the idea that affiliated funds are not special.

---

[22] Morningstar analyst ratings started under the Morningstar brand in the U.K. in 2011, but a similar rating schedule existed before through a company called OBSR, which was acquired by Morningstar in 2011.

Overall, our results for both deletion and addition decisions provide evidence that affiliated funds are treated differently than non-affiliated funds. Affiliated funds are more likely to be added to and, after RDR, are less likely to be deleted from, recommendation lists. We find similar results for funds that rebate large portions of their assets under management to platforms before RDR implementation. Together with the results that suggest that Morningstar analysts are not swayed by these funds, they provide evidence that platform recommendation lists favour affiliated funds and funds with high revenue share to an extent that is difficult to justify by the qualities of those funds.

What effect do recommendations have on flows?

To explore how asset flows respond to recommendations we expand a typical flow-performance regression (see, for instance, Ippolito (1992) and Sirri and Tufano (1998)) to include, as regressors, variables for past recommendations and recommendation additions and deletions. We consider two flow measures: first, the platform-specific GBP flow into and out of a fund, a variable obtained from the platforms themselves; and, second, the percentage flow computed as the ratio of platform-specific GBP flows to the total net assets invested in the fund (whether through the platform or not) as of the end of the previous year.

We are interested in measuring how flows respond to recommendations and recommendation changes (that is, additions to and deletions from recommendation lists), controlling for publicly available measures of past performance, as well as for other product attributes known to affect flows which could also affect recommendations. We therefore estimate the response of platform-specific flows to recommendation changes using the following regression on yearly data:

$$Flow_{p,f,t} = REC_{p,f,t-1}\beta_{REC} + Z_{p,f,t-1}\beta_Z + \epsilon_{p,f,t}, \tag{2}$$

where $Flow_{p,f,t}$ is either the platform-specific GBP flow or the percentage flow, $REC_{p,f,t-1}$ is a vector that captures whether fund f appears in the recommendation list of platform p at time t-1 as well as the addition and deletion of fund f to this recommendation list over the previous three years (in three different specifications), and $Z_{p,f,t-1}$ is the same vector of lagged control variables that we used in the previous section, except that we also include a full set of fund-specific and platform-specific indicator variables, and in the GBP flows regressions we use, as regessors, the total net assets of product i on date t-1 (fund size), rather than the log assets (see Del Guercio and Tkac (2002)). To reduce the effect of outliers on the coefficient estimates, we remove all funds with total net assets at time t-1 below GBP 10 million from the sample (see, e.g., Chevalier and Ellison (1997)).

Table VII reports results of estimating this regression using pooled time-series cross-sectional data with GBP flows and percentage flows as the dependent variables. The coefficients on the variables capturing the effect of lagged recommendation levels on absolute flows are positive and statistically significant. This suggests that individual investors respond to funds appearing in the recommendation list of a given platform by increasing their investment in the recommended fund through that platform. The estimate in column (1) indicates that recommended funds experience, on average, an increase in net flows of GBP 5.9 million per year in every year following their appearance

in the list. Qualitatively similar results obtain if we use percentage flows as the dependent variable. The estimates in column (4) suggest that a fund appearing in the recommendation list in the previous year receives, on average, extra net inflows equal to 1% of the overall assets managed by that fund in the previous year, owing to that recommendation. In all cases t-statistics are based on standard errors clustered at the fund level, which are White heteroskedastic-consistent standard errors corrected for possible correlation across observations of a given fund (White (1980), Rogers (1993)).

The difference between, on the one hand, columns (1) and (4) and, on the other, columns (2), (3), (5), and (6) is that the latter also include, as regressors, indicator variables for lagged additions to and deletions from the recommendation lists while (1) and (4) do not. The reason for including lagged additions to and deletions from the recommendation lists, in addition to recommendation levels, is that the effect of a recommendation could be concentrated in the first year, or first few years, following a recommendation (additions) and investors attracted by recommendations may in fact abandon them when they cease to be recommended (deletions). The estimates in columns (2), (3), (5), and (6) indicate that while the positive effect of recommendations on flows is spread more or less evenly during the years the fund is recommended (each year adding a similar amount of money to the funds' total net assets the following year), deletions lead to significant outflows in the first three years following deletion (compared to a situation where the fund was never recommended); this is possibly the result of investors attracted by those recommendations moving their money elsewhere once the fund is removed from the recommendation list.

Our regressions also indicate that previous (one year) performance and Morningstar five star ratings have a significant direct impact on asset flows, in addition to their indirect impact via recommendations, a result which is in line with the previous literature on the topic (see, for instance, Ippolito (1992), Chevalier and Ellison (1997), and Sirri and Tufano (1998) for the impact of past performance, and Bergstresser and Poterba (2002), Del Guercio and Tkac (2008), and Ivković and Weisbenner (2009) for the influence of Morningstar star ratings). However, appearing on a platform recommendation list has a significantly bigger direct effect on net flows through the platform than receiving a five-star rating by Morningstar, or being included in Morningstar analysts' gold, silver, or bronze categories rating.[23]

Investors could offset the favouritism which platforms show towards affiliated funds in the recommendation lists, by discounting the platforms' recommendations of these funds. Investors could also potentially offset any favouritism shown by platforms towards funds with high revenue share agreements by, for instance, not allocating capital to poorly performing funds with high revenue share agreements (even though the revenue sharing arrangements between platform and fund are unlikely to be in investors' information set). We next investigate whether they do that by estimating the response of platform-specific flows to recommendation changes interacted with variables for affiliation and revenue sharing. The regressions we estimate are the following:

$$Flow_{p,f,t} = REC_{p,f,t-1}\beta_{REC} + AFF_{p,f,t-1}REC_{p,f,t-1}\beta_{REC \times AFF} + RS_{p,f,t-1}\beta_{RS} +$$

---

[23] Unlike platform recommendation lists, Morningstar star and analyst ratings can potentially reach investors in multiple platforms as well as investors who access funds through other means. See the cited papers by Bergstresser and Poterba (2002), Del Guercio and Tkac (2008), and Ivković and Weisbenner (2009) and the paper by Armstrong, Genc, and Verbeek (2016) for an analysis of Morningstar star and analyst ratings impact on aggregate flows respectively.

$$Z_{p,f,t-1}\boldsymbol{\beta}_Z + \epsilon_{p,f,t}, \tag{3}$$

and,

$$Flow_{p,f,t} = REC_{p,f,t-1}\beta_{REC} + RS_{p,f,t-1}REC_{p,f,t-1}\beta_{REC\times RS} + RS_{p,f,t-1}\beta_{RS} +$$

$$Z_{p,f,t-1}\boldsymbol{\beta}_Z + \epsilon_{p,f,t}. \tag{4}$$

Explanatory variables in equations (3) and (4) are as defined before, except that we only include lagged recommendation levels. Notice that including a full set of fund indicator variables renders the inclusion of the affiliated indicator variable unnecessary, since affiliation is a mostly time invariant characteristic in our sample.[24]

We report the results of estimating these regressions in Table VIII. The coefficients on the interaction effect between *Recommendation List* and *Affiliated* is negative and significant, suggesting that investors are indeed more sceptical about recommendations of affiliated funds. In fact, the coefficient on the interaction almost equals in absolute value the value of the coefficient on *Recommendation List*, suggesting that affiliated recommendation have a much reduced impact on flows. The coefficients on the interaction effect between *Recommendation List* and *Platform Revenue from Fund*, on the other hand, are not statistically different from zero in either the GBP or percentage flow regressions. This suggests that investors, who are not privy to revenue share agreements, do not offset recommendations lists' favouritism towards these funds.

Our results show that, on average, recommendations have a substantial impact on net asset flows to funds. However, investors heavily discount affiliated fund recommendations, to the point where it almost makes no difference for flows, but they do not adjust for favouritism towards funds with high revenue share agreements with the platforms that recommend them.

---

[24] Only a handful of funds went from being affiliated to non-affiliated, or vice versa, during our sample period. Since the within estimator is well known to be imprecise for regressors that vary little over time we opted to exclude the *Affiliated* dummy variable from the model. Including it, however, has no discernible impact on any of the coefficient estimates reported in Table VIII, or their standard errors.

4   Do recommendations add value for investors?

We measure value to investors of fund recommendations by comparing their performance, relative to the benchmarks chosen by Morningstar for those funds, with the performance of other funds in the same Morningstar category which are also available via the platforms but are not recommended.[25]

To generate aggregate measures of performance we create equal-weighted portfolio returns in excess of Morningstar chosen benchmarks of recommended and non-recommended funds available in each month. We do this platform by platform, and then average results across platforms, with each platform receiving the same weight. As a result, funds may be weighted more heavily if they are recommended by multiple platforms, or if they appear, but are not recommended, in more platforms. Funds which are not available via any of the platforms do not enter into our calculations. This is because we evaluate recommendation lists, and lists can only recommend funds that are part of the platforms where they appear.

Separately, we match each recommended fund to all non-recommended funds which are classified in the same (level 2) Morningstar category and also available in the platform. For each recommended fund we compute the equal-weighted average return of all non-recommended funds in both the same category and platform. We then create equal-weighted portfolio returns of the recommended funds and of the matching portfolio of non-recommended funds in excess of Morningstar chosen benchmarks (the benchmark is the same for recommended funds and the matching portfolio).

In our calculations we use platform-specific net returns, which take into account charges and rebates applied by platforms assuming a notional investment of GBP 50,000 per account. Fund initial charges (front end loads), if any, are prorated assuming a five-year holding period.

The results in Table IX indicate that, over our 10-year sample period, the portfolio of all funds on the platforms' internally produced recommendation lists delivered average net returns in excess of Morningstar benchmarks of 0.08% per year. These returns are, on average, a statistically significant 0.94% per annum higher than the excess returns obtained by other funds available to investors in these platforms but not listed in recommendation lists. This comparison does not control for the types of funds that are recommended by platforms, and so may reflect, to some extent, the performance of the chosen asset class, rather than the performance of the recommended manager relative to their peers. To address this, we compare the returns of recommended funds to a matched sample of non-recommended funds classified in the same Morningstar category (thus effectively comparing recommended and not recommended funds category by category in each platform) results are relatively similar. Recommended funds outperform non-recommended funds by a statistically significant 0.60% per year.[26]

---

[25] This approach is similar to the approach employed by Christoffersen, Evans, and Musto (2013).

[26] In the comparison between recommended funds and not recommended funds in the same platform and Morningstar category we drop funds for which there is no match in the corresponding category across these two dimensions.

As a robustness check, and following Gerakos, Linnainmaa, and Morse (2016), in the last two columns of Table IX we repeat these calculations but dropping asset allocation and alternative investments funds because these funds represent heterogeneous investment strategies that make benchmarking challenging. The results for equity and fixed income funds only are similar to those reported before. Recommended funds outperform non-recommended funds in these two categories by 0.52% to 0.68% per year, depending on the benchmarking assumptions (Morningstar benchmarks or funds in the same categories available in the platform, respectively).

The results discussed above, and shown in the first part of Table IX, are obtained assuming that funds are held only for the period during which they are listed in these recommendations lists. However, investors may be inattentive or disinclined to rebalance their portfolios with the frequency that such a strategy assumes. Accordingly, the second part of Table IX shows results for portfolios of funds built on the assumption that investors hold them for five years starting each listing month (or until the end of our sample period).[27] Under the assumption of a five-year holding period, recommended funds still outperform non-recommended ones by between 0.43% to 0.83% per year, depending on the choice of benchmark (Morningstar chosen benchmark or average performance of non-recommended funds in the same Morningstar category), and regardless of whether asset allocation and alternative investment funds are included in the calculations or not.

Analysis in Section 3A provides evidence that platform recommendation lists favour affiliated funds and funds with high revenue share to an extent that is difficult to justify by the qualities of those funds. In Table X we investigate the relationship between these two variables on the one hand and the performance of recommended funds on the other. In this table, sample periods are tailored to the portfolios studied. In particular, they exclude periods where no affiliated funds were recommended, when studying affiliation, and the post-RDR period (when platforms were no longer allowed to retain payments from asset managers), when studying revenue share. These sample period restrictions affect the length of our time series of recommendations for the analysis in which the holding period of a fund is for as long as it is listed, but not for the analysis based on five-year holding period portfolios.[28]

The first part of Table X shows that recommended funds that are not affiliated significantly outperform non-recommended funds. The portfolio of non-affiliated recommended funds delivers net returns in excess of Morningstar category benchmarks that are, on average, 1.04% per annum higher than the excess returns obtained by non-recommended funds available to investors via these platforms. While recommended funds exhibit similar performance, the difference is not statistically significant. When we compare the returns of recommended funds to a matched sample of non-recommended funds which are classified in the same Morningstar category, non-affiliated recommended funds outperform non-recommended ones by a statistically significant 0.74% per year. This contrasts with recommendations of affiliated funds, which perform similarly to the other funds that platforms could have recommended in the same categories but chose not to.

---

[27] Estimates of average holding periods for fund retail investors in the U.K. vary between 4 and 6 years for the period under study. See Investment Association (2016).

[28] For the five-year holding period portfolios, even though we still restrict recommendations to come from periods where affiliated funds have been recommended or the pre-RDR period, the fact that we track these recommendations during five years guarantees that the time series of portfolio returns extends for the full 10-year sample period.

When we consider portfolios of funds built assuming investors hold them for five years starting each listing month, we continue to find that recommended non-affiliated funds significantly outperform non-recommended funds by between 0.49% and 0.82% per year, depending on the choice of benchmark (Morningstar chosen benchmark or average performance of non-recommended funds in the same Morningstar category). However, recommended affiliated funds perform in line with non-recommended ones (differences in performance vary between -0.13% per year to 0.27% per year, and are in all cases not statistically significant).

It is worth noting that when we compare affiliated funds to non-affiliated funds more generally, that is, by platform and category but regardless of whether they are recommended or not, we do not find differences in performance between these two groups. The average excess return over Morningstar chosen benchmarks, at -0.38% per year for affiliated funds and -0.35% per year for non-affiliated funds, is virtually undistinguishable.

The second part of Table X shows the performance of recommended funds in the top and bottom half of revenue generated for the platform which makes the recommendation. The results in this table point to low revenue-generating recommended funds significantly outperforming non-recommended funds, but also to high revenue-generating recommended funds outperforming non-recommended funds (at least when five-year holding periods are considered). In untabulated results we also find no evidence of a (linear) relation between revenue generated for the platform and recommendation performance. In a regression of excess return over benchmarks on recommendations and the interaction between recommendations and revenue generated for the platform, using standard errors robust to general forms of heteroscedasticity, autocorrelation, and cross correlation, the coefficient associated to this interaction is statistically undistinguishable from zero.

Overall, our results provide strong evidence that, on average, funds recommended by platforms outperform non-recommended funds. This is, however, not true when we confine the recommended funds to those which are affiliated with the platform, as these seem to do no better than other available funds in their same category. At the same time, the distortions brought about by the revenue sharing incentive seem to have little effect on investors who follow them. These results also help dispel the notion that private information, rather than favoritism, is behind some platforms' recommendations of their own funds. If they recommended affiliated funds because they knew something meaningful about those funds which others did not, we should expect it to be reflected in post-recommendation performance.

5   Conclusions

Investment platforms are important channels between funds and their investors. We study investment platforms in the U.K., which has one of the largest fund industries in the world and where platforms intermediate over half of fund flows. Among the wide range of funds that platforms make available, they select some to recommend to investors, and these recommendations have a considerable impact on fund flows. In making these recommendations, platforms are subject to two potential conflicts of interest. First, platforms are affiliated with some of the funds they offer to investors, and second, platforms in the U.K. have been allowed, until recently, to receive from funds a share of the asset management fees which the funds obtain from investors. Using a unique data set sourced through the U.K. financial regulator, which includes precise details of investment platforms' recommendations, fund flows through individual platforms, and the affiliation or revenue-sharing relationship that the platforms have with funds, we examine the drivers, impact, and performance of investment platforms' recommendations of funds.

We find that, on average, recommended funds exhibit significantly better past performance than the non-recommended funds which are available on the same platform, and that recommended funds are less costly to investors in fee terms. Our results also show that a significantly higher percentage of affiliated than non-affiliated funds is recommended, and that, per GBP invested, recommended funds share more of their revenues with the platforms than non-recommended funds. Our results confirm that platform recommendations have a substantial impact on flows. However, when we confine ourselves to recommended funds which are affiliated with the platform, flows are somewhat less responsive, suggesting that investors may discount such own-brand best buys. On the other hand, flows to recommended funds do not seem to depend on the percentage of revenue shared by these funds with the platforms, suggesting that investors (who in the U.K. do not see the revenue-sharing arrangements) do not offset platforms' favoritism towards such funds. Recommended funds perform significantly better (after recommendation) than non-recommended funds. These performance results do not hold when we confine the recommended funds to those which are affiliated with the platform, as these seem to do no better than other available funds in the same category. On the other hand, the level of revenue sharing does not seem to have much impact on investors who follow them. Whether recommended funds have high or low revenue-sharing, they significantly outperform non-recommended funds (at least when measured using five-year holding periods).

We also find significant changes after the introduction of regulation that increased the transparency of charges for end consumers, and ended payments by funds to platforms. After these changes, we find an increased tendency to recommend affiliated funds. Given that these changes only occurred towards the end of our sample period, it remains to be seen whether the longer-term performance of these own brand funds justifies their inclusion on the best-buy lists.

Annex 1: References

Anagol, Santosh, Shawn Cole, and Shayak Sarkar, 2017, Understanding the advice of commissions-motivated agents: Evidence from the Indian life insurance market. *Review of Economics and Statistics* 99, 1–15.

Armstrong, Will J., Egemen Genc, and Marno Verbeek, Going for Gold: An Analysis of Morningstar Analyst Ratings (April 7, 2016). Available at SSRN: https://ssrn.com/abstract=2419669 or http://dx.doi.org/10.2139/ssrn.2419669

Bergstresser, Daniel, John M R Chalmers, and Peter Tufano, 2009, Assessing the costs and benefits of brokers in the mutual fund industry. *Review of Financial Studies* 22, 4129–4156.

Bergstresser, Daniel, and James Poterba, 2002, Do after-tax returns affect mutual fund inflows? *Journal of Financial Economics* 63, 381–414.

Chalmers, John, and Jonathan Reuter. Is Conflicted Investment Advice Better than No Advice? No. w18158. National Bureau of Economic Research, 2012.

Chevalier, Judith, and Glenn Ellison, 1997, Risk taking by mutual funds as a response to incentives. *Journal of Political Economy* 105, 1167–1200.

Christoffersen, Susan E.K., Richard Evans, and David K. Musto, 2013, What do consumers' fund flows maximize? Evidence from their brokers' incentives. *The Journal of Finance* 68, 201–235.

Del Guercio, Diane, and Jonathan Reuter, 2014, Mutual fund performance and the incentive to generate alpha. *The Journal of Finance* 69, 1673–1704.

Del Guercio, Diane, and Paula Tkac, 2002, The determinants of the flow of funds of managed portfolios: Mutual funds versus pension funds. *Journal of Financial and Quantitative Analysis* 37, 523–557.

Del Guercio, Diane, and Paula A. Tkac, 2008, Star power: The effect of Morningstar ratings on mutual fund flow. *Journal of Financial and Quantitative Analysis* 43, 907–936.

Egan, Mark. Brokers vs. Retail investors: Conflicting interests and dominated products. University of Minnesota Working paper (2017).

FCA, 2014, *Wholesale sector competition review: call for inputs*, July. https://www.fca.org.U.K./your-fca/documents/market-studies/wholesale-sector-competition-review--call-for-inputs

FCA, 2015a, *Wholesale sector competition review*, February. www.fca.org.U.K./news/fs15-02-wholesale-sector-competition-review-2014-15

FCA, 2015b, *Asset management market study: terms of reference*, November. www.fca.org.U.K./your-fca/documents/market-studies/ms15-02-1-asset-management-market-study-tor

FCA, 2016, *Asset Management Market Study Interim Report*, November, https://www.fca.org.U.K./publication/market-studies/ms15-2-2-interim-report.pdf

Gennaioli, Nicola, Andrei Shleifer, and Robert Vishny, 2015, Money doctors. *The Journal of Finance* 70, 91–114.

Gerakos, Joseph, Juhani T. Linnainmaa, and Adair Morse. Asset Managers: Institutional Performance and Smart Betas. No. w22982. National Bureau of Economic Research, 2016.

ICI (Investment Company Institute), 2016, *Characteristics of Mutual Fund Investors*, Research Perspective Vol 22 (7), October. https://www.ici.org/pdf/per22-07.pdf

ICI (Investment Company Institute), 2017, *Investment Company Fact Book*. https://www.ici.org/pdf/2017_factbook.pdf

Inderst, Roman, and Marco Ottaviani, 2012a, Competition through commissions and kickbacks. *The American Economic Review* 102. 780–809.

Inderst, Roman, and Marco Ottaviani, 2012b, Financial advice. *Journal of Economic Literature* 50, 494 –512.

Inderst, Roman, and Marco Ottaviani, 2012c, How (not) to pay for advice: A framework for consumer financial protection. *Journal of Financial Economics* 105, 393–411.

Investment Association, 2016, *Asset Management in the U.K. 2015–2016*, September. https://www.theinvestmentassociation.org/assets/files/research/2016/20160929-amsfullreport.pdf

Ippolito, R., 1992, Consumer reaction to measures of poor quality. *Journal of Law and Economics* 35, 45–70.

Ivkovic, Zoran, and Scott Weisbenner, 2009, Individual investor mutual fund flows. *Journal of Financial Economics* 92, 223–237.

Jenkinson, Tim, Howard Jones and Jose Vicente Martinez, 2016, Picking winners? Investment consultants' recommendations of fund managers. *The Journal of Finance* 71, 2333–2370.

Law Commission, 2014, Fiduciary Duty of Financial Intermediaries, June. http://www.lawcom.gov.U.K./wp-content/uploads/2015/03/lc350_fiduciary_duties.pdf

Mullainathan, Sendhil, Markus Noeth, and Antoinette Schoar. The market for financial advice: An audit study. No. w17929. National Bureau of Economic Research, 2012.

Newey, Whitney K., and Kenneth D. West, 1987, A Simple, Positive Semi-definite, Heteroskedasticity and Autocorrelation Consistent Covariance Matrix. *Econometrica* 55, 703–708.

Platforum, 2016, *U.K. D2C Guide: Direct Platform market update*, July. http://www.platforum.co.U.K./Subscriptions/D2C/U.K.-D2C-Guide

Pool, Veronika K., Clemens Sialm, and Irina Stefanescu, 2016, It pays to set the menu: mutual fund investment options in 401 (K) plans. *The Journal of Finance* 71, 1779 –1812.

Rogers, W., 1993, Regression standard errors in clustered samples. *Stata Technical Bulletin*, 13, 19–23.

Sirri, Erik, and Peter Tufano, 1998, Costly search and mutual fund flows. *The Journal of Finance* 53, 1589–1622.

White, H., 1980, A heteroskedasticity-consistent covariance matrix estimator and a direct test of heteroskedasticity. *Econometrica* 48, 817–838.

Annex 2: Tables

Table I: Platforms, Funds, and Recommendations - Descriptive Statistics by Year

This table presents descriptive statistics on the sample of funds and recommendation lists produced by and available through the platforms used in our study. It shows the number of GBP denominated equity, fixed income, asset allocation, and alternative retail funds available in the UK, the average number and the percentage of available funds offered per platform, the assets under management of funds offered in the platforms as a percentage of the total assets under management of the funds available in the UK, and the average number and percentage of funds recommended in any of the recommendation lists which platforms make available to their clients. These statistics are presented for the full sample period as well as for each year during that period, and for the periods before and after RDR implementation.

	Number of Equity, Fixed Income, Asset Allocation, and Alternative GBP Denominated Funds	Average Number of Funds per Platform	Average Percentage of Available Funds Offered in each Platform	Average Percentage of Available Funds Offered in each Platform by Assets under Management	Average Number of Funds Recommended per Platform	Percentage of Funds Recommended per Platform
2006	2,620	1,167	44.6	78.3	134	11.5
2007	2,899	1,361	46.9	77.3	149	11.0
2008	3,129	1,545	49.4	74.7	150	9.7
2009	3,298	1,705	51.7	76.4	132	7.7
2010	3,460	1,547	44.7	73.8	103	6.7
2011	3,711	1,655	44.6	75.2	102	6.1
2012	3,848	1,679	43.6	74.5	96	5.7
2013	3,989	1,743	43.7	74.9	103	5.9
2014	4,191	1,830	43.7	72.7	82	4.5
2015	4,438	1,717	38.7	71.0	61	3.5
Mean	3,558	1,595	45.2	74.9	111	7.2
Pre-RDR	3,450	1,582	45.8	75.6	119	7.8
Post-RDR	4,323	1,773	41.0	71.6	70	3.9

Source: Morningstar Direct, data requested from a sample of UK direct-to-consumer platforms

Table II: Characteristics of Funds Offered and Not Offered through the Platforms

This table presents descriptive statistics for funds offered, and not offered, through the platforms in our sample. The variables include: fund age, fund size (in billions of GBP) as measured by total assets under management, the volatility of monthly fund returns, turnover, the total fees and platform charges for the fund, the percentage of five star rated funds by Morningstar, the percentage of gold-rated and gold, silver, or bronze-rated funds by Morningstar (previously elite, and elite or superior) and mean performance percentiles. Performance percentiles are calculated over the previous one and three years based on funds in the same Morningstar category and assuming average platform charges after RDR. The averages are reported for the full sample as well as for the period before and after the implementation of RDR by each platform. P-values for the differences are reported in square brackets and are based on standard errors clustered at the fund level. Significance levels for tests of the difference in means are denoted by *, **, and ***, which correspond to the 10%, 5%, and 1% levels, respectively.

	All			Pre-RDR			Post-RDR		
	In platform	Not in platform	Difference	In platform	Not in platform	Difference	In platform	Not in platform	Difference
Fund age (in years)	12.15	6.48	5.67 [<0.00]***	11.75	6.60	5.15 [<0.00]***	13.32	6.21	7.11 [<0.00]***
Fund Size (in £B)	0.25	0.08	0.17 [<0.00]***	0.24	0.08	0.16 [<0.00]***	0.27	0.08	0.19 [<0.00]***
Return Standard Deviation (in %)	3.36	2.97	0.39 [<0.00]***	3.64	3.23	0.41 [<0.00]***	2.56	2.37	0.19 [<0.00]***
Turnover (in %)	113.38	205.91	-92.53 [0.08]*	116.04	178.48	-62.44 [0.07]*	104.97	281.96	-176.99 [0.10]
Fees and Charges (in %)	1.58	1.53	0.05 [<0.00]***	1.63	1.56	0.07 [<0.00]***	1.41	1.43	-0.02 [0.18]
Morningstar 5 Star (in %)	11.78	4.60	7.18 [<0.00]***	10.55	4.37	6.18 [<0.00]***	15.35	5.15	10.20 [<0.00]***
Morningstar Gold rating (in %)	2.24	0.49	1.75 [<0.00]***	2.39	0.55	1.84 [<0.00]***	1.82	0.37	1.45 [<0.00]***
Morningstar Gold, Silver, and Bronze (in %)	15.16	3.83	11.33 [<0.00]***	14.28	3.64	10.64 [<0.00]***	17.73	4.28	13.45 [<0.00]***
Prior 1-Year Performance (in %)	50.49	48.57	1.92 [<0.00]***	50.42	48.61	1.81 [<0.00]***	50.69	48.48	2.21 [<0.00]***
Prior 3-Year Performance (in %)	51.11	47.58	3.53 [<0.00]***	50.49	48.32	2.17 [<0.00]***	52.42	46.21	6.21 [<0.00]***
Observations	386,604	479,037		287,953	333,980		98,651	145,057	

Source: Morningstar Direct, data requested from a sample of UK direct-to-consumer platforms

Table III: Funds Offered and Recommended by Asset Category

This table presents descriptive statistics on the sample of funds available through the platforms used in our study. It shows the average number of funds per platform, average number of Morningstar categories represented by those funds, the average number of funds recommended per platform, average assets under management per fund (in millions of GBP), and the average net fees and platform charges to investors (in % per year). Descriptive statistics are reported for the full sample of funds and separately for each of the asset classes included in our study: equity, fixed income, asset allocation, and alternative investments.

	Average Number of Funds per Platform	Average Number of Morningstar Categories Represented	Average Number of Funds Recommended per Platform	Average Assets under Management per Fund (millions GBP)	Average Net Fees and Platform Charges to Investors (% per year)
All funds	1,595	103	111	238	1.56
Equity	1,015	69	82	242	1.59
Fixed income	215	25	15	327	1.17
Asset allocation	310	8	11	187	1.74
Alternative investments	55	1	3	99	1.73

Source: Morningstar Direct, data requested from a sample of UK direct-to-consumer platforms

Table IV: Characteristics of Recommended and Non-Recommended Funds

This table presents descriptive statistics for funds recommended ("Rec.") and not recommended ("Not rec.") in the recommendation lists produced by and available through the platforms of our sample. Affiliated is the percentage of funds affiliated with the platform in each category. Platform revenue from the fund is the revenue obtained by the platform from each pound individuals invest in the fund through the platform (in %). The remaining variables are fund-level variables: fund age, fund size (in billions of GBP) as measured by total assets under management, the volatility of monthly fund returns, turnover, the total net fees and platform charges for the fund, the percentage of five star rated funds by Morningstar, the percentage of gold-rated and gold, silver, or bronze-rated funds by Morningstar (previously elite, and elite or superior) and mean performance percentiles. Performance percentiles are calculated using funds returns in excess of Morningstar chosen benchmarks over the previous one and three years. The averages are reported for the full sample as well as for the period before and after the implementation of RDR by each platform. P-values for the differences are reported in square brackets and are based on standard errors clustered at the fund level. Significance levels for tests of the difference in means are denoted by *, **, and ***, which correspond to the 10%, 5%, and 1% levels, respectively.

	All			Pre-RDR			Post-RDR		
	Rec.	Not rec.	Difference	Rec.	Not rec.	Difference	Rec.	Not rec.	Difference
Affiliated (in %)	3.79	1.98	1.81 [0.03]**	2.56	1.65	0.91 [0.20]	9.16	2.73	6.43 [<0.00]***
Platform revenue from fund (in %)	0.59	0.54	0.05 [<0.00]***	0.64	0.60	0.04 [<0.00]***	0.40	0.40	-
Fund age (in years)	13.33	12.58	0.75 [0.26]	12.84	12.29	0.55 [0.45]	15.47	13.23	2.24 [<0.00]***
Fund Size (in £B)	1.09	0.21	0.88 [<0.00]***	1.05	0.19	0.86 [<0.00]***	1.21	0.24	0.97 [<0.00]***
Return Standard Deviation (in %)	3.81	3.44	0.37 [<0.00]***	4.05	3.83	0.22 [0.06]*	2.78	2.55	0.23 [0.09]*
Turnover (in %)	99.92	113.88	-13.96 [0.04]**	103.01	117.01	-14.00 [0.05]*	85.02	105.88	-20.86 [0.01]**
Total fees and charges (in %)	1.46	1.56	-0.10 [<0.00]***	1.52	1.64	-0.12 [<0.00]***	1.15	1.36	-0.21 [<0.00]***
Morningstar 5 Star (in %)	30.94	11.56	19.38 [<0.00]***	30.83	10.18	20.65 [<0.00]***	31.39	14.71	16.68 [<0.00]***
Morningstar Gold rating (in %)	18.04	1.41	16.63 [<0.00]***	18.84	1.43	17.41 [<0.00]***	14.53	1.35	13.18 [<0.00]***

	All			Pre-RDR			Post-RDR		
Morningstar Gold, Silver, and Bronze (in %)	60.31	14.00	46.31 [<0.00]***	61.62	13.01	48.61 [<0.00]***	54.56	16.24	38.32 [<0.00]***
Prior 1-Year Performance (in %)	55.76	49.06	6.70 [<0.00]***	55.61	49.00	6.61 [<0.00]***	56.29	49.19	7.10 [<0.00]***
Prior 3-Year Performance (in %)	63.44	48.52	14.92 [<0.00]***	64.97	48.24	16.73 [<0.00]***	59.22	49.01	10.21 [<0.00]***
Observations	20,461	309,714	-	16,642	214,882	-	3,819	94,832	-

Source: Morningstar Direct, data requested from a sample of UK direct-to-consumer platforms

Table V: Logit Model of Fund Additions to and Deletions from Recommendation Lists

The first part of this table reports coefficient estimates for the logit model $Prob(ACT_{p,f,t} = 1) = (AFF_{p,f,t-1}\beta AFF + RS_{p,f,t-1}\beta RS + Z_{p,f,t-1}\beta Z)$, where $ACT_{p,f,t}$ is an indicator variable that takes the value of 1 if fund f is added to or deleted from (depending on the specification) the recommendation list in platform p during month t and 0 otherwise, $AFF_{p,f,t-1}$ is an indicator for whether the fund f is affiliated with platform p at the end of month t−1, and $RS_{p,f,t-1}$ is the revenue obtained by the platform p from each pound individuals invest in fund f through the platform at time t−1. The other lagged control variables in vector Z include the fund age, the natural logarithm of the fund's size, the volatility of monthly fund returns, fund turnover, the total net fees and platform charges ratio for the fund, indicator variables for Morningstar five star-rated funds, Morningstar Analysts' gold-rated funds (previously elite), and Morningstar Analysts' gold-, silver-, or bronze-rated funds (previously elite or superior), performance percentiles and indicator variables for calendar years and fund styles (not reported). Performance percentiles are calculated using funds returns in excess of Morningstar chosen benchmarks over the previous one and three years. Different regressions are estimated for Additions and Deletions and for the full sample as well as for the period before and after the implementation of RDR by each platform. z-scores based on standard errors clustered at the fund level are included in parenthesis. The second part of the table displays model-implied average marginal effects for the two variables of interest: Affiliation and Platform Revenue from the Fund. Significance levels are denoted by *, **, and ***, which correspond to the 10%, 5%, and 1% levels, respectively.

	Additions			Deletions		
	All	**Pre-RDR**	**Post-RDR**	**All**	**Pre-RDR**	**Post-RDR**
Affiliated	1.15	0.73	2.96	-0.59	0.15	-2.47
	(2.90)***	(1.39)	(4.09)***	(-1.24)	(0.30)	(-2.20)**
Platform revenue from fund	1.93	2.34	-	0.20	-0.43	-
	(4.51)***	(5.85)***		(0.31)	(-0.58)	
Fund age	-0.01	-0.01	-0.08	-0.00	0.00	-0.02
	(-1.11)	(-0.64)	(-2.29)**	(-0.18)	(0.11)	(-1.16)
Log fund size	0.30	0.28	0.35	0.11	0.24	-0.22
	(4.43)***	(3.92)***	(1.82)*	(1.03)	(1.59)	(-1.32)
Return Standard Deviation	15.95	17.81	-43.12	4.21	4.35	-9.27
	(1.87)*	(2.03)**	(-0.92)	(0.75)	(0.58)	(-0.75)
Turnover	-0.14	-0.21	0.29	0.07	0.24	-0.46
	(-1.64)	(-1.97)**	(1.68)*	(0.67)	(2.15)**	(-1.72)*
Total fees and charges	-1.01	-1.39	0.26	-0.04	0.16	0.14
	(-2.49)**	(-3.11)***	(0.18)	(-0.10)	(0.29)	(0.28)
Morningstar 5 Star	1.27	1.29	1.10	-0.11	0.07	-0.31
	(5.08)***	(4.91)***	(1.44)	(-0.53)	(0.25)	(-0.76)
Morningstar Gold rating	-0.19	-0.28	0.71	-0.37	-0.20	-0.63

	Additions			Deletions		
	(-0.45)	(-0.61)	(0.60)	(-1.12)	(-0.53)	(-0.94)
Morningstar Gold, Silver, and Bronze	0.41	0.43	0.91	-0.54	-0.78	-0.11
	(1.83)*	(1.84)*	(1.02)	(-2.38)**	(-2.63)***	(-0.27)
Prior 1-Year Performance	-0.55	-0.35	-2.56	-0.65	-0.27	-2.14
	(-1.31)	(-0.78)	(-2.66)***	(-2.20)**	(-0.77)	(-3.41)***
Prior 3-Year Performance	0.33	0.20	1.11	-0.93	-1.70	1.05
	(0.66)	(0.36)	(0.84)	(-2.67)***	(-3.91)***	(1.52)
	Average marginal effects					
Affiliated	0.0017	0.0012	0.0027	-0.0085	0.0024	-0.0290
Platform revenue from fund	0.0016	0.0028	-	0.0036	-0.0065	-
Pseudo-R^2	0.14	0.14	0.16	0.07	0.08	0.13
Observations	115,742	75,678	40,073	8,853	6,500	2,354

Source: Morningstar Direct, data requested from a sample of UK direct-to-consumer platforms

Table VI: Logit Model of Fund Additions to and Deletions from Morningstar's Gold, Silver, or Bronze Lists

The first part of this table reports coefficient estimates for the logit model Prob($ACT_{p,f,t}$ = 1) = ($AF_{p,f,t-1}\beta AF$ + $RS_{p,f,t-1}\beta RS$ + $Z_{p,f,t-1}\beta Z$), where $ACT_{p,f,t}$ is an indicator variable that takes the value of 1 if fund f offered in platform p is, respectively, added to or deleted from Morningstar's gold, silver, or bronze lists (previously elite or superior) during month t and 0 otherwise, $AF_{p,f,t-1}$ is an indicator for whether the fund f is affiliated with platform p at the end of month t−1, and $RS_{p,f,t-1}$ is the revenue obtained by the platform p from each pound individuals invest in fund f through the platform at time t−1. The other lagged control variables in vector Z include the fund age, the natural logarithm of the fund's size, the volatility of monthly fund returns, fund turnover, the total net fees and platform charges ratio for the fund, indicator variables for Morningstar five star-rated funds, performance percentiles and indicator variables for calendar years, and fund styles (not reported). Performance percentiles are calculated using funds returns in excess of Morningstar chosen benchmarks over the previous one and three years. Different regressions are estimated for Additions and Deletions and for the full sample as well as for the period before and after the implementation of RDR by each platform. z-scores based on standard errors clustered at the fund level are included in parentheses. Significance levels are denoted by *, **, and ***, which correspond to the 10%, 5%, and 1% levels, respectively.

	Additions to Morningstar Gold, Silver, or Bronze Lists			Deletions from Morningstar Gold, Silver, or Bronze Lists		
	All	**Pre-RDR**	**Post-RDR**	**All**	**Pre-RDR**	**Post-RDR**
Affiliated	0.46	0.48	0.05	0.11	0.01	0.33
	(1.68)*	(1.49)	(0.10)	(0.51)	(0.06)	(0.81)
Platform revenue from fund	0.38	0.30	-	0.13	0.23	-
	(1.48)	(1.15)		(0.46)	(0.70)	
Fund age	-0.01	-0.02	0.00	0.01	0.01	0.01
	(-1.60)	(-1.84)*	(0.12)	(1.32)	(1.44)	(0.34)
Log fund size	0.51	0.47	0.87	-0.15	-0.18	-0.09
	(8.22)***	(7.11)***	(4.35)***	(-3.49)***	(-3.64)***	(-1.20)
Return Standard Deviation	10.10	8.65	11.37	13.42	12.27	14.56
	(1.81)*	(1.53)	(0.54)	(2.40)**	(2.00)**	(1.37)
Turnover	-0.11	-0.17	0.14	0.14	0.13	0.15
	(-1.43)	(-1.86)*	(1.10)	(2.36)**	(1.87)*	(1.40)
Total fees and charges ratio	0.51	0.66	-0.40	-0.30	-0.30	-0.34
	(2.14)**	(2.74)***	(-0.51)	(-1.44)	(-1.09)	(-0.88)
Morningstar 5 Star	0.68	0.56	1.05	0.01	0.02	-0.01
	(3.56)***	(2.58)***	(2.15)**	(0.04)	(0.10)	(-0.03)
Prior 1-Year Performance	0.51	0.43	1.44	-0.53	-0.67	-0.09

	Additions to Morningstar Gold, Silver, or Bronze Lists			Deletions from Morningstar Gold, Silver, or Bronze Lists		
	(1.63)	(1.32)	(1.39)	(-1.94)*	(-2.19)**	(-0.14)
Prior 3-Year Performance	1.07	0.95	1.96	-0.63	-0.72	-0.66
	(3.10)***	(2.63)***	(1.60)	(-2.13)**	(-2.01)**	(-1.12)
Pseudo-R^2	0.12	0.11	0.16	0.09	0.13	0.02
Observations	95,323	63,375	31,958	30,502	19,412	11,090

Source: Morningstar Direct, data requested from a sample of UK direct-to-consumer platforms

Table VII: Regressions of Asset Flows on Past Fund Recommendations

This table reports the results of pooled time-series cross-sectional regressions of yearly platform specific GBP and percentage asset flows on past fund recommendations and recommendation changes (additions and deletions from recommendation lists). GBP flows are expressed in millions of GB pounds. Percentage flows are computed as the ratio of platform specific pound flows to total assets under management at the end of the previous year. Each column represents a separate regression. All regressions include a set of lagged control variables: the fund age, the fund size (the natural logarithm of the fund's size in the relative flow regressions), the volatility of monthly fund returns, fund turnover, the total expense ratio of the fund, indicator variables for Morningstar five star-rated funds, Morningstar Analysts' gold-rated funds (previously elite), and Morningstar Analysts' gold-, silver-, or bronze-rated funds (previously elite or superior), performance percentiles and indicator variables for calendar years, platforms, and individual funds (not reported). Performance percentiles are calculated over the previous one and three years based on funds in the same Morningstar category. t-statistics based on standard errors clustered at the fund level are included in parentheses. Significance levels are denoted by *, **, and ***, which correspond to the 10%, 5%, and 1% levels, respectively.

	GBP flows			Percentage flows		
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Recommendation list	5.91 (4.67)***	5.84 (3.91)***	6.24 (3.24)***	0.01 (3.82)***	0.01 (2.90)***	0.01 (2.00)**
Added to the Recommendation List	-	-2.96 (-1.52)	-2.16 (-0.75)	-	0.00 (0.32)	0.01 (0.98)
Added to the Recommendation List (t-2)	-	-	-1.56 (-0.68)	-	-	0.00 (0.78)
Added to the Recommendation List (t-3)	-	-	-1.66 (-1.08)	-	-	0.00 (0.12)
Removed from the Recommendation List	-	-4.30 (-3.67)***	-4.41 (-3.62)***	-	-0.01 (-3.19)***	-0.01 (-3.34)***
Removed from the Recommendation List (t-2)	-	-	-2.86 (-2.09)**	-	-	-0.01 (-2.28)**
Removed from the Recommendation List (t-3)	-	-	-1.65 (-2.44)**	-	-	0.00 (0.23)
Fund Age	0.20 (4.62)***	0.14 (4.16)***	0.18 (4.02)***	0.00 (3.31)***	0.00 (2.45)**	0.00 (3.25)***
Fund Size	0.00 (-3.20)***	0.00 (-3.17)***	-0.01 (-3.12)***	-0.01 (-4.62)***	-0.01 (-4.56)***	-0.01 (-4.55)***
Return Standard Deviation	-5.05 (-0.46)	-3.18 (-0.29)	-2.54 (-0.19)	0.03 (0.55)	0.04 (0.63)	0.03 (0.49)

	GBP flows			Percentage flows		
Turnover	-0.19	-0.18	-0.20	-0.00	-0.00	-0.00
	(-1.48)	(-1.44)	(-1.39)	(-1.18)	(-1.16)	(-1.21)
Total expense ratio	-0.17	-0.22	-0.01	0.00	0.00	0.00
	(-0.57)	(-0.78)	(-0.03)	(1.10)	(1.01)	(0.96)
Morningstar 5 Star	1.27	1.32	1.54	0.00	0.00	0.00
	(2.90)***	(3.00)***	(2.73)***	(1.74)*	(1.67)*	(1.47)
Morningstar Gold	-6.21	-6.07	-6.93	-0.01	-0.01	-0.01
	(-1.33)	(-1.32)	(-1.30)	(-1.21)	(-1.21)	(-1.20)
Morningstar Gold, Silver, and Bronze	0.56	0.55	0.53	-0.00	-0.00	-0.00
	(1.20)	(1.19)	(0.96)	(-1.18)	(-1.15)	(-1.22)
Prior 1-Year Performance	1.02	1.04	1.15	0.00	0.00	0.00
	(3.09)***	(3.15)***	(2.95)***	(2.62)***	(2.66)***	(2.64)***
Prior 3-Year Performance	0.45	0.37	0.10	0.00	0.00	0.00
	(0.88)	(0.75)	(0.14)	(1.98)**	(1.88)*	(1.73)*
Year, Platform, and Fund Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
R²	0.26	0.27	0.29	0.86	0.86	0.87
Observations	9,455	9,455	8,124	8,421	8,421	7,229

Source: Morningstar Direct, data requested from a sample of UK direct-to-consumer platforms

	GBP flows			Percentage flows		
Turnover	-0.19	-0.18	-0.20	-0.00	-0.00	-0.00
	(-1.48)	(-1.44)	(-1.39)	(-1.18)	(-1.16)	(-1.21)
Total expense ratio	-0.17	-0.22	-0.01	0.00	0.00	0.00
	(-0.57)	(-0.78)	(-0.03)	(1.10)	(1.01)	(0.96)

Table VIII: Regressions of Asset Flows on Past Fund Recommendations - Interaction Effects

This table reports the results of pooled time-series cross-sectional regressions of yearly platform specific GBP and percentage asset flows on past fund recommendations and interactions of this variable with other variables of interest. GBP flows are expressed in millions of GB pounds. Percentage flows are computed as the ratio of platform specific pound flows to total assets under management at the end of the previous year. Each column represents a separate regression. Affiliated is an indicator variable that has the value of one if the fund is affiliated with the platform and zero otherwise. Platform Revenue from the fund is the revenue obtained by the platform from each pound individuals invest in the fund through the platform (in %). All regressions include a set of lagged control variables: the fund age, the fund size (the natural logarithm of the fund's size in the relative flow regressions), the volatility of monthly fund returns, fund turnover, the total expense ratio of the fund, indicator variables for Morningstar five star-rated funds, Morningstar Analysts' gold-rated funds (previously elite), and Morningstar Analysts' gold-, silver-, or bronze-rated funds (previously elite or superior), performance percentiles and indicator variables for calendar years, platforms, and individual funds (not reported). Performance percentiles are calculated over the previous one and three years based on funds in the same Morningstar category. t-statistics based on standard errors clustered at the fund level are included in parentheses. Significance levels are denoted by *, **, and ***, which correspond to the 10%, 5%, and 1% levels, respectively.

	GBP flows		Percentage flows	
	(1)	**(2)**	**(3)**	**(4)**
Recommendation list	6.33	8.69	0.01	0.01
	(4.70)***	(3.30)***	(3.74)***	(1.66)*
Recommendation List × Affiliated	-5.18	-	-0.00	-
	(-3.65)***		(-1.14)	
Recommendation List × Platform Revenue from Fund	-	-4.31	-	0.00
		(-1.37)		(0.44)
Platform Revenue from Fund	-0.35	-0.20	-0.00	-0.00
	(-1.11)	(-0.72)	(-0.56)	(-0.70)
Fund Age	0.21	0.23	0.00	0.00
	(4.79)***	(4.43)***	(4.09)***	(4.08)***
Fund Size	0.00	0.00	-0.01	-0.01
	(-3.20)***	(-3.21)***	(-4.61)***	(-4.62)***
Return Standard Deviation	-5.02	-5.25	0.03	0.03
	(-0.45)	(-0.47)	(0.57)	(0.59)
Turnover	-0.20	-0.21	-0.00	-0.00
	(-1.55)	(-1.57)	(-1.20)	(-1.19)
Total expense ratio	0.01	0.07	0.00	0.00
	(0.04)	(0.23)	(1.07)	(0.99)

	GBP flows		Percentage flows	
Morningstar 5 Star	1.28	1.31	0.00	0.00
	(2.89)***	(2.89)***	(1.74)*	(1.74)*
Morningstar Gold	-6.27	-6.32	-0.01	-0.01
	(-1.33)	(-1.32)	(-1.21)	(-1.21)
Morningstar Gold, Silver, and Bronze	0.59	0.57	-0.00	-0.00
	(1.25)	(1.20)	(-1.18)	(-1.18)
Prior 1-Year Performance	1.02	1.01	0.00	0.00
	(3.11)***	(3.06)***	(2.65)***	(2.64)***
Prior 3-Year Performance	0.44	0.46	0.00	0.00
	(0.88)	(0.90)	(1.97)**	(1.97)**
Year, Platform, and Fund Fixed Effects	Yes	Yes	Yes	Yes
R²	0.26	0.26	0.86	0.86
Observations	9,391	9,391	8,378	8,378

Source: Morningstar Direct, data requested from a sample of UK direct-to-consumer platforms

	GBP flows		Percentage flows	
Morningstar 5 Star	1.28	1.31	0.00	0.00
	(2.89)***	(2.89)***	(1.74)*	(1.74)*

Table IX: Performance of Recommended and Non-Recommended Funds

This table shows the performance of funds that are listed as recommended in the internally produced lists available on the platforms in our study. The table also shows the performance of funds not recommended in these lists that are also available on these platforms, and the difference in performance between recommended and not recommended funds. Performance is measured using returns in excess of category benchmarks selected by Morningstar. The first column shows results for the full sample of recommended and not recommended funds. The second column shows results for a matched sample of recommended and not recommended funds classified in the same (level 2) Morningstar category, thus effectively comparing recommended and not recommended funds category by category. The last two columns repeat these calculations for equity and fixed income funds only. The first part of the table shows the results assuming funds are held only for the period they are listed (or not) in these recommendation lists whereas the second part of the table shows the same statistics for portfolios of funds built assuming investors hold them for five years starting each listing month (or until the end of our sample period). Excess returns are expressed in % per year. Statistics are computed on monthly returns and annualized by multiplying monthly returns by twelve. The sample period is January 2006 to December 2015. t-statistics based on standard errors, robust to conditional heteroscedasticity and serial correlation of up to two lags as in Newey and West (1987), are reported in parentheses. ***, **, * denote statistical significance at 1%, 5%, and 10% levels, respectively.

		Average excess return over benchmark	Average excess return over benchmark: matched sample	Average excess return over benchmark: equity and fixed income funds only	Average excess return over benchmark: matched sample, equity and fixed income funds only
Holding Period for as long as Listed	Recommended Funds	0.08% (0.11)	0.06% (0.08)	0.20% (0.26)	0.18% (0.23)
	Non-Recommended Funds	-0.86% (-1.35)	-0.54% (-0.81)	-0.48% (-0.84)	-0.34% (-0.52)
	Recommended minus Non-Recommended Funds	0.94% (3.75)***	0.60% (2.88)***	0.68% (2.31)**	0.52% (2.36)**
Five-year Holding Period	Recommended Funds	-0.01% (-0.02)	-0.03% (-0.03)	0.11% (0.16)	0.10% (0.14)
	Non-Recommended Funds	-0.84% (-1.32)	-0.51% (-0.76)	-0.49% (-0.86)	-0.33% (-0.50)
	Recommended minus Non-Recommended Funds	0.83% (4.32)***	0.48% (3.21)***	0.60% (2.71)***	0.43% (2.79)***

Source: Morningstar Direct, data requested from a sample of UK direct-to-consumer platforms

Table X: Recommendation Performance by Affiliation and Revenue Share

This table shows the performance of recommended funds that are affiliated with the platforms where recommendations are listed, and the performance of recommended funds not affiliated with the platforms. Separately it shows the performance of recommended funds in the top and bottom half of revenue generated for the platform where the recommendations are listed. Performance is measured using returns in excess of category benchmarks selected by Morningstar. The first column shows results for the full sample of recommended and non-recommended funds assuming funds are held only for the period they are listed (or not). The second column shows results for a matched sample of recommended and non-recommended funds classified in the same (level 2) Morningstar category, thus effectively comparing recommended and non-recommended funds category by category in each platform. The third and fourth columns show the same statistics for portfolios of funds built assuming investors hold recommended and non-recommended funds for five years starting at each listing month (or until the end of our sample period). Excess returns are expressed in % per year. Statistics are computed on monthly returns and annualized by multiplying returns by twelve. The sample period is tailored to the issue under study (excludes the post-RDR period for the revenue shared portfolios and periods with no affiliated funds in lists for the affiliation based portfolios). t-statistics based on standard errors, robust to conditional heteroscedasticity and serial correlation of up to two lags as in Newey and West (1987), are reported in parentheses. ***, **, * denote statistical significance at 1%, 5%, and 10% levels, respectively.

		Holding Period for as long as Listed		Five-year Holding Period	
		Average excess return over benchmark	Average excess return over benchmark: matched sample	Average excess return over benchmark	Average excess return over benchmark: matched sample
Affiliation	Recommended Funds (Affiliated)	0.57% (0.60)	0.57% (0.60)	-0.58% (-0.51)	-0.58% (-0.51)
	Recommended Funds (Not Affiliated)	0.56% (0.78)	0.53% (0.74)	-0.02% (-0.03)	-0.03% (-0.05)
	Recommended Affiliated minus Non-Recommended	1.05% (1.53)	-0.03% (-0.07)	0.27% (0.36)	-0.13% (-0.22)
	Recommended Not Affiliated minus Non-Recommended	1.04% (4.17)***	0.74% (3.98)***	0.82% (4.13)***	0.49% (3.12)***
Platform Revenue from the Fund	Recommended Funds (High Revenue)	0.02% (0.02)	-0.01% (-0.01)	0.03% (0.04)	-0.01% (-0.02)
	Recommended Funds (Low Revenue)	0.14% (0.19)	0.13% (0.18)	-0.49% (-0.82)	-0.48% (-0.79)
	Recommended High Revenue minus Non-Recommended	0.83% (1.66)	0.31% (0.80)	0.98% (2.84)***	0.45% (2.10)**
	Recommended Low Revenue minus Non-Recommended	0.95% (3.37)***	0.75% (3.31)***	0.45% (2.04)**	0.34% (2.08)**

Source: Morningstar Direct, data requested from a sample of UK direct-to-consumer platforms

Source: Morningstar Direct, data requested from a sample of UK direct-to-consumer platforms