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August 17, 2017

Maureen Jensen, CEO and Chair
Ontario Securities Commission
20 Queen St. W., 22nd Floor, Toronto, ON M5H 3S8

CC. Paul C. Bourque, President and CEO, Investment Funds Institute of Canada

Re: A Reply to IFIC, Oliver Linton, Ondrej Tobek, Benoit Perron, and Allan Timmermann regarding "A Dissection of Mutual Fund Fees, Flows, and Performance" submitted to the CSA in October 2015

Dear Maureen,

In June 2017, Professor Oliver Linton, Mr. Ondrej Tobek, Professor Benoit Perron, and Professor Allan Timmermann published in a PWC report comments on our 2015 report for CSA entitled "A Dissection of Mutual Fund Fees, Flows, and Performance". In this letter, we provide replies to their comments. Also, we provide information on academic integrity, proper disclosure, and normal standards of academic conduct. We hope that you will make this letter public for the purpose of full disclosure to those that have a vested stake in the debate surrounding mutual fund fees in Canada.

Rather than repeat our responses, and in an effort to be transparent about the questions received, we have posted all our responses to the questions received thus far below. We have grouped questions into three subject areas – (I) academic integrity, (II) research questions from Professor Linton and Tobek, and (III) research questions from Professor Timmermann – to make it easier for readers to see all the questions asked on a particular theme.

We thank all those who have taken the time to provide questions and comments, and thank Professor Linton and Mr. Tobek, Professor Perron, and Professor Timmermann for their comments.

Sincerely,

Douglas Cumming

Attachments:

Frequently Asked Questions that followed from the June 9, 2017, IFIC Submission about the

Dissection of Mutual Fund Fees, Flows and Performance **Report**
August 15, 2017

Subsequent to the release of our paper and in response to several presentations we made to industry groups, we received many questions and comments. Rather than repeat our responses, and in an effort to be transparent about the questions received, we have posted all our responses to the questions received thus far below. We have grouped questions into three subject areas – (I) academic integrity, (II) research questions from Professor Linton and Tobek, and (III) research questions from Professor Timmermann – to make it easier for readers to see all the questions asked on a particular theme.

We thank all those who have taken the time to provide questions and comments, and thank Professor Linton and Mr. Tobek, Professor Perron, and Professor Timmermann for their comments.

(I) Subject Area: Academic Integrity

Q1: When did you receive the papers by Oliver Linton and Ondrej Tobek (dated December 22, 2016), Benoit Perron (dated May 20, 2016), and Allan Timmermann (dated December 20, 2016)? What is the norm for sending comments and questions on academic papers?

A1: We received the Professor Linton and Mr. Tobek paper on March 24, 2017, which was sent 1 week in advance of a conference held on March 31, 2017. We received the papers by Professor Perron and Professor Timmermann on June 14, 2017. Normally, when a professor has comments on another professor's work, the comments are sent at the time they are prepared.

The timing is notable because we have presented the paper at a number of workshops and conferences (including for example in alphabetical order CIBC, The Exchange Traded Funds Conference (Ottawa), Fidelity Financial, Financial Management Association Europe (Helsinki), Hong Kong Polytechnic University, Investor's Group, Northern Finance Association, Ontario Securities Commission, University of Birmingham, University of Exeter, and York University). As we have received a variety of suggestions over the course of this feedback, we have been making some updates to the paper that directly overlap with some of the suggestions of these IFIC commentaries. As yet, we have not publicly released a new version of the paper because none of the main conclusions from the prior draft have changed. Below, in subject areas (II) and (III) we explain these some of updates and other robustness checks in more detail. We would have been happy to have a more direct discussion and reply to Professor Linton and Mr. Tobek, Professor Perron, and Professor Timmermann had they sent their comments to us in a more timely fashion when they were written. We had no knowledge that they were preparing comments for us until the date that they were sent, but had we known, we could have informed them about the other things we have been done with the robustness checks and other suggestions in their commentaries. Normally, this direct process is what academics do to be helpful to one another to aid the development of research that informs the best possible outcome for interested parties.

Q2: The papers by Professor Linton and Mr. Tobek, Professor Perron, and Professor Timmermann do not acknowledge any form of compensation and from whom. Were they paid to prepare these commentaries? What are the norms of disclosure for payment in providing an academic opinion?

A2: In the middle of page 41 of the PWC (2017) report (which is page 107 of the IFIC submission), it states:

"In addition, there are problems with the conclusions drawn by this report. Firstly, as Perron notes, the report is not clear about what objective investors are trying to achieve. Therefore, it does not have a metric on which to clearly compare embedded commissions and other forms of compensation. Without such a metric, one cannot answer whether fee-based or commission-based remuneration is better for individual

investors.75 See Appendix E for the full text of the three papers mentioned here, *which were funded by IFIC*." [emphasis added]

Apart from this obscure reference buried in a PWC report (that was not prepared by IFIC or Professors Linton, Tobek, Perron, and Timmermann) about payment from IFIC to Professors Linton, Tobek, Perron, and Timmermann, there is no other mention or acknowledgement of payment from IFIC to Professors Linton, Tobek, Perron, and Timmermann anywhere either by IFIC or by Professors Linton, Tobek, Perron, and Timmermann. This PWC reference is *evidence* of a financial conflict interest in the comments of Professors Linton, Tobek, Perron, and Timmermann, and not *disclosure* of a financial conflict of interest.

Ironically, financial conflicts of interest are at the heart of the matter pertinent to the study of mutual fund fees that were the subject of our empirical report.

The IFIC Submission (2017) repeatedly describes the reviews of Linton, Tobek, Perron, and Timmermann as "Peer Reviews" (e.g., Appendix F, page 57). This label of "peer review" is grossly misleading, as these reviews are "paid reviews" paid for by IFIC to further their lobbyist efforts.

If a professor is compensated for preparing a report, then that support must be acknowledged in that report. Failure to do so constitutes research misconduct, as explicitly stated in Canadian policies on research misconduct (see for example http://www.nserc-crsng.gc.ca/_doc/NSERC-CRSNG/HAL_Report_e.pdf and http://www.rcr.ethics.gc.ca/eng/policy-politique/framework-cadre/). There are very similar policies in the United Kingdom and the United States, and many other places around the world. Further, all reputable academic outlets including journals and granting agencies and the like require that conflicts of interest and funding sources be disclosed. Such disclosure is standard academic practice, including the journals that Professor Linton, Perron, and Timmermann have published in (we are unaware of any publications on Mr. Tobek).

Q3: Professor Benoit Perron at the University of Montreal states in the first sentence of the second paragraph (page 163 of the IFIC report): "There are many dubious methodological choices made by the authors, but overall, the quality of the econometric work is much better than previous work by Cumming that I have analyzed." What do you make of these comments?

A3: We think comments like this one are unfortunate. It is impossible to know what Professor Perron is referring to in respect of Professor Cumming's "previous work" as he does not actually reference any other previous work. So we can't directly respond to Professor Perron's comments. And in view of the nature of Professor Perron's comments that directly attack Professor Cumming's credibility generally without any specific reference to respond to, we have disregarded his comments altogether. We feel this is okay to not directly reply here, as our replies to the other 2 papers cover all of the pertinent issues pertaining to the work on mutual fees.

(II) Subject Area: Research Questions from Professor Linton and Mr. Tobek

Q5: There appears to be endogeneity problems with the regressions. That is, the right-hand-variables variables not only cause the left-hand-side variables, but the left-hand-side variables also cause the right-hand-side variables. Specifically, Professor Linton and Mr. Tobek suggest in subsections 5.1-5.3 that we should consider other specifications in our alpha regressions that include lagged alphas.

A5: Pursuant to some conference presentations, we have had similar questions from others, and questions about what happens to the results when we include fees directly in the alpha regressions instead of merely our flow slope and flow intercept variables. For example, in one of our robustness checks, we dropped data where there was evidence of some serial correlation and found the results to be very robust. As another robustness check, we included lagged alphas and fees directly in the alpha regressions. A snapshot of some of the regressions we have run is provided immediately below.

The findings below are very consistent with what we reported early in our paper: higher trailer fees are associated with worse performance. While these are merely 6 other specifications that we have considered, we note that we have considered numerous of other specifications to consider robustness, and cannot find a specification that indicates otherwise.

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Prior Performance						
Alpha Lagged	0.0228***	0.0197***	0.0165***	0.0186***	0.0181***	0.0167**
	(3.76)	(3.41)	(3.39)	(2.68)	(2.59)	(2.43)
Incentive Fees						
Performance Fee (%)	0.0295***	0.0221***	0.0216***	0.0285***	0.0341**	0.0389**
	(3.72)	(3.54)	(3.38)	(2.95)	(2.57)	(2.34)
Sales Charges						
Deferred Sales Charge Year 1	-0.0244***	-0.0236***	-0.0227***	-0.0209***	-0.0206**	-0.0191**
	(-4.48)	(-3.53)	(-3.57)	(-3.14)	(-2.49)	(-2.46)
Deferred Sales Charge Slope		-0.322***	-0.329***	-0.283***	-0.295***	-0.327***
		(-4.29)	(-4.30)	(-3.76)	(-3.22)	(-2.77)
Front-End Commission paid (%)				-0.00603	-0.00442	0.00665
				(-0.14)	(-0.10)	(0.16)
Management Fees and Operating Expenses						
Management Expense Ratio(MER)%	-0.0171	-0.0302	-0.0223*	-0.0224*	-0.0197*	-0.0275
	(-1.35)	(-1.58)	(-1.89)	(-1.93)	(-1.67)	(-1.04)
Negotiated Management Fee (%)	0.00476***	0.00583***	0.00595***	0.00593***	0.00586***	0.00497**
	(3.46)	(4.52)	(2.83)	(3.55)	(3.54)	(2.66)
Trading Expense Ratio (TER) %					0.187	0.160
					(1.58)	(0.27)
Trailing Commissions						
Maximum Posted Initial Trailer Fee (%)	-0.0477***	-0.0575***	-0.0713***	-0.0714***	-0.0615***	-0.0592***
	(-3.53)	(-3.48)	(-3.72)	(-3.82)	(-3.11)	(-2.88)
Sales Commission paid for DSC purchases (%)			-0.00547**	-0.00552**	-0.00482**	-0.00539**
			(-2.22)	(-2.11)	(-2.24)	(-2.26)

Trailer Slope						0.0490
						(0.96)
CIFSC Fund Category Control?	Yes	Yes	Yes	Yes	Yes	Yes
Fund Risk Classification Control?	Yes	Yes	Yes	Yes	Yes	Yes
Discount Brokerage Series Control?	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-0.0907***	-0.148***	-0.0538***	-0.0393***	-0.0390***	-0.0532***
	(-2.98)	(-3.57)	(-3.68)	(-3.01)	(-3.00)	(-3.30)
Number of Observations	406775	406775	406775	406775	406775	406775
Number of Clusters (FundSERV Code)	9595	9595	9595	9595	9595	9595
Number of Clusters (Month)	131	131	131	131	131	131
R^2	0.042	0.056	0.061	0.068	0.075	0.085
F	112.2***	55.74***	56.87***	50.65***	50.30***	43.09***

Sometimes it helps to take a step back and look at some raw pictures in the data to see what the data are telling us, without getting bogged down in terms of debates as to what is the 'ideal' regression model that controls for other things equal. Put differently, we look at the summary statistics and run some comparison of means and medians tests to see if the data are consistent with the regression results. The picture immediately below, for example, was presented in our paper which shows the change in alpha (at date "0") for funds that raised and lowered their trailer fees over the prior 6 months and subsequent year. The results are clear: performance is negatively associated with trailer fees.

In short, we think it is clear from the data that that trailer fees are negatively associated with performance.
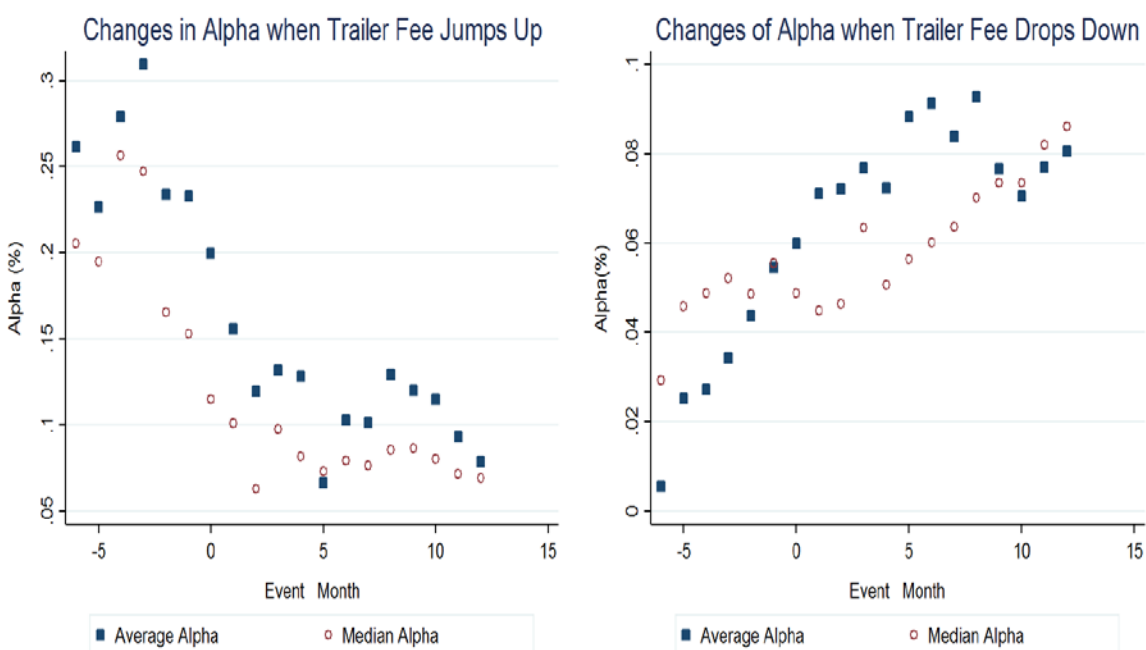
Q6: Professor Linton and Mr. Tobek in section 5.4 ask about "some further econometric issues" that we reply to here.

A6: First, Professor Linton and Mr. Tobek suggest there are problems with errors in estimating a 12-month alpha. In response, we note that Professor Linton and Mr. Tobek seem unaware that the version of the paper distributed by the CSA in February 2016 presented a number of additional robustness checks, shows alternative econometric models with over 5 separate online appendices with 36-month alphas, Sharpe ratios, raw returns, and alternative regression models to generate alphas, among other things. We prepared those appendices after the original October 2015 report was distributed, not knowing whether or not the findings would be consistent, and we would have been happy to show any inconsistencies in the models with the original paper. But it turns out the entire set of alternative specifications give rise to exactly the same conclusions as in the original paper.

Second, Professor Linton and Mr. Tobek suggest that we need more control variables, to consider subsets of data, show robustness to random samples, and suggest that static specifications are not stable over time or hold in the long run and that our findings are good for only 1-month lead regression specifications. In response, we note that we have considered two-way fixed effects models by both month or year and fundserv code and the results are robust. Also, we have considered specifications to show robustness to more variables on a subsample of data with more controls for risk classifications. Below, we present some of these models for the different types of flow, with Model 1 for net retail flow as the focal point of interest from our original paper.

	Model 1	Model 2	Model 3	Model 4	Model 5
	Net Retail Flow	Net Aggregate Flow	Switches In - Switches Out	PAC Inflows - SWP Outflows	Reinvested Distributions - Paid Distributions
Alpha Lagged	0.00265***	0.00189***	0.000732***	0.0000195**	0.0000436
	(3.57)	(4.98)	(3.36)	(1.97)	(1.34)
Alpha Lagged ^2	0.000336	0.000295**	0.000258***	0.00000699	0.00000301
	(1.28)	(2.19)	(3.19)	(0.83)	(1.62)
Management Expense Ratio(MER)%	0.000638***	0.000278***	-0.000602*	0.000117***	-0.000105
	(5.19)	(3.58)	(-1.68)	(5.40)	(-1.24)
Alpha Lagged * Management Expense Ratio	-0.000281**	-0.000267	-0.000108***	0.00000373**	0.0000145
	(-2.37)	(-0.67)	(-2.74)	(2.37)	(1.55)
Trading Expense Ratio (TER) %	0.000259	-0.000162	-0.000119***	-0.00000189***	-0.0000407*
	(1.16)	(-0.96)	(-4.10)	(-2.59)	(-1.67)
Alpha Lagged * Trading Expense Ratio	0.0000303	0.000124	-0.0000157*	-0.00000155	-0.00000104
	(0.22)	(1.46)	(-1.74)	(-0.80)	(-0.47)
Maximum Posted Initial Trailer Fee (%)	0.0118***	0.00657***	-0.00263***	0.000208***	-0.0000295**
	(5.31)	(3.54)	(-4.31)	(5.90)	(-1.97)
Alpha Lagged * Maximum Posted Initial Trailer Fee	-0.00381***	-0.00171***	0.000984***	0.000035	-0.0000316**
	(-3.30)	(-3.25)	(3.56)	(1.13)	(-2.49)

Trailer Slope	0.00512***	0.00547	0.00113	-0.000291***	0.000223**
	(3.14)	(1.57)	(1.58)	(-9.34)	(2.02)
Alpha Lagged * Trailer Slope	0.00552*	0.00115***	0.000624***	0.0000501***	-0.000111*
	(1.71)	(4.76)	(3.47)	(2.80)	(-1.66)
Deferred Sales Charge Year 1	-0.000734***	-0.000850	-0.0000522***	-0.0000245***	0.0000285***
	(-3.65)	(-1.21)	(-3.19)	(-6.37)	(5.66)
Alpha Lagged * DSC Amount Year 1 (%)	-0.000192**	-0.000235***	0.0000700	0.0000136***	-0.0000146
	(-2.55)	(-5.77)	(0.74)	(5.68)	(-1.45)
Deferred Sales Charge Slope	-0.0284***	-0.0256*	-0.00785***	-0.00278	-0.00136***
	(-2.62)	(-1.75)	(-3.50)	(-1.47)	(-3.05)
Alpha Lagged * DSC Slope	-0.00865***	-0.00245***	-0.00633***	0.000231**	-0.000281**
	(-3.80)	(-3.81)	(-2.61)	(2.04)	(-2.07)
Sales Commission paid for DSC purchases (%)	-0.000542***	-0.000419***	-0.000355***	0.00000915***	-0.0000224***
	(-4.03)	(-7.98)	(-6.05)	(4.27)	(-3.24)
Alpha Lagged * Sales Commission paid for DSC	-0.0000826***	-0.0000433***	0.000125***	-0.00000236***	-0.0000107
	(-3.94)	(-3.83)	(3.12)	(-2.63)	(-1.46)
Maximum Posted Switch Fee (%)	0.0104	-0.00652	-0.00178	0.000321	-0.000692*
	(0.87)	(-1.14)	(-0.76)	(1.48)	(-1.72)
Alpha Lagged * Maximum Posted Switch Fee (%)	0.000646**	0.000549**	-0.000183***	0.000105	0.000255*
	(2.01)	(2.11)	(-3.27)	(1.53)	(1.91)
Front-End Commission paid (%)	0.00434***	0.00556***	0.000898***	0.00021***	-0.000273***
	(10.65)	(7.81)	(3.62)	(2.59)	(-3.21)
Alpha Lagged * Front-End Commission paid	-0.00711	0.00184***	0.00144*	-0.000142	0.0000620
	(-1.54)	(4.08)	(1.70)	(-1.12)	(1.20)
Performance Fee (%)	0.000458***	0.000277***	0.000456**	-0.0000889	0.0000232
	(3.17)	(5.10)	(2.53)	(-0.11)	(1.14)
Alpha Lagged * Performance Fee	0.000175	0.000176	0.000183**	-0.0000178*	0.0000113**
	(0.23)	(0.31)	(2.01)	(-1.68)	(2.34)
Negotiated Management Fee (%)	0.00501	0.00421	0.00379***	0.000267**	-0.000643
	(1.56)	(1.24)	(6.59)	(2.27)	(-0.11)
Alpha Lagged * Negotiated Management Fee	0.00259	0.00149	-0.000761***	0.0000616	-0.000119
	(0.39)	(1.54)	(-3.01)	(1.04)	(-1.52)
CIFSC Fund Category Control?	Yes	Yes	Yes	Yes	Yes
Fund Risk Classification Control?	Yes	Yes	Yes	Yes	Yes
Discount Brokerage Series Control?	Yes	Yes	Yes	Yes	Yes
Constant	0.0295	0.0137***	0.00202	0.0000801	0.000148

	(1.15)	(2.65)	(0.42)	(0.49)	(0.18)
Number of Observations	508121	508121	508121	508121	508121
Number of Clusters (FundSERV Code)	9595	9595	9595	9595	9595
Number of Clusters (Month)	131	131	131	131	131
R^2	0.068	0.055	0.047	0.059	0.061
F	611.7	416.2	251.8	969.7	543.0

Again, Linton and Tobek seem to have not looked at the robustness checks in the online appendices, and have not communicated with us at any time whatsoever to ask us to show some other models we have run in respect of whether or not the findings are robust to these specifications.

Third, Professor Linton and Tobek indicate that proof of the Higgs boson required an evidentiary standard for a t-statistic of at least 5. We were unaware of this evidentiary standard, as in finance an law and economics the norm is to indicate statistical significance at the 1%, 5% and 10% levels (indicating a 99%, 95% and 90% change of not making an incorrect inference for t-statistics at 2.59, 1.96, and 1.65, respectively). But, coincidentally, the above Model 1 shows the t-statistic at 5.31 for the maximum posted initial trailer fee. And we note that we prepared these regressions in 2016, over a year prior to receiving the comments from Professor Linton and Mr. Tobek.

Fourth, Professor Linton and Mr. Tobek suggest that our R^2 is too low to be convincing. We explain in the paper that it is common in panel models with fundserv code fixed effects (there are 18,102 fundserv codes in the data) to have low R2, and referenced a blog posting from Stata Econometric Software to explain this issue. The alternative specifications above for fund flows show slide shows regressions with R^2 between 4.7% and 6.8%, which is quite normal in panel data models. But if we were to pick models just based on R^2, we note that it is easy to find net retail flow models with even higher R^2 values, such as these ones immediately below.

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Alpha Lagged	0.00625***	0.00756**	0.00519***	0.00522**	0.00603***	0.00587***
	(3.97)	(2.49)	(3.01)	(2.56)	(2.86)	(3.12)
Alpha Lagged^2		0.000371***		0.000520**		0.000432**
		(2.88)		(1.98)		(2.23)
Management Expense Ratio (MER) %	0.000536**	0.000471***	0.000457**	0.000786**	0.00197*	0.00181*
	(2.04)	(2.97)	(2.10)	(1.99)	(1.87)	(1.95)
Alpha Lagged * Management Expense Ratio	0.000135	-0.000488*	0.000170	-0.000223	0.000138	-0.000106
	(0.36)	(-1.73)	(1.19)	(-0.48)	(0.97)	(-0.71)
Maximum Posted Initial Trailer Fee (%)	0.0149***	0.0158***	0.0177***	0.0131***	0.0184***	0.0144***
	(4.37)	(3.86)	(7.52)	(4.78)	(7.71)	(5.08)
Alpha Lagged *Maximum Posted Initial Trailer Fee	-0.0117***	-0.0135***	-0.0145***	-0.0120***	-0.0148***	-0.0130***
	(-3.45)	(-3.19)	(-4.28)	(-3.33)	(-4.39)	(-3.58)
Trading Expense Ratio (TER) %		0.000427***	0.000635***	0.000481***	0.000695***	0.000582***
		(3.18)	(3.85)	(2.92)	(4.25)	(3.56)

Alpha Lagged * Trading Expense Ratio		0.0000308	0.0000463	0.0000503	0.0000404	0.0000435
		(1.56)	(1.41)	(1.61)	(1.12)	(0.98)
Deferred Sales Charge Year 1 (%)			-0.00527*	-0.00441	-0.00425*	-0.00439
			(-1.67)	(-1.41)	(-1.68)	(-1.43)
Alpha Lagged *Deferred Sales Charge Year 1			-0.00441***	-0.00354***	-0.00425***	-0.00241***
			(-4.11)	(-3.64)	(-3.09)	(-2.62)
Front End Commission Paid (%)				-0.0167***	-0.000970***	-0.00146***
				(-6.30)	(-6.14)	(-6.35)
Alpha Lagged * Front End Commission Paid				0.0125	0.00954	0.00853
				(0.87)	(0.68)	(1.31)
Maximum Posted Switch Fee (%)					-0.00168	-0.00205
					(-1.08)	(-0.59)
Alpha Lagged * Maximum Posted Switch Fee (%)					0.00577**	0.00484***
					(2.51)	(2.89)
Negotiated Management Fee (%)						-0.0229***
						(-9.56)
Alpha Lagged * Negotiated Management Fee						0.00205***
						(6.79)
Constant	0.00969***	0.0182***	0.386**	0.197	0.384**	0.195
	(3.55)	(2.85)	(2.26)	(1.16)	(2.28)	(1.16)
Number of Observations	14,153	14,153	14,153	14,153	14,153	14,153
R2	0.2185	0.2356	0.2514	0.2833	0.3087	0.3262
F	77.59	93.56	97.29	108.33	115.46	126.84

In this case, R^2 values are as high as 32.62%, which is unusually high for a set of panel regressions with heterogenous funds. Regardless, in no way do any of these alternative specifications change the substantive conclusions from our original paper: trailer fees raise the flow-performance intercept, lower the flow-performance slope, and are associated with worse performance over time.

Professor Linton and Mr. Tobek conclude (section 6) that our results are not reliable enough for the basis of any legislative reform or policymaking (which directly shows the motivation of their comments; see Q2 and A2 above) in view of their mistaken belief about missing robustness checks and apparent fragility. As we have indicated above, these types of comments and robustness checks have been dealt with in our drafts that we have publicly circulated, and in our other specifications that we have considered but not circulated in view of the fact that they do not affect any material inference that can be drawn from the data.

(III) Subject Area: Research Questions from Professor Timmermann

Q7: We should develop specific hypotheses for different purchase options and funds versus fund-of-funds (section 2.2)

A7: We have had similar comments from academic conference and workshop presentations to simply remove many of these fund types from the paper for the purpose of academic publication. It helps for completeness to include them all, and that is what we did for the practitioner report. Results on subsets of the data are similar in respect of not affecting the conclusions that trailer fees raise the flow-performance intercept, lower the flow-performance slope, and are associated with worse performance over time. In the final academic version of the paper we will like remove the less common types of funds to tailor the paper to an academic audience.

Q8: We should present summary statistics on raw returns and after-fee performance (section 3.2)

A8: We agree more summary statistics are better. But the paper is already 125 pages long, or about 75 pages longer than even the longest academic articles. Again, these statistics do not affect the conclusions that trailer fees raise the flow-performance intercept, lower the flow-performance slope, and are associated with worse performance over time. We show robustness to the raw return measures in our prior appendices. And the returns net of fees make performance even worse, which strengthens and not weakens the conclusions. Most academic papers work with gross returns and not returns net of fees, so that is what we have decided to present here.

Q9: We should report a longer estimation window for alpha (section 4.1).

A9: We have shown results for different estimation windows in the appendices of the extended paper. There are some minor differences in results, but they do not affect the conclusions that trailer fees raise the flow-performance intercept, lower the flow-performance slope, and are associated with worse performance over time.

Q10: We should report alphas for different subsectors and index adjustments (section 4.1.1) and risk factors (section 4.2) and regional variables (section 4.3), and some summary statistics show unusual patterns for subsets of the data by fund type or focus or purchase option (subsection 4.4).

A10: We have considered subsets of the data by fund style and regional focus and the results are robust. Also, we have considered regressions with risk classification variables (see A5 above, for example). The regressions also control for the different types of characteristics shown in the summary statistics, and these characteristics do not materially affect inferences we can draw from the data. We could not find specifications that affected the conclusions that trailer fees raise the flow-performance intercept, lower the flow-performance slope, and are associated with worse performance over time.

Q11: The figure which shows summary statistics (6-month pre- and 24 month post; also replicated under A5 above) has an unusual 6-month pre-estimation window and 24-month post-estimation window (section 4.5).

A11: The figure merely reports raw data with estimated rolling alpha windows over a 30-month period before and after an alpha change. These are not estimation windows for 6 or 24 months. Again, it is just the raw

data. We report this time period to show what happened in advance of fee changes and what happened afterwards. Folks seemed more concerned with the longer period afterwards because the consequences matters more to investors. We could show other time periods for a shorter or longer period, but the inferences are the same, and we think the graph nicely presents the information that is most pertinent.

Q12: The flow-performance regression is estimated using 1-month flows, which is a very short period (section 5). And it is unusual to have alphas estimated over a 12-month period, which may reflect return-chasing behavior.

A12: The flow-performance regression is estimated as a panel (across FundSERV codes and over time) for the full length of the data 2003-2014. Monthly flows in panel models are common estimated in the academic literature, including the papers references by Professor Timmermann; there is nothing unusual about the same approach used in our paper. Further, we have used 36-month alphas (and other performance measures) as robustness checks shown in the online appendices, as explained above (e.g, A6).

Q13. Convexity could be different for different types of funds (section 5.1)

A13. Yes, convexity is slightly different for fund subsets. But the convexity of different fund subsets does not affect the conclusions that trailer fees raise the flow-performance intercept, lower the flow-performance slope, and are associated with worse performance over time. See also our reply above under A10 regarding robustness to different subsets of the data, and to A7 regarding on narrowing the set of funds that we will focus on for the academic audience.

Q14. We should report regressions with lagged flows (section 5.2)

A14: We have considered regressions with lagged flows. The lagged flow variable does not affect any conclusions in the flow regressions. But we did notice some interesting things regarding lagged flows in the regressions explaining alpha. In particular, recall that we distinguish between switches, pre-authorized contributions, systematic withdraw plans, reinvestments, and distributions, and find that different types of flow exhibit distinct characteristics with respect to fund fee and past performance than retail fund flow. It is possible that the positive correlation between retail fund inflow and switch-out reflects information asymmetry between incoming investors and current shareholders. This information asymmetry is more common when fund series are sold through dealers or brokers. Below, we present regression evidence that shows that this information asymmetry, attributed to biased purchase advice, is negatively associated with fund performance. We will likely highlight this finding in the final academic version of the paper.

	Model 1	Model 2	Model 3	Model 4	Model 5
Management Expense Ratio(MER)%	-0.0412*	-0.0307*	-0.0289	-0.0368*	-0.0353*
	(-1.79)	(-1.69)	(-0.98)	(-1.92)	(-1.83)
Trading Expense Ratio (TER) %	0.00679**	0.0068*	0.00678*	0.00678**	0.00677**
	(2.04)	(1.86)	(1.72)	(2.15)	(1.99)
Maximum Posted Initial Trailer Fee (%)	-0.0564***	-0.0569***	-0.0563***	-0.0562***	-0.0567***
	(-8.06)	(-7.93)	(-8.42)	(-8.03)	(-8.17)
Performance Fee (%)	0.00847***	0.00859***	0.00833***	0.00853***	0.00853***
	(3.89)	(3.95)	(3.83)	(3.93)	(3.92)
Positively Correlated: New Purchases and Switch-In (Yes=1; No=0)	0.0131				0.0107
	(0.39)				(0.31)

Positively Correlated: New Purchases and Switch-Out (Yes=1; No=0)	-0.0341***				-0.0207***
	(-3.46)				(-3.81)
Positively Correlated: One-time Redemptions and Switch-In (Yes=1; No=0)		-0.0111**			-0.00891*
		(-2.08)			(-1.87)
Positively Correlated: One-time Redemptions and Switch-Out (Yes=1; No=0)		0.013***			0.0154***
		(4.04)			(4.67)
Positively Correlated: New Purchases and Distribution to Unitholder (Yes=1; No=0)			0.00498		0.00904
			(0.11)		(1.02)
Positively Correlated: New Purchases and Reinvested Distribution (Yes=1; No=0)			0.00982		0.00369
			(0.22)		(0.81)
Positively Correlated: One-time Redemptions and Distribution to Unitholder (Yes=1;No=0)				-0.00278***	-0.00312***
				(-4.37)	(-4.81)
Positive Correlated: One-time Redemptions and Reinvested Distribution (Yes=1;No=0)				0.00895	0.00746
				(1.42)	(1.16)
CIFSC Fund Category Control?	Yes	Yes	Yes	Yes	Yes
Fund Risk Classification Control?	Yes	Yes	Yes	Yes	Yes
Discount Brokerage Series Control?	Yes	Yes	Yes	Yes	Yes
Constant	0.33***	0.33***	0.329***	0.332***	0.332***
	(3.14)	(3.68)	(3.98)	(4.79)	(3.05)
Number of Observations	15667	15667	15667	15667	15667
R^2	0.040	0.036	0.038	0.043	0.054
F	43.22	48.13	42.93	51.56	79.52

Q15: The scaling of the estimates is hard to interpret and appears to not match for funds that exclude fee-based purchase options, particularly with the use of 12-month alphas (section 5.3).

A15: The summary statistics for the subset of these funds are different than those of the entire sample. In view of space constraints, we did not present the summary statistics for all of the subsamples of the funds considered in the different regressions. So the attempt to redo the calculations we presented would not be possible for these subsets of funds. We felt it was appropriate and reasonable to present the results without showing 100% of the summary statistics for all subsamples. Also, we show that the results are stable with the 3-year alphas and the other performance metrics. See also A5 above.

Q16: There is a generated repressor bias in the estimated effect of alpha (section 5.4) and the results for purchase option dummies could be influenced by generated alphas (section 5.5).

A16: We show results with the raw performance measures explicitly in the appendices. The results are not materially different. See also A5 and A7 above.

Q17: The alpha regressions are biased with generated repressors (section 6), and have missing variables section 6.1) and we should have included fees directly along with other control variables (sections 6 and 6.1).

A17: We have considered a number of these alternative specifications. See A6 and A14

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