Response to Morningstar's Comments

We would like to thank Morningstar for their active engagement and conversation with us on this important topic. Our goal for this project from the onset was clear – to explore the increasingly complex decisions that investors make, and the resulting increasingly central role that information intermediaries thus play in order to aid investors in these decisions through collecting, processing, distilling, and delivering this information to them.

That led us to explore Morningstar - perhaps the principal of these information helpers. To that end, again we appreciate that Morningstar is engaging with us regarding our systematic findings. Morningstar's full comments on our analysis are linked here. Essentially these comments distill down to:

(1) Morningstar does not believe that misclassification has occurred.
(2) Morningstar believes that even if there has been misclassification, the fact that the paper refers to style-box (credit risk quality related) classifications instead of its category system, this invalidates the misclassification's importance.

The crux of the issues are:

(1) Are there misclassifications (mistakes)?
(2) Do they matter?

The data suggests that the answer to both is yes.

And in fact, when we empirically test for precisely their concerns in the data, it simply does not impact – nor can it explain – the strong patterns that exist pervasively in the data regarding both (1) and (2), with in fact many of the estimated effects becoming stronger and clearer. In the revised version of the paper, we will incorporate both sets of analyses.

(1) - Are there Misclassifications?

Morningstar asserts that our paper's treatment of "not rated" bonds is driving the results surrounding misclassification. To address this cleanly, and in order to completely rule out "not rated" assets being the problem, we simply kick out all funds with any assets not rated by the credit rating agencies. If Morningstar is right, that should completely eliminate this issue. In contrast, in this clean sample of funds, we still find a significant number of misclassified funds, and that these funds are significantly riskier, have higher returns, get extra Morningstar stars, and significantly higher flows while controlling for Morningstar categories and risk (see the tables below).

Stepping back, from the onset, our method was to take Morningstar's reported "not rated" credit percentage and multiply this by the score provided from Morningstar's formula in order to calculate classification (and hence misclassification). This seems sensible. In contrast – as outlined in Morningstar's response – allowing managers to have considerable latitude to classify assets based on how safe they believe their assets to be rather than by the rules outlined in Morningstar's own methodology could defeat the purpose of risk classifications – precisely as we find evidence for.

(2) – Do they matter?

On this issue, Morningstar believes that even if there has been misclassification, the fact that the paper refers to style-box (credit risk quality related) classifications instead of its category system invalidates the misclassification and the misclassification's importance or impact on stars received.

First, our findings still hold when we compare the funds against the Morningstar category (as opposed to risk peer group). Which is to say: misclassified funds receive significantly more stars than peer-group funds (see the tables below).

Second, to be clear, throughout the paper we deliberately compare funds against their peers as measured at a risk-peer level. The reason is simply we felt that risk pool of underlying holdings was the correct metric to be leveling peer-groups in terms of fair risk-return comparison. We had hoped that – if anything – this classification was being conservative and deferent to Morningstar, in that risk should be the primary driver of returns realized by a fund, while it is more difficult to conceptualize whether Multisector Bond Funds vs. Corporate Bond Funds are riskier vs. less risky.

In sum, we truly hope the conversation between Morningstar and ourselves will bring to light the central charge of information intermediaries, and the increasingly important role they play in modern markets, including resulting in improvements in one of the leading information sources investors rely upon.

Thank you again and sincerely yours,
Huaizhi, Lauren, and Umit

TABLES AND ANALYSIS

Below are tables and analyses from the paper, now:

1.) Excluding all funds that have “not rated” assets; and
2.) Matching against Morningstar Category Peers (as Morningstar suggests), as well as risk-adjusting.

Yields and Misclassification
(ZERO UNRATED & MORNINGSTAR CATEGORY PEERS)

In this table, we regress various yield metrics on misclassified dummy and control variables. Misclassified dummy is 1 if the official credit quality (High or Medium) is higher than the counter factual credit quality, and 0 otherwise. Funds voluntarily report their portfolio yields (1) to Morningstar. Morningstar began calculating the holding yields (2) in 2017. The 12-month total interest, coupon, and dividend payments constitute the 12-month yield (3). The sample period is Q1 2003 to Q4 2018. t-statistics are double-clustered by time and fund.

	(1) Reported $Yield_t$	(2) Calculated $Yield_t$	(3) 12-Month $Yield_{t+11}$
Misclassified $Dummy_{t-1}$	0.399**	0.557***	0.557**
	(2.484)	(3.981)	(2.325)
Reported $Duration_{t-1}$	0.110***	0.0176**	0.0930***
	(2.764)	(2.890)	(3.456)
Time x Official Fund Style FE	Yes	Yes	Yes
Time x Official MS Category FE	Yes	Yes	Yes
Observations	1,801	372	2,700
Adjusted R-squared	0.702	0.869	0.757

Misclassification and Returns
(ZERO UNRATED & MORNINGSTAR CATEGORY PEERS)

In this table, we regress fund returns on misclassified dummy and control variables. Misclassified dummy is 1 if the official credit quality (High or Medium) is higher than the counter factual credit quality, and 0 otherwise. The sample period is Q1 2003 to Q4 2018. t-statistics are clustered quarterly.

	(1) Fund Return$_t$	(2) Fund Return$_t$
Misclassified Dummy$_{t-1}$	0.178**	0.0887
	(2.361)	(1.244)
Reported Duration$_{t-1}$	0.0402	0.0418
	(0.865)	(0.891)
Average Expense$_{t-1}$	-0.233***	-0.239***
	(-5.383)	(-5.422)
Time x Official Fund Style FE	Yes	No
Time x Correct Fund Style FE	No	Yes
Time x Official MS Category FE	Yes	Yes
Observations	2,802	2,755
Adjusted R-squared	0.883	0.884

Morningstar Star Ratings and Misclassification
(ZERO UNRATED & MORNINGSTAR CATEGORY PEERS)

In this table, we regress Morningstar ratings on the misclassified dummy and controls. Since the ratings and expenses are reported at the share class level, the fund level Morningstar Ratings and the Average Expense ratio are calculated as the value weighted average of their respective share-class level values. The sample period is Q1 2003 to Q4 2018. t-statistics are clustered quarterly.

	(1) Morningstar Rating 3 Yr_t	(2) Morningstar Rating 3 Yr_t	(3) Morningstar Rating $Overall_t$	(4) Morningstar Rating $Overall_t$
Misclassified $Dummy_{t-1}$	0.691***	0.263***	0.553***	0.207**
	(6.092)	(2.844)	(4.585)	(2.151)
Reported $Duration_{t-1}$	0.0707***	-0.0595***	0.0588**	-0.0466**
	(3.883)	(-2.934)	(2.528)	(-2.022)
Average $Expenses_{t-1}$	-1.312***	-0.714***	-1.419***	-0.934***
	(-13.75)	(-8.167)	(-17.66)	(-12.53)
3 Year $Returns_{t-1}$		20.85***		16.88***
		(12.80)		(11.15)
Time x Official Fund Style FE	Yes	Yes	Yes	Yes
Time x Official MS Category FE	Yes	Yes	Yes	Yes
Observations	2,547	2,547	2,547	2,547
Adjusted R-squared	0.206	0.560	0.214	0.464

Fund Flows and Misclassification
(ZERO UNRATED & MORNINGSTAR CATEGORY PEERS)

In this table, we regress the direction of investor flows into shares on the Misclassification Dummy. The sample period is Q1 2003 to Q4 2018. t-statistics are clustered quarterly.

	(1) $Flow_t>0$	(1) $Flow_t>0$
$Misclassified\ Dummy_{t-1}$	0.117** (2.122)	0.109** (2.005)
$Reported\ Duration_{t-1}$	0.00548 (1.263)	0.00281 (0.597)
$Average\ Expenses_{t-1}$		-0.186*** (-10.65)
Time x Official Fund Style FE	Yes	Yes
Time x Official MS Category FE	Yes	Yes
Observations	7,667	7,506
Adjusted R-squared	0.085	0.110