Internet Appendix to "Mutual Fund Flows and Cross-Fund Learning Within Families"

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In this appendix we present results of three sets of robustness checks. In Tables IA.I and IA.II, we replicate the regressions in Tables II and III of the paper using alpha instead of information ratio as the performance measure. In Tables IA.III and IA.IV, we repeat our tests using information ratios and idiosyncratic return correlations estimated from the five-factor model of Pastor and Stambaugh (2003), adding traded liquidity as an additional factor. In Tables IA.V and IA.VI, we replicate our tests under the restriction that *Beta* and *Rho* are identical across funds within the same family at a given time. Table IA.VII presents the results when fund flows are not adjusted for contemporaneous style means and lagged style performance is included as an additional explanatory variable.

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Table IA.I

Responses of Fund Flows to Fund and Family Alphas

This table shows the Fama-MacBeth (1973) regression results on the responses of monthly style-adjusted fund flows to fund and family alphas (Alpha and FamAlpha, respectively). Beta and Rho are, respectively, the average manager overlap rate and the average idiosyncratic return correlation of one fund with the other funds in the family. Log(TNA), Log(Age), and Log(N) are the natural logarithms of total net asset value, fund age, and the number of funds in the family, respectively. Expense is the expense ratio. Beta, Rho, Log(TNA), Log(Age), Log(N), and Expense are demeaned using contemporaneous sample means. All explanatory variables are lagged by one month. Variable definitions are in Appendix C of the main paper. The t-statistics are Newey-West (1987) corrected for autocorrelation up to order three. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.

	Three-factor model			Four-factor model		
	(1)	(2)	(3)	(4)	(5)	(6)
Alpha	2.576***	2.742***	2.572***	2.728***	2.875***	2.714***
	(13.40)	(13.87)	(13.53)	(12.88)	(13.42)	(12.91)
$Alpha^2$	0.912***	0.917***	0.775***	1.023***	0.997***	0.855***
	(5.11)	(4.99)	(4.48)	(5.52)	(5.45)	(4.86)
FamAlpha	0.659***	0.643***	0.658***	0.767***	0.729***	0.759***
	(5.63)	(5.22)	(5.51)	(6.57)	(5.93)	(6.39)
Beta*Alpha	-0.848***	-0.697***	-0.699***	-0.754***	-0.634**	-0.598**
	(-3.34)	(-2.93)	(-2.86)	(-2.94)	(-2.61)	(-2.43)
Beta*FamAlpha	0.952***	0.745***	0.845***	1.132***	0.984***	1.087***
	(4.66)	(3.30)	(3.79)	(4.99)	(3.89)	(4.37)
Rho*Alpha	0.271	0.113	0.198	0.149	0.013	0.053
	(1.17)	(0.54)	(0.87)	(0.58)	(0.05)	(0.20)
Rho*FamAlpha	-0.542	-0.747*	-0.567	-0.648	-0.825*	-0.665
	(-1.24)	(-1.73)	(-1.28)	(-1.47)	(-1.78)	(-1.46)
Log(N)*Alpha	-0.281***	-0.357***	-0.372***	-0.265***	-0.364***	-0.362***
	(-3.60)	(-4.61)	(-4.67)	(-3.32)	(-4.69)	(-4.46)
Log(N)*FamAlpha	0.673***	0.642***	0.710***	0.751***	0.680***	0.769***
	(6.30)	(5.81)	(6.00)	(7.14)	(5.88)	(6.32)
Log(Age)*Alpha	-0.643***		-0.797***	-0.669***		-0.831***
	(-6.49)		(-7.89)	(-7.06)		(-8.53)
Log(Age)*FamAlpha	-0.409***		-0.357**	-0.323**		-0.301*
	(-2.86)		(-2.25)	(-2.35)		(-1.95)
Log(TNA)*Alpha		0.053*	0.163***		0.063**	0.179***
		(1.75)	(5.23)		(2.33)	(6.13)
Log(TNA)*FamAlpha		-0.103***	-0.071*		-0.056	-0.035
		(-2.68)	(-1.68)		(-1.23)	(-0.72)
Beta	-0.003	-0.067	-0.003	0.124	0.069	0.135
	(-0.04)	(-0.69)	(-0.03)	(1.20)	(0.62)	(1.30)
Rho	-0.033	-0.079	-0.036	-0.105	-0.143	-0.121
	(-0.35)	(-0.89)	(-0.37)	(-1.17)	(-1.65)	(-1.29)
Log(N)	0.005	0.025	-0.000	0.017	0.030	0.007
	(0.20)	(1.04)	(-0.01)	(0.70)	(1.27)	(0.30)
Log(Age)	-0.549***		-0.559***	-0.543***		-0.561***
	(-11.84)		(-11.84)	(-11.50)		(-11.59)
Log(TNA)		-0.090***	0.010		-0.080***	0.019
		(-7.39)	(0.84)		(-6.06)	(1.51)
Expense	-0.498***	-0.456***	-0.506***	-0.452***	-0.409***	-0.455***
	(-12.55)	(-9.00)	(-10.46)	(-11.93)	(-8.76)	(-10.01)
Constant	0.267***	0.284***	0.264***	0.303***	0.316***	0.299***
	(4.91)	(4.80)	(4.92)	(5.47)	(5.33)	(5.50)
Observations	132470	132470	132470	132470	132470	132470
R^2	0.043	0.039	0.045	0.042	0.038	0.045

Table IA.II

Responses of Fund Flows to Fund and Family Alphas: Two Subsamples

This table shows the Fama-MacBeth (1973) regression results on the responses of monthly style-adjusted mutual fund flows to fund and family performance, measured by alpha instead of information ratio, for two subsamples. Sample 1 consists of funds with a below-median family size-adjusted manager overlap rate (Beta), an above-median family size-adjusted idiosyncratic return correlation (Rho), and a below-mean family size (Log(N)). Sample 2 consists of funds with the opposite characteristics. Alpha and FamAlpha are fund alpha and family alpha (excluding the fund under consideration), respectively. Log(TNA), Log(Age), and Log(N) are the natural logarithms of total net asset value, fund age, and the number of funds in the family, respectively. Expense is the expense ratio. Beta, Rho, Log(TNA), Log(Age), Log(N), and Expense are demeaned using contemporaneous full sample means. All explanatory variables are lagged by one month. Variable definitions are in Appendix C of the main paper. Panel A reports the results when *Alpha* and Rho are estimated from the three-factor model, while Panel B reports results estimated using the four-factor model. The *t*-statistics are Newey-West (1987) corrected for autocorrelation up to order three. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.

A. Results from the Fama-French three-factor model

	Sample 1			Sample 2		
	(1)	(2)	(3)	(4)	(5)	(6)
Alpha	3.264***	3.035***	3.305***	2.861***	2.718***	2.948***
	(12.85)	(13.35)	(12.63)	(12.99)	(11.47)	(11.61)
$Alpha^2$	0.762***	0.692***	0.927***	0.592*	0.737**	0.957***
	(3.27)	(2.83)	(3.45)	(1.74)	(2.30)	(2.66)
FamAlpha	-0.221	-0.238	-0.246	0.937**	0.512	0.895**
	(-1.40)	(-1.46)	(-1.46)	(2.44)	(1.30)	(2.21)
Log(Age)*Alpha		-0.958***			-0.530**	
		(-4.24)			(-2.22)	
Log(Age)*FamAlpha		-0.125			-1.060**	
		(-0.33)			(-2.28)	
Log(TNA)*Alpha			0.005			0.013
			(0.06)			(0.16)
Log(TNA)*FamAlpha			-0.306***			-0.690***
			(-3.34)			(-4.99)
Log(Age)		-0.597***			-0.726***	
		(-5.62)			(-7.32)	
Log(TNA)			-0.034			-0.170***
			(-1.15)			(-4.05)
Expense		-0.315***	-0.220*		-0.767***	-0.672***
		(-2.67)	(-1.71)		(-7.72)	(-6.04)
Constant	0.306***	0.255***	0.317***	0.390***	0.289***	0.432***
	(4.76)	(4.52)	(4.82)	(5.01)	(4.38)	(4.74)
Observations	13049	13017	13017	14424	14424	14424
R^2	0.047	0.055	0.047	0.049	0.062	0.053

B. Results from the four-factor model (Fama-French plus momentum)

	Sample 1			Sample 2		
	(1)	(2)	(3)	(4)	(5)	(6)
Alpha	3.493***	3.308***	3.664***	2.851***	2.697***	2.900***
	(12.95)	(12.89)	(13.51)	(12.71)	(11.24)	(11.29)
$Alpha^2$	0.946***	0.922***	1.273***	0.171	0.272	0.383
	(3.60)	(3.85)	(4.30)	(0.46)	(0.78)	(0.96)
FamAlpha	-0.475***	-0.353*	-0.460**	1.141***	0.749**	0.963***
	(-2.73)	(-1.97)	(-2.39)	(4.50)	(2.55)	(3.60)
Log(Age)*Alpha		-1.129***			-0.678***	
		(-4.77)			(-2.99)	
Log(Age)*FamAlpha		0.560			-0.636	
		(1.35)			(-1.23)	
Log(TNA)*Alpha			-0.034			0.079
			(-0.34)			(1.25)
Log(TNA)*FamAlpha			-0.123			-0.375***
			(-1.09)			(-2.70)
Log(Age)		-0.581***			-0.658***	
		(-5.55)			(-5.55)	
Log(TNA)			-0.047*			-0.134***
			(-1.70)			(-3.08)
Expense		-0.376***	-0.309**		-0.728***	-0.651***
		(-3.41)	(-2.60)		(-7.62)	(-6.36)
Constant	0.372***	0.331***	0.373***	0.453***	0.364***	0.480***
	(6.20)	(6.17)	(5.99)	(6.41)	(6.35)	(5.96)
Observations	13407	13375	13375	14733	14733	14733
R^2	0.044	0.054	0.041	0.046	0.060	0.052

Table IA.III

Fund Flow Sensitivities: Results From A Five-Factor Model

This table shows the results of Fama-MacBeth (1973) regressions on the determinants of monthly style-adjusted fund flows when performance and idiosyncratic correlation are measured based on the Pastor-Stambaugh (2003) five-factor model. Perf and FamPerf are fund performance and family performance, respectively. Beta and Rho are, respectively, the average manager overlap rate and the average idiosyncratic return correlation of one fund with the other funds in the family. Log(TNA), Log(Age), and Log(N) are the natural logarithms of total net asset value, fund age, and the number of funds in the family, respectively. Expense is the expense ratio. Beta, Rho, Log(TNA), Log(Age), Log(N), and Expense are demeaned using contemporaneous sample means. All explanatory variables are lagged by one month. Variable definitions are in Appendix C of the main paper. The t-statistics are Newey-West (1987) corrected for autocorrelation up to order three. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.

	(1)	(2)	(3)
Perf	3.752***	3.899***	3.701***
	(14.17)	(14.92)	(14.28)
$Perf^2$	2.682***	2.731***	2.535***
	(7.41)	(7.69)	(7.28)
FamPerf	0.673***	0.550***	0.671***
	(4.95)	(4.14)	(4.84)
Beta*Perf	-0.681**	-0.675**	-0.608**
	(-2.34)	(-2.27)	(-2.09)
Beta*FamPerf	1.006***	0.953***	1.006***
	(3.10)	(2.83)	(2.87)
Rho*Perf	0.825***	0.744**	0.758**
	(2.81)	(2.52)	(2.55)
Rho*FamPerf	-1.032*	-1.073*	-1.100*
	(-1.83)	(-1.77)	(-1.85)
Log(N)*Perf	-0.362***	-0.409***	-0.438***
	(-4.54)	(-4.94)	(-5.04)
Log(N)*FamPerf	0.692***	0.638***	0.769***
	(4.26)	(3.61)	(4.11)
Log(Age)*Perf	-1.018***		-1.127***
	(-8.90)		(-9.36)
Log(Age)*FamPerf	-0.270		-0.190
	(-1.44)		(-0.91)
Log(TNA)*Perf		-0.058**	0.117***
		(-2.05)	(3.74)
Log(TNA)*FamPerf		-0.077	-0.100
		(-1.18)	(-1.36)
Beta	-0.007	-0.056	0.016
	(-0.07)	(-0.48)	(0.15)
Rho	-0.076	-0.106	-0.091
	(-0.90)	(-1.23)	(-1.03)
Log(N)	-0.001	0.008	-0.013
	(-0.06)	(0.34)	(-0.57)
Log(Age)	-0.613***		-0.636***
	(-11.37)		(-11.72)
Log(TNA)		-0.083***	0.023
		(-5.73)	(1.64)
Expense	-0.561***	-0.498***	-0.550***
	(-13.87)	(-11.00)	(-11.86)
Constant	0.314***	0.318***	0.311***
	(5.24)	(5.18)	(5.25)
Observations	132470	132470	132470
R^2	0.063	0.054	0.063

Table IA.IV

Fund Flow Sensitivities: Subsample Results from A Five-Factor Model

This table shows the Fama-MacBeth (1973) regression results on the determinants of monthly style-adjusted fund flows for two subsamples, where performance and idiosyncratic correlation are measured based on the Pastor-Stambaugh five-factor model. Sample 1 consists of funds with a below-median family size-adjusted manager overlap rate (Beta), an above-median family size-adjusted idiosyncratic return correlation (Rho), and a below-mean family size (Log(N)). Sample 2 consists of funds with the opposite characteristics. Perf and FamPerf are fund performance and family performance (excluding the fund under consideration), respectively. Log(TNA), Log(Age), and Log(N) are the natural logarithms of total net asset value, fund age, and the number of funds in the family, respectively. Expense is the expense ratio. Log(TNA), Log(Age), Log(N), and Expense are demeaned using contemporaneous full sample means. All explanatory variables are lagged by one month. Variable definitions are in Appendix C of the main paper. The first three columns report the results for sample 1, while last three columns report results for sample 2. The t-statistics are Newey-West (1987) corrected for autocorrelation up to order three. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.

	Sample 1			Sample 2		
	(1)	(2)	(3)	(4)	(5)	(6)
Perf	4.936***	4.963***	5.151***	3.634***	3.455***	3.864***
	(14.67)	(15.23)	(15.34)	(11.38)	(10.74)	(12.24)
$Perf^2$	2.129***	2.511***	2.239***	1.566***	1.578***	1.866***
	(3.10)	(3.54)	(3.11)	(3.56)	(3.57)	(4.18)
FamPerf	-0.751***	-0.560**	-0.742***	1.571***	1.116***	1.365***
	(-3.48)	(-2.47)	(-3.11)	(3.97)	(2.97)	(3.26)
Log(Age)*Perf		-1.549***			-0.996***	
		(-4.87)			(-4.00)	
Log(Age)*FamPerf		0.534			-0.187	
		(1.24)			(-0.31)	
Log(TNA)*Perf			0.100			-0.204**
			(0.68)			(-2.43)
Log(TNA)*FamPerf			-0.210			-0.357*
			(-1.15)			(-1.92)
Log(Age)		-0.687***			-0.717***	
		(-6.50)			(-5.21)	
Log(TNA)			-0.035			-0.148***
			(-1.10)			(-3.04)
Expense		-0.564***	-0.445***		-0.693***	-0.566***
		(-5.05)	(-3.69)		(-6.83)	(-4.98)
Constant	0.337***	0.315***	0.371***	0.540***	0.461***	0.608***
	(5.23)	(4.96)	(5.59)	(5.04)	(5.21)	(4.78)
Observations	13460	13428	13428	14776	14776	14776
R^2	0.062	0.076	0.064	0.059	0.080	0.068

Table IA.V

Fund Flow Sensitivity: Homogeneous Beta and Rho Within Families

This table shows the Fama-MacBeth (1973) regression results on the responses of monthly style-adjusted fund flows to fund and family performance (Perf and FamPerf) when the manager overlap rate (Beta) and idiosyncratic return correlation (Rho) are family-specific instead of fund-specific. For any given month, we estimate Beta and Rho for all funds in the same family as the simple averages of all pairwise manager overlap rates and idiosyncratic return correlations. Log(TNA), Log(Age), and Log(N) are the natural logarithms of total net asset value, fund age, and the number of funds in the family, respectively. Expense is the expense ratio. Beta, Rho, Log(TNA), Log(Age), Log(N), and Expense are demeaned using contemporaneous sample means. All explanatory variables are lagged by one month. Variable definitions are in Appendix C of the main paper. The t-statistics are Newey-West (1987) corrected for autocorrelation up to order three. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.

	Three-factor model			Four-factor model		
	(1)	(2)	(3)	(4)	(5)	(6)
Perf	3.988***	4.218***	3.956***	3.839***	4.016***	3.796***
	(14.54)	(15.07)	(14.54)	(14.28)	(15.06)	(14.36)
$Perf^2$	2.998***	3.179***	2.867***	2.673***	2.775***	2.547***
	(7.33)	(7.49)	(6.95)	(7.29)	(7.68)	(7.17)
FamPerf	0.588***	0.476***	0.589***	0.688***	0.555***	0.693***
	(4.52)	(3.58)	(4.42)	(5.01)	(4.07)	(4.97)
Beta*Perf	-0.688**	-0.732**	-0.631*	-0.564*	-0.613*	-0.490
	(-2.04)	(-2.25)	(-1.93)	(-1.79)	(-1.96)	(-1.56)
Beta*FamPerf	0.749*	0.597	0.644	0.779**	0.659*	0.733**
	(1.92)	(1.59)	(1.65)	(2.15)	(1.93)	(2.03)
Rho*Perf	2.466***	2.588***	2.437***	2.384***	2.486***	2.308***
	(6.60)	(6.80)	(6.72)	(6.41)	(6.74)	(6.39)
Rho*FamPerf	-1.138	-1.221*	-1.129	-1.354**	-1.400**	-1.365**
	(-1.64)	(-1.76)	(-1.64)	(-2.07)	(-2.10)	(-2.07)
Log(N)*Perf	-0.306***	-0.325***	-0.379***	-0.303***	-0.338***	-0.375***
	(-3.93)	(-3.76)	(-4.22)	(-4.27)	(-4.57)	(-4.69)
Log(N)*FamPerf	0.724***	0.713***	0.849***	0.759***	0.703***	0.855***
	(3.68)	(3.64)	(4.01)	(4.28)	(3.83)	(4.34)
Log(Age)*Perf	-1.064***		-1.167***	-1.035***		-1.136***
	(-8.01)		(-8.87)	(-9.09)		(-9.30)
Log(Age)*FamPerf	-0.303		-0.146	-0.330*		-0.207
	(-1.46)		(-0.64)	(-1.74)		(-0.98)
Log(TNA)*Perf		-0.090**	0.102**		-0.076**	0.107***
		(-2.23)	(2.61)		(-2.42)	(3.06)
Log(TNA)*FamPerf		-0.164***	-0.191***		-0.126**	-0.145**
		(-2.66)	(-2.85)		(-2.10)	(-2.16)
Beta	-0.118	-0.181**	-0.114	-0.041	-0.102	-0.021
	(-1.36)	(-2.04)	(-1.33)	(-0.46)	(-1.09)	(-0.24)
Rho	0.288**	0.296**	0.298**	0.238**	0.267**	0.231**
	(2.35)	(2.40)	(2.41)	(2.01)	(2.22)	(1.99)
Log(N)	0.012	0.035	0.009	0.021	0.037	0.013
	(0.50)	(1.52)	(0.42)	(0.88)	(1.52)	(0.57)
Log(Age)	-0.607***		-0.611***	-0.606***		-0.619***
	(-11.37)		(-11.27)	(-10.98)		(-10.99)
Log(TNA)		-0.103***	0.002		-0.094***	0.012
		(-7.73)	(0.16)		(-6.54)	(0.86)
Expense	-0.596***	-0.545***	-0.600***	-0.561***	-0.506***	-0.559***
	(-14.40)	(-10.57)	(-12.00)	(-14.23)	(-10.63)	(-11.84)
Constant	0.268***	0.279***	0.268***	0.309***	0.315***	0.308***
	(4.79)	(4.78)	(4.85)	(5.37)	(5.35)	(5.43)
Observations	132470	132470	132470	132470	132470	132470
R^2	0.070	0.061	0.070	0.066	0.058	0.067

Table IA.VI

Fund Flow Sensitivities in Subsamples: Homogeneous Beta and Rho

This table shows the Fama-MacBeth (1973) regression results on the responses of monthly style-adjusted mutual fund flows to fund and family performance for two subsamples when the manager overlap rate (Beta) and idiosyncratic return correlation (Rho) are family-specific instead of fund-specific. Sample 1 consists of funds with a below-median family size-adjusted manager overlap rate (Beta), an above-median family size-adjusted idiosyncratic return correlation (Rho), and a below-mean family size (Log(N)). Sample 2 consists of funds with the opposite characteristics. Perf and FamPerf are fund performance and family performance (excluding the fund under consideration), respectively. Log(TNA), Log(Age), and Log(N) are the natural logarithms of total net asset value, fund age, and the number of funds in the family, respectively. Expense is the expense ratio. Beta, Rho, Log(TNA), Log(Age), Log(N), and Expense are demeaned using contemporaneous full sample means. All explanatory variables are lagged by one month. Variable definitions are in Appendix C of the main paper. Panel A reports the results when Alpha and Rho are estimated from the three-factor model, while Panel B reports results estimated using the four-factor model. The t-statistics are Newey-West (1987) corrected for autocorrelation up to order three. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.

A. Results from the Fama-French three-factor model

	Sample 1			Sample 2		
	(1)	(2)	(3)	(4)	(5)	(6)
Perf	5.249***	4.982***	5.354***	3.716***	3.544***	3.918***
	(13.09)	(15.07)	(13.75)	(10.05)	(11.43)	(9.93)
$Perf^2$	3.048***	3.212***	3.451***	1.838**	1.608**	2.293***
	(3.40)	(3.61)	(3.28)	(2.58)	(2.60)	(3.22)
FamPerf	-0.730**	-0.420	-0.799***	1.100**	1.083**	1.151*
	(-2.61)	(-1.59)	(-2.82)	(1.99)	(2.15)	(1.95)
Log(Age)*Perf		-1.795***			-0.290	
		(-4.24)			(-1.07)	
Log(Age)*FamPerf		0.729*			0.353	
		(1.84)			(0.56)	
Log(TNA)*Perf			-0.019			-0.031
			(-0.13)			(-0.28)
Log(TNA)*FamPerf			-0.254			-0.398
			(-1.60)			(-1.11)
Log(Age)		-0.641***			-0.389***	
		(-6.92)			(-2.95)	
Log(TNA)			-0.035			-0.092*
			(-1.20)			(-1.69)
Expense		-0.578***	-0.575***		-0.553***	-0.567***
		(-5.03)	(-4.34)		(-4.42)	(-4.35)
Constant	0.304***	0.249***	0.314***	0.302**	0.284**	0.283**
	(4.55)	(4.37)	(4.71)	(2.36)	(2.35)	(2.09)
Observations	13980	13948	13948	13845	13845	13845
R^2	0.072	0.087	0.076	0.059	0.072	0.067

B. Results from the four-factor model (Fama-French plus momentum)

	Sample 1			Sample 2		
	(1)	(2)	(3)	(4)	(5)	(6)
Perf	5.123***	4.916***	5.225***	3.783***	3.688***	4.006***
	(13.46)	(15.04)	(13.80)	(10.14)	(10.59)	(10.20)
$Perf^2$	2.546***	2.612***	2.627***	2.075***	1.959***	2.443***
	(3.07)	(3.23)	(3.00)	(3.54)	(3.41)	(3.95)
FamPerf	-0.870***	-0.595**	-0.862***	1.430***	1.342**	1.415***
	(-3.40)	(-2.34)	(-3.19)	(2.73)	(2.61)	(2.70)
Log(Age)*Perf		-1.547***			-0.591***	
		(-4.24)			(-2.73)	
Log(Age)*FamPerf		0.730*			-0.975*	
		(1.77)			(-1.91)	
Log(TNA)*Perf			0.094			-0.195*
			(0.75)			(-1.83)
Log(TNA)*FamPerf			-0.159			-0.467
			(-0.94)			(-1.43)
Log(Age)		-0.603***			-0.646***	
		(-6.93)			(-5.66)	
Log(TNA)			-0.030			-0.118**
			(-1.09)			(-2.23)
Expense		-0.546***	-0.566***		-0.458***	-0.431***
		(-5.01)	(-4.56)		(-4.06)	(-3.38)
Constant	0.355***	0.309***	0.366***	0.446***	0.432***	0.450***
	(5.46)	(5.35)	(5.68)	(3.83)	(3.88)	(3.80)
Observations	14542	14510	14510	14587	14587	14587
R^2	0.063	0.078	0.066	0.058	0.071	0.065

Table IA.VII

Sensitivities of Unadjusted Fund Flows After Controlling for Style Performance

This table shows the Fama-MacBeth (1973) regression results on the responses of monthly mutual fund flows to fund and family performance after controlling for style performance (StyPerf). Unlike in all other tables, flows in this table are not adjusted by contemporaneous style means. Perf and FamPerf are fund performance and family performance, respectively. Beta and Rho are, respectively, the average manager overlap rate and the average idiosyncratic return correlation of one fund with the other funds in the family. Log(TNA), Log(Age), and Log(N) are the natural logarithms of total net asset value, fund age, and the number of funds in the family, respectively. Expense is the expense ratio. Beta, Rho, Log(TNA), Log(Age), Log(N), and Expense are demeaned using contemporaneous sample means. All explanatory variables are lagged by one month. Variable definitions are in Appendix C of the main paper. The t-statistics are Newey-West (1987) corrected for autocorrelation up to order three. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.

	Three-factor model			Four-factor model		
	(1)	(2)	(3)	(4)	(5)	(6)
Perf	4.632***	4.874***	4.590***	4.428***	4.612***	4.370***
	(16.23)	(16.59)	(16.25)	(15.92)	(16.43)	(16.00)
$Perf^2$	3.290***	3.452***	3.128***	2.951***	3.030***	2.800***
	(7.31)	(7.28)	(6.90)	(7.64)	(7.78)	(7.43)
FamPerf	0.642***	0.533***	0.633***	0.723***	0.598***	0.726***
	(5.50)	(4.55)	(5.39)	(6.27)	(5.29)	(6.22)
StyPerf	-1.210**	-1.119*	-1.241**	-0.766	-0.717	-0.762
	(-2.19)	(-1.96)	(-2.25)	(-1.06)	(-0.97)	(-1.06)
Beta*Perf	-0.858***	-0.821***	-0.789***	-0.571**	-0.543*	-0.491*
	(-2.79)	(-2.69)	(-2.68)	(-1.99)	(-1.84)	(-1.73)
Beta*FamPerf	1.134***	0.976***	1.033***	1.088***	0.971***	1.042***
	(3.35)	(2.87)	(2.95)	(3.26)	(2.85)	(2.96)
Rho*Perf	1.111***	1.034***	1.117***	0.855***	0.786**	0.815**
	(3.56)	(3.52)	(3.70)	(2.70)	(2.50)	(2.61)
Rho*FamPerf	-1.047	-1.095	-1.087	-0.971	-1.032	-1.032*
	(-1.51)	(-1.56)	(-1.55)	(-1.63)	(-1.64)	(-1.67)
Log(N)*Perf	-0.356***	-0.401***	-0.449***	-0.309***	-0.367***	-0.398***
	(-4.33)	(-4.35)	(-4.78)	(-4.08)	(-4.59)	(-4.71)
Log(N)*FamPerf	0.702***	0.709***	0.855***	0.726***	0.686***	0.842***
	(3.75)	(3.53)	(4.05)	(4.49)	(3.98)	(4.58)
Log(Age)*Perf	-1.040***		-1.169***	-0.991***		-1.117***
	(-7.23)		(-8.36)	(-7.98)		(-8.53)
Log(Age)*FamPerf	-0.163		0.012	-0.232		-0.094
	(-0.81)		(0.05)	(-1.28)		(-0.45)
Log(TNA)*Perf		-0.060	0.127***		-0.043	0.132***
		(-1.52)	(3.39)		(-1.41)	(3.82)
Log(TNA)*FamPerf		-0.163***	-0.214***		-0.126**	-0.163**
		(-2.70)	(-2.97)		(-2.15)	(-2.38)
Beta	-0.121	-0.177	-0.110	-0.026	-0.076	-0.001
	(-1.18)	(-1.61)	(-1.10)	(-0.23)	(-0.64)	(-0.01)
Rho	0.111	0.061	0.118	0.037	0.001	0.028
	(1.08)	(0.59)	(1.12)	(0.40)	(0.01)	(0.30)
Log(N)	-0.046**	-0.028	-0.056***	-0.025	-0.014	-0.040**
	(-2.14)	(-1.36)	(-2.88)	(-1.25)	(-0.67)	(-2.01)
Log(Age)	-0.649***		-0.665***	-0.641***		-0.667***
	(-11.69)		(-11.25)	(-11.14)		(-10.91)
Log(TNA)		-0.102***	0.014		-0.090***	0.025
		(-7.44)	(0.92)		(-6.23)	(1.58)
Expense	-0.537***	-0.474***	-0.534***	-0.513***	-0.446***	-0.503***
	(-12.53)	(-8.60)	(-10.20)	(-12.14)	(-8.42)	(-9.78)
Constant	0.041	0.066	0.036	0.029	0.044	0.025
	(0.27)	(0.42)	(0.24)	(0.18)	(0.27)	(0.16)
Observations	132470	132470	132470	132470	132470	132470
R^2	0.084	0.073	0.085	0.081	0.070	0.082

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