Topics in Asset Pricing

Lecture 1: Anomalies

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Outline

1. Refresher: complete market, consumption CAPM, CAPM
2. Time-series anomalies
   - Equity premium puzzle
   - Excess volatility
   - Predictability
3. Cross-sectional anomalies
   - Flat SML, idiosyncratic volatility
   - Momentum, value
   - LoOP violation
   - Fire sales

Complete market

- Agent i's valuation of asset j

$$V_{i,j,t} = \sum_{\omega_{t+1} \in \Omega_{t+1}} \pi_{i,t}(\omega_{t+1}) m_{i,t}(\omega_{t+1}) \left[D_j(\omega_{t+1}) + P_j(\omega_{t+1}) \right]$$

- Complete market
  - Perfect information: $\pi_{i,t}(\omega_{t+1}) = \pi_t(\omega_{t+1})$ for all i
  - Perfect risk sharing: $m_{i,t}(\omega_{t+1}) = m_t(\omega_{t+1})$ for all i

$\Rightarrow$ Price of asset j

$$P_{j,t} = \sum_{\omega_{t+1}} \pi_t(\omega_{t+1}) m_t(\omega_{t+1}) \left[D_j(\omega_{t+1}) + P_j(\omega_{t+1}) \right]$$

Complete market

- Price of asset j

$$P_{j,t} = E_t\left[m_{t+1}(D_{j,t+1} + P_{j,t+1})\right]$$

- Expected return of asset j

$$\begin{aligned} & E_t\left[m_{t+1}R_{j,t+1}\right] = 1 \\ \Leftrightarrow \quad & E_t[R_{j,t+1}] - R_{f,t+1} = -R_{f,t+1}Cov_t(m_{t+1}, R_{j,t+1}) \end{aligned}$$

- Special cases
  - Consumption CAPM: $m_{t+1} = \frac{\beta u_i'(c_{i,t+1})}{u_i'(c_{i,t})}$
  - CAPM: m_{t+1} affine in (minus) market return
  - Multi-factor models (Fama-French, etc.): m_{t+1} affine in factors

Informational efficiency

- Empirical literature (Fama 1970)

Form	Price reflects
strong	all private and public information
semi-strong	all public information
weak	only past price information

- Theoretical literature (Grossman 1976, Hellwig 1980, Grossman-Stiglitz 1980)

Form	Price aggregates
	all public information
fully revealing	all private information
partially revealing	a noisy signal of private information

- Large empirical literature testing (semi-strong) market efficiency
  - Test implication: returns are not predictable beyond compensation for risk
  - Main difficulty: determine compensation for risk a.k.a. "joint hypothesis problem" (one can only test market efficiency jointly with an asset pricing model)

Equity premium puzzle (Mehra and Prescott, 1985)

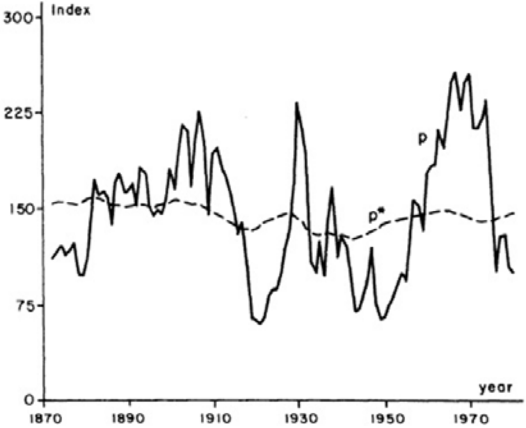
- Hansen-Jagannathan (1991) bound

$$\frac{E[R_m - R_f]}{\sigma(R_m)} \leq \frac{\sigma(m)}{E[m]} \approx \gamma\,\sigma(g_c)$$

with CRRA utility $u(c) = \frac{c^{1-\gamma}}{1-\gamma}$

- Fails for reasonable risk aversion parameter

Excess volatility (Shiller, 1981)



Time-series predictability

Table I
Return-Forecasting Regressions

The regression equation is $R^e_{t\to t+k} = a + b \times D_t/P_t + \varepsilon_{t+k}$. The dependent variable $R^e_{t\to t+k}$ is the CRSP value-weighted return less the 3-month Treasury bill return. Data are annual, 1947–2009. The 5-year regression t-statistic uses the Hansen–Hodrick (1980) correction. $\sigma[E_t(R^e)]$ represents the standard deviation of the fitted value, $\sigma(\hat{b} \times D_t/P_t)$.

Horizon k	b	$t(b)$	R^2	$\sigma[E_t(R^e)]$	$\frac{\sigma[E_t(R^e)]}{E(R^e)}$
1 year	3.8	(2.6)	0.09	5.46	0.76
5 years	20.6	(3.4)	0.28	29.3	0.62

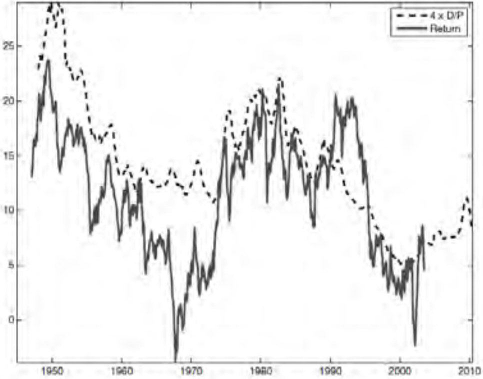


Figure 1. Dividend yield and following 7-year return. The dividend yield is multiplied by four. Both series use the CRSP value-weighted market index.

Cochrane (2011)

Campbell-Shiller (1988) decomposition

- Excess volatility and time-series predictability are two sides of the same coin

- First order Taylor expansion of $1 + R_{t+1} = \frac{D_{t+1}+P_{t+1}}{P_t}$:

$$r_{t+1} \approx constant + dp_t + \Delta d_{t+1} - \rho \ dp_{t+1}$$

  where $r_{t+1} \equiv \log(1 + R_{t+1})$, $dp_t \equiv \log(\frac{D_t}{P_t})$, $\Delta d_{t+1} \equiv \log(\frac{D_{t+1}}{D_t})$, and $\rho \in (0, 1) \approx 0.96$ (Cochrane, 2011)

- For $k \geq 1$, dividend yield can be written:

$$dp_t \approx constant + \underbrace{\sum_{j=1}^{k} \rho^{j-1} r_{t+j}}_{(1)} - \underbrace{\sum_{j=1}^{k} \rho^{j-1} \Delta d_{t+j}}_{(2)} + \underbrace{\rho^k dp_{t+k}}_{(3)}$$

  $\Rightarrow$ High dividend yield can predict (1) high long-run returns, (2) low long-run dividend growth, or (3) a rational bubble

- Run OLS regressions

$$
\begin{array}{llll}
(1) & \sum_{j=1}^{k} \rho^{j-1} r_{t+j} & = a_r & + b_r^{(k)} dp_t + \varepsilon_{t+k}^{r} \\
(2) & \sum_{j=1}^{k} \rho^{j-1} \Delta d_{t+j} & = a_d & + b_d^{(k)} dp_t + \varepsilon_{t+k}^{d} \\
(3) & \rho^{k} dp_{t+k} & = a_{dp} & + b_{dp}^{(k)} dp_t + \varepsilon_{t+k}^{dp}
\end{array}
$$

NB: $b_r^{(k)} - b_d^{(k)} + b_{dp}^{(k)} \approx 1$

Table II

Long-Run Regression Coefficients

Table entries are long-run regression coefficients, for example, $b_r^{(k)}$ in $\sum_{j=1}^{k} \rho^{j-1} r_{t+j} = a + b_r^{(k)} dp_t + \varepsilon_{t+k}^{r}$. See equations (2)–(4). Annual CRSP data, 1947–2009. "Direct" regression estimates are calculated using 15-year ex post returns, dividend growth, and dividend yields as left-hand variables. The "VAR" estimates infer long-run coefficients from 1-year coefficients, using estimates in the right-hand panel of Table III. See the Appendix for details.

	Coefficient		
Method and Horizon	$b_r^{(k)}$	$b^{(k)}_{\Delta d}$	$\rho^k b^{(k)}_{dp}$
Direct regression , $k = 15$	1.01	−0.11	−0.11
Implied by VAR, $k = 15$	1.05	0.27	0.22
VAR, $k = \infty$	1.35	0.35	0.00

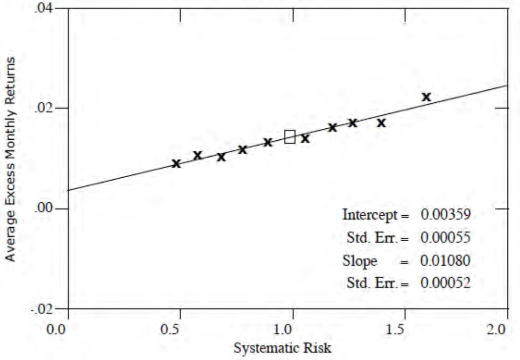
- Variance decomposition

$$
\begin{aligned}
Var(dp_t) &\approx Cov\left[dp_t, \sum_{j=1}^{k} \rho^{j-1} r_{t+j}\right] - Cov\left[dp_t, \sum_{j=1}^{k} \rho^{j-1} \Delta d_{t+j}\right] + Cov\left[dp_t, \rho^k dp_{t+k}\right] \\
&\approx \left(b_r - b_d + b_{dp}\right) Var(dp_t)
\end{aligned}
$$

Flat SML (Black, Jensen and Scholes, 1972)

- Security Market Line is too flat

Figure 1 Average excess monthly returns versus systematic risk for the 35-year period 1931-65 for each of ten portfolios (denoted by ×) and the market portfolio (denoted by □).



- Frazzini and Pedersen (2014): True across asset classes and across countries

Idiosyncratic volatility (Ang, Hodrick, Xing, Zhang, 2006)

- Stocks with high idio vol have low ER

Table VI

Portfolios Sorted by Volatility

We form value-weighted quintile portfolios every month by sorting stocks based on total volatility and idiosyncratic volatility relative to the Fama–French (1993) model. Portfolios are formed every month, based on volatility computed using daily data over the previous month. Portfolio 1 (5) is the portfolio of stocks with the lowest (highest) volatilities. The statistics in the columns labeled Mean and Std. Dev. are measured in monthly percentage terms and apply to total, not excess, simple returns. Size reports the average log market capitalization for firms within the portfolio and B/M reports the average book-to-market ratio. The row "5-1" refers to the difference in monthly returns between portfolio 5 and portfolio 1. The Alpha columns report Jensen's alpha with respect to the CAPM or Fama–French (1993) three-factor model. Robust Newey–West (1987) *t*-statistics are reported in square brackets. Robust joint tests for the alphas equal to zero are all less than 1% for all cases. The sample period is July 1963 to December 2000.

Rank	Mean	Std. Dev.	% Mkt Share	Size	B/M	CAPM Alpha	FF-3 Alpha
Panel A: Portfolios Sorted by Total Volatility							
1	1.06	3.71	41.7%	4.66	0.88	0.14	0.03
						[1.84]	[0.53]
2	1.15	4.48	33.7%	4.70	0.81	0.13	0.08
						[2.14]	[1.41]
3	1.22	5.63	15.5%	4.10	0.82	0.07	0.12
						[0.72]	[1.55]
4	0.99	7.15	6.7%	3.47	0.86	−0.28	−0.17
						[−1.73]	[−1.42]
5	0.09	8.30	2.4%	2.57	1.08	−1.21	−1.16
						[−5.07]	[−6.85]
5-1	−0.97					−1.35	−1.19
	[−2.86]					[−4.62]	[−5.92]
Panel B: Portfolios Sorted by Idiosyncratic Volatility Relative to FF-3							
1	1.04	3.83	53.5%	4.86	0.85	0.11	0.04
						[1.57]	[0.99]
2	1.16	4.74	27.4%	4.72	0.80	0.11	0.09
						[1.98]	[1.51]
3	1.20	5.85	11.9%	4.07	0.82	0.04	0.08
						[0.37]	[1.04]
4	0.87	7.13	5.2%	3.42	0.87	−0.38	−0.32
						[−2.32]	[−3.15]
5	−0.02	8.16	1.9%	2.52	1.10	−1.27	−1.27
						[−5.09]	[−7.68]
5-1	−1.06					−1.38	−1.31
	[−3.10]					[−4.56]	[−7.00]

Momentum (Jegadeesh and Titman, 1993)

Table I

Returns of Relative Strength Portfolios

The relative strength portfolios are formed based on J-month lagged returns and held for K months. The values of J and K for the different strategies are indicated in the first column and row, respectively. The stocks are ranked in ascending order on the basis of J-month lagged returns and an equally weighted portfolio of stocks in the lowest past return decile is the *sell* portfolio and an equally weighted portfolio of the stocks in the highest return decile is the *buy* portfolio. The average monthly returns of these portfolios are presented in this table. The relative strength portfolios in Panel A are formed immediately after the lagged returns are measured for the purpose of portfolio formation. The relative strength portfolios in Panel B are formed 1 week after the lagged returns used for forming these portfolios are measured. The t-statistics are reported in parentheses. The sample period is January 1965 to December 1989.

		Panel A				Panel B			
J		$K=$ 3	6	9	12	$K=$ 3	6	9	12
3	Sell	0.0108	0.0091	0.0092	0.0087	0.0083	0.0079	0.0084	0.0083
		(2.16)	(1.87)	(1.92)	(1.87)	(1.67)	(1.64)	(1.77)	(1.79)
3	Buy	0.0140	0.0149	0.0152	.0156	0.0156	0.0158	0.0158	0.0160
		(3.57)	(3.78)	(3.83)	(3.89)	(3.95)	(3.98)	(3.96)	(3.98)
3	Buy-sell	0.0032	0.0058	0.0061	0.0069	0.0073	0.0078	0.0074	0.0077
		(1.10)	(2.29)	(2.69)	(3.53)	(2.61)	(3.16)	(3.36)	(4.00)
6	Sell	0.0087	0.0079	0.0072	0.0080	0.0066	0.0068	0.0067	0.0076
		(1.67)	(1.56)	(1.48)	(1.66)	(1.28)	(1.35)	(1.38)	(1.58)
6	Buy	0.0171	0.0174	0.0174	0.0166	0.0179	0.0178	0.0175	0.0166
		(4.28)	(4.33)	(4.31)	(4.13)	(4.47)	(4.41)	(4.32)	(4.13)
6	Buy-sell	0.0084	0.0095	0.0102	0.0086	0.0114	0.0110	0.0108	0.0090
		(2.44)	(3.07)	(3.76)	(3.36)	(3.37)	(3.61)	(4.01)	(3.54)
9	Sell	0.0077	0.0065	0.0071	0.0082	0.0058	0.0058	0.0066	0.0078
		(1.47)	(1.29)	(1.43)	(1.66)	(1.13)	(1.15)	(1.34)	(1.59)
9	Buy	0.0186	0.0186	0.0176	0.0164	0.0193	0.0188	0.0176	0.0164
		(4.56)	(4.53)	(4.30)	(4.03)	(4.72)	(4.56)	(4.30)	(4.04)
9	Buy-sell	0.0109	0.0121	0.0105	0.0082	0.0135	0.0130	0.0109	0.0085
		(3.03)	(3.78)	(3.47)	(2.89)	(3.85)	(4.09)	(3.67)	(3.04)
12	Sell	0.0060	0.0065	0.0075	0.0087	0.0048	0.0058	0.0070	0.0085
		(1.17)	(1.29)	(1.48)	(1.74)	(0.93)	(1.15)	(1.40)	(1.71)
12	Buy	0.0192	0.0179	0.0168	0.0155	0.0196	0.0179	0.0167	0.0154
		(4.63)	(4.36)	(4.10)	(3.81)	(4.73)	(4.36)	(4.09)	(3.79)
12	Buy-sell	0.0131	0.0114	0.0093	0.0068	0.0149	0.0121	0.0096	0.0069
		(3.74)	(3.40)	(2.95)	(2.25)	(4.28)	(3.65)	(3.09)	(2.31)

Long term reversal (DeBondt and Thaler, 1985)

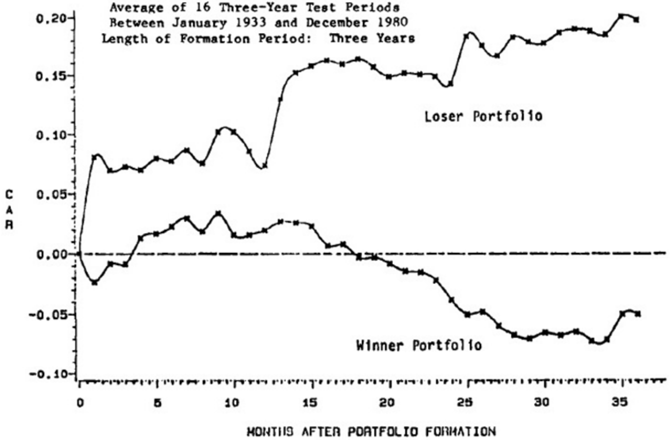


Figure 1. Cumulative Average Residuals for Winner and Loser Portfolios of 35 Stocks (1–36 months into the test period)

Value and momentum everywhere (Asness, Moskowitz and Pedersen, 2013)

- Value and momentum effects in all asset classes (equities, bonds, currencies, commodities) and all countries
- Value returns correlated with each other across assets and countries
- Same for momentum returns
- Value returns and momentum returns negatively correlated

Violation of the Law of One Price

- Previous cross-sectional anomalies are not arbitrage opportunities (not risk-free)
- Arbitrage opportunity = violation of the LoOP
- Examples

TIPS–Treasury

(Fleckenstein, Longstaff, Lustig, 2013)

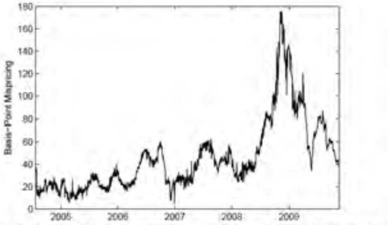


Figure 2. Weighted Average TIPS Treasury Mispricing in Basis Points.

Covered Interest Parity

(Ivashina, Scharfstein, Stein, 2015)

Euro basis, January 2007- December 2013

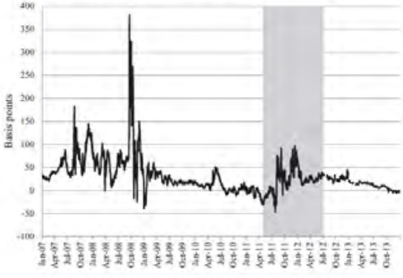


FIGURE III

Deviations from Covered Interest Parity

Demand effects

- In a frictionless market, trades driven by reasons unrelated to asset value should not affect the price
- Empirical counter-examples
  - stocks added to an index (Shleifer 1986)
  - mutual funds "fire sales" because of outflows (Coval-Stafford 2007)
  - pension funds buying long maturity bonds because of regulation (Greenwood-Vayanos 2010)
  - insurers selling downgraded bonds because of regulation (Ellul-Jotikasthira-Lundblad 2011)
  - etc.

Mutual fund flows (Lou, 2012)

Table II: Fund Responses to Capital Flows

	The outflow sample				The inflow sample			
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Intercept	**-0.059**	-0.029	-0.022	-0.022	**-0.032**	0.000	0.020	0.020
	(-6.62)	(-1.32)	(-0.85)	(-0.88)	(-3.42)	(0.02)	(1.22)	(1.21)
$flow_{i,t}$	**0.970**	**1.028**	**1.107**	**1.107**	**0.618**	**0.737**	**0.858**	**0.855**
	(16.82)	(17.64)	(10.97)	(11.27)	(15.78)	(14.64)	(10.57)	(10.57)
$own_{i,j,t-1}$		0.429		**-1.196**		-0.766		-0.471
		(1.35)		(-2.35)		(-1.50)		(-0.65)
$flow_{i,t} \times own_{i,j,t-1}$		-2.355		**-20.588**		**-12.431**		-1.669
		(-0.58)		(-3.25)		(-3.74)		(-0.51)
$liqcost_{j,t-1}$		**-7.455**		**-5.755**		**-7.529**		**-3.416**
		(-2.97)		(-5.38)		(-3.95)		(-4.77)
$flow_{i,t} \times liqcost_{j,t-1}$		**-28.559**		**-13.999**		**-25.748**		**-8.433**
		(-2.48)		(-2.18)		(-3.71)		(-2.39)
$own_{i,t-1}$			**2.171**	**3.924**			-0.364	0.212
			(3.58)	(4.06)			(-0.44)	(0.18)
$flow_{i,t} \times own_{i,t-1}$			11.265	**41.242**			**-21.337**	**-19.235**
			(1.32)	(3.10)			(-3.20)	(-2.58)
$liqcost_{i,t-1}$			-11.127	-6.084			**-18.461**	**-15.505**
			(-1.89)	(-1.24)			(-3.08)	(-2.79)
$flow_{i,t} \times liqcost_{i,t-1}$			-57.295	-44.609			**-51.076**	**-42.332**
			(-1.90)	(-1.43)			(-3.01)	(-2.49)
Adj-R^2	4.68%	6.31%	6.21%	6.43%	9.53%	10.07%	11.36%	11.46%
# Obs.	1,207,060	1,044,623	1,207,060	1,044,623	2,462,355	2,215,898	2,462,355	2,215,898

Mutual fund flows (Lou, 2012)

Panel B: Equal-weighted returns to portfolios ranked by *FIT*

Decile	excess return	3-factor alpha	4-factor alpha	excess return	3-factor alpha	4-factor alpha	excess return	3-factor alpha	excess return	3-factor alpha
	Qtr 0 (Formation Qtr.)			Qtr 1-4			Qtr 5-8		Qtr 5-12	
1	0.09%	-0.83%	-0.64%	0.68%	-0.22%	0.06%	0.90%	-0.06%	0.92%	0.05%
10	1.82%	1.08%	0.86%	0.66%	-0.02%	0.04%	0.49%	-0.33%	0.63%	-0.17%
10 - 1	**1.73%**	**1.91%**	**1.50%**	-0.03%	0.20%	-0.02%	**-0.40%**	-0.27%	**-0.30%**	**-0.23%**
	(7.77)	(8.31)	(7.38)	(-0.17)	(1.36)	(-0.10)	(-2.46)	(-1.46)	(-2.70)	(-2.10)

Mutual fund flows (Lou, 2012)

Table IV: Predicting Future Flows

	Fama-MacBeth		
	[1]	[2]	[3]
Intercept	**0.028**	**0.028**	**0.010**
	(5.38)	(5.77)	(3.65)
$alpha_{i,t}$	**4.827**	**1.766**	**0.953**
	(9.67)	(4.38)	(4.47)
$adjret_{i,t}$		**0.396**	**0.229**
		(7.34)	(6.72)
$flow_{i,t}$			**0.194**
			(8.78)
$flow_{i,t-1}$			**0.102**
			(5.28)
$flow_{i,t-2}$			**0.122**
			(6.29)
$flow_{i,t-3}$			**0.033**
			(5.47)
Adj-R^2	4.53%	7.70%	24.79%
# Obs.	98,264	98,264	95,285

Mutual fund flows (Lou, 2012)

Table V: The Expected Flow-Induced Price Effect

Panel A: Stocks ranked by $E[FIT]$												
Decile	excess return	3-factor alpha	4-factor alpha	excess return	3-factor alpha	4-factor alpha	excess return	3-factor alpha	excess return	3-factor alpha	excess return	3-factor alpha
	Qtr 1			Qtrs 1-4			Qtr 5		Qtrs 6-8		Qtrs 6-12	
1	0.38%	-0.50%	-0.25%	0.53%	-0.40%	-0.13%	0.52%	-0.24%	0.84%	-0.01%	0.94%	0.13%
10	1.21%	0.43%	0.27%	0.97%	0.18%	0.24%	0.63%	-0.01%	0.54%	-0.23%	0.67%	-0.14%
10 - 1	**0.84%**	**0.93%**	**0.53%**	**0.44%**	**0.58%**	**0.37%**	0.10%	0.23%	**-0.29%**	-0.22%	**-0.27%**	**-0.27%**
	(3.96)	(4.15)	(3.51)	(2.63)	(3.30)	(2.26)	(0.49)	(0.81)	(-2.06)	(-1.32)	(-2.17)	(-2.04)

Mutual fund flows (Lou, 2012)

Table IX: Stock Price Momentum

Panel A: The full sample						
	$k = 12$		$k = 6$		$k = 3$	
	[1]	[2]	[3]	[4]	[5]	[6]
Intercept	**0.103**	**0.092**	**0.096**	**0.077**	**0.094**	**0.084**
	(2.81)	(2.36)	(2.63)	(2.01)	(2.58)	(2.34)
$E_t[FIT_j^k]$		**0.085**		**0.145**		**0.250**
		(3.07)		(2.93)		(3.32)
$ret_{j,t-k:t-1}$	**0.020**	**0.015**	**0.027**	**0.020**	**0.024**	0.014
	(4.06)	(3.31)	(3.59)	(2.82)	(2.29)	(1.40)
$ret_{j,t}$	-0.024	**-0.029**	-0.024	**-0.030**	-0.020	**-0.029**
	(-1.67)	(-2.16)	(-1.63)	(-2.26)	(-1.35)	(-2.18)
$ret_{j,t-36,t-k-1}$	**-0.005**	**-0.004**	**-0.004**	**-0.004**	**-0.004**	**-0.004**
	(-3.19)	(-3.05)	(-2.64)	(-2.56)	(-2.54)	(-2.54)
$bm_{j,t}$	0.005	0.005	0.005	0.005	0.006	0.006
	(1.33)	(1.37)	(1.25)	(1.42)	(1.40)	(1.78)
$\log(mktcap_{j,t})$	**-0.003**	-0.003	**-0.003**	-0.002	-0.003	-0.002
	(-2.16)	(-1.73)	(-1.96)	(-1.33)	(-1.88)	(-1.59)
$turnover_{j,t}$	**-0.004**	**-0.005**	-0.004	**-0.004**	-0.004	**-0.004**
	(-2.02)	(-2.26)	(-1.87)	(-2.06)	(-1.63)	(-2.05)
Adj-R^2	7.08%	7.85%	6.75%	7.85%	6.38%	7.88%
# Obs.	198,692	198,692	198,692	198,692	198,692	198,692

Mutual fund flows (Lou, 2012)

Table VIII: Mutual Fund Performance Regressions

	Fama-MacBeth regressions of quarterly fund returns						
	[1]	[2]	[3]	[4]	[5]	[6]	[7]
Intercept	**0.050**	**0.053**	**0.053**	**0.054**	**0.049**	**0.051**	**0.051**
	(5.47)	(5.85)	(5.69)	(5.82)	(5.20)	(5.48)	(5.30)
$E_t[FIT_i^*]$	**3.081**				**2.602**	**2.952**	**2.687**
	(3.06)				(2.35)	(2.93)	(2.43)
$alpha_{i,t}$		**0.581**		**0.548**	0.042		0.005
		(3.82)		(3.64)	(0.24)		(0.03)
$flow_{i,t}$			**0.012**	**0.010**		0.004	0.004
			(2.28)	(2.08)		(0.82)	(0.93)
$expenses_{i,t}$	-0.351	-0.830	-0.765	-1.138	-0.319	-0.657	-0.653
	(-0.27)	(-0.55)	(-0.48)	(-0.75)	(-0.26)	(-0.51)	(-0.52)
$\log(age_{i,t})$	0.000	0.000	0.001	0.001	0.000	0.000	0.001
	(0.17)	(0.47)	(0.63)	(0.90)	(0.37)	(0.65)	(0.84)
$\log(numStocks_{i,t})$	**0.002**	**0.002**	**0.002**	**0.002**	**0.002**	**0.002**	**0.002**
	(3.58)	(3.95)	(3.72)	(3.78)	(3.27)	(3.44)	(3.02)
$\log(TNA_{i,t})$	-0.001	**-0.001**	**-0.001**	**-0.001**	-0.001	**-0.001**	**-0.001**
	(-1.91)	(-2.18)	(-2.18)	(-2.30)	(-1.82)	(-2.08)	(-2.00)
$turnover_{i,t}$	**0.002**	0.002	0.002	0.002	**0.001**	**0.002**	**0.001**
	(2.05)	(1.76)	(1.56)	(1.74)	(1.96)	(2.06)	(1.96)
Adj-R^2	15.77%	11.03%	8.06%	11.91%	17.46%	16.53%	18.24%
# Obs.	93,805	93,805	93,805	93,805	93,805	93,805	93,805

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