



Division of Economic and Risk Analysis

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Analysis Supporting the SEC's Rulemaking

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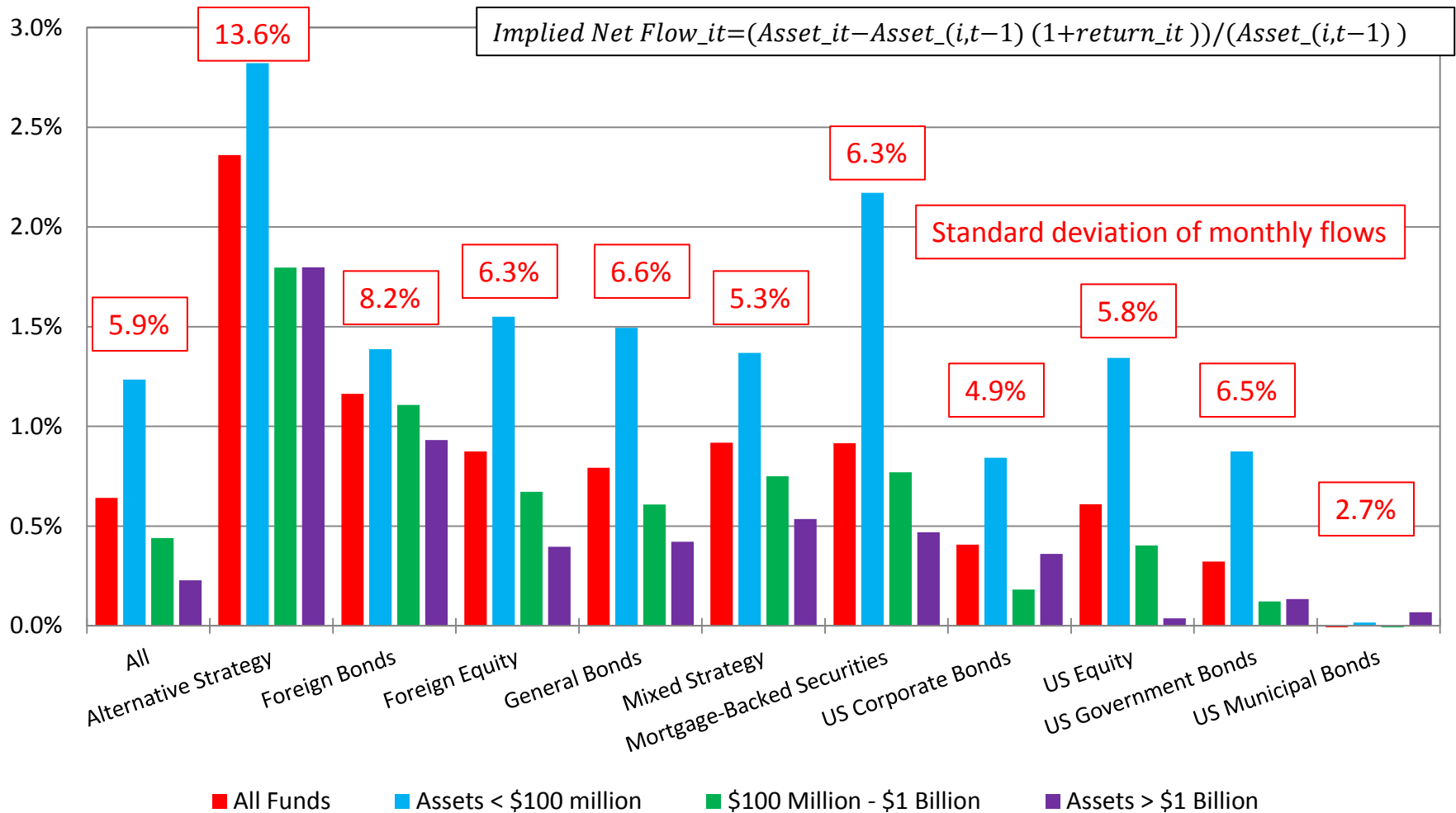
Growth in Assets held in US Mutual Funds

- Assets grew from \$4.4 trillion in 2000 to \$12.7 trillion in 2014
- Proportion invested in equity declined; alternative strategies still small

	2000		2014		Assets Growth Rate	Assets % Growth
	Class Assets	Class Assets (%)	Class Assets	Class Assets (%)		
All	4,409,289		12,678,624		7.80%	
US Equity	2,874,681	65.2%	5,642,977	44.5%	4.9%	-2.7%
Foreign Equity	465,336	10.6%	1,956,005	15.4%	10.8%	2.7%
Mixed Strategy	324,303	7.4%	1,737,201	13.7%	12.7%	4.5%
General Bonds	240,067	5.4%	1,690,291	13.3%	15.0%	6.7%
US Municipal Bonds	277,579	6.3%	565,201	4.5%	5.2%	-2.4%
Alternative Strategy	0	0%	333,920	2.6%	n/a	n/a
Foreign Bonds	19,170	0.4%	259,364	2.0%	20.4%	12.2%
Mortgage-Backed Securities	51,865	1.2%	229,546	1.8%	11.2%	2.9%
US Government Bonds	90,610	2.1%	165,527	1.3%	4.4%	-3.4%
US Corporate Bonds	65,678	1.5%	98,592	0.8%	2.9%	-4.4%



Average monthly net flows by strategy



Fund Liquidity Analysis

- Measure the liquidity of U.S. Equity Mutual Funds by asset weighting the liquidity of each holding
 - Liquidity of fund holding i during month t over d trading days

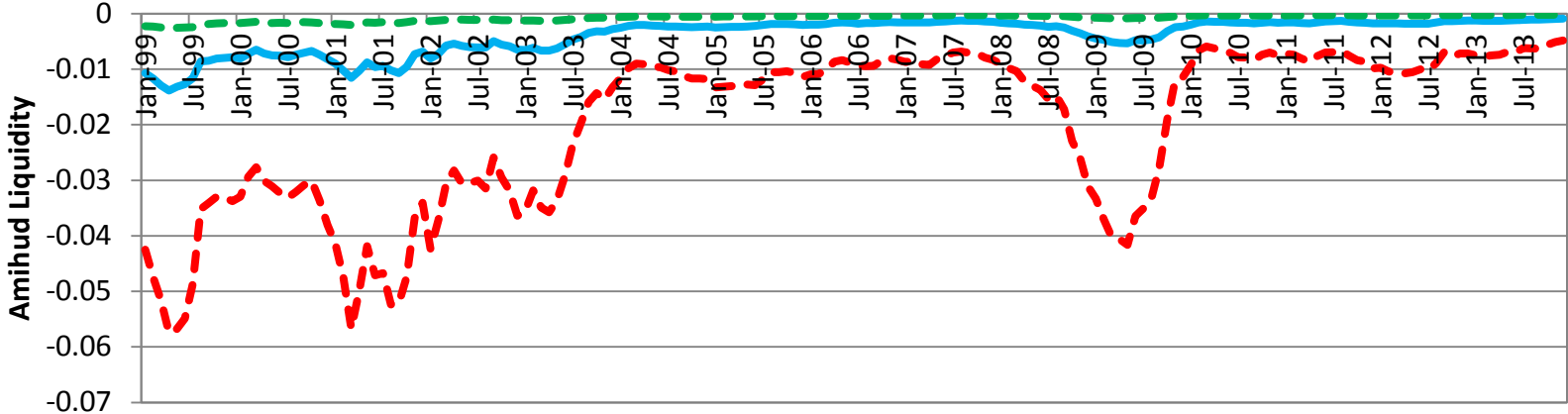
$$\text{Amihud Liquidity}_{i,t} = -1 \cdot \frac{1}{D} \sum_{d=0}^D \frac{|\text{Return}_{i,t-d}|}{\text{Dollar Trading Volume}_{i,t-d}}$$

- Liquidity of fund j by asset weighting the liquidity of i holdings

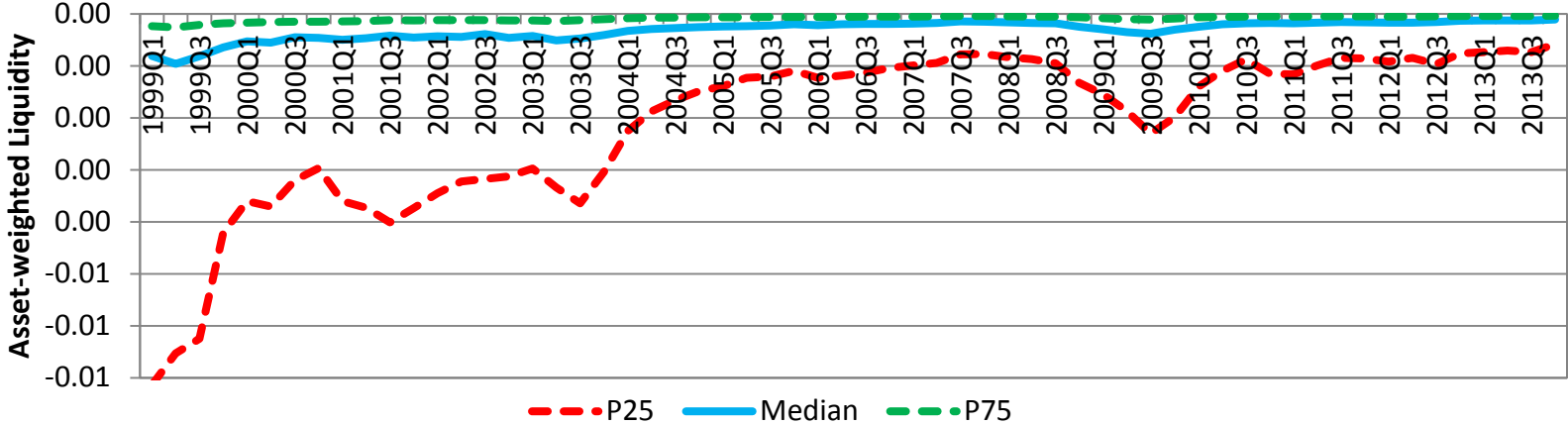
$$\text{Fund Liquidity}_{j,t} = \sum_{i=1}^N \text{Weight}_{i,j,t} \cdot \text{Liquidity}_{i,t}$$



Liquidity of U.S. Equities: 1999 - 2013



Liquidity of U.S. Equity Mutual Funds: 1999 - 2013



Large outflows and fund liquidity

- Do funds sell portfolio strips or their most liquid assets?
- Model Fund liquidity as:

$$\text{Liq}_{i,t} = \alpha + \beta_1 \text{Liq}_{i,t-1} + \beta_2 \text{Inflow}_{i,t} + \beta_3 \text{Outflow}_{i,t} + \sum_{j=1}^N \delta_j C_{i,j,t-1} + \text{FE} + \varepsilon_{i,t}$$

- Where C is a vector of control variables:
 - Fund age
 - Strategy
 - Turnover ratio
 - Expense ratio
 - Assets



How do large outflows affect fund liquidity?

	Equity Mutual Funds Amihud Fund Liquidity			Municipal Bond Funds Relative Amount of Municipal Bonds		
	1	2	3	4	5	6
Outflow	-0.00047 [-2.18]	-0.00037 [-1.70]		0.035 [2.48]	0.046 [3.21]	
Inflow	0.00041 [2.80]	0.00047 [3.25]		-0.047 [-2.64]	-0.037 [-2.06]	
Outflow > Median Outflow			-0.00077 [-2.17]			0.024 [1.33]
Outflow =< Median Outflow			0.00043 [0.78]			0.095 [2.64]
Inflow > Median Inflow			0.00046 [1.75]			-0.037 [-1.40]
Inflow =< Median Inflow			0.00085 [1.48]			-0.012 [-0.34]
Lipper class FE	Yes	Yes	Yes	n/a	n/a	n/a
Year-quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
Control variables	No	Yes	Yes	No	Yes	No
Observations	32,219	32,219	32,219	4,483	4,483	4,483

