Liquidity as an Investment Style

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What is Meant by Liquidity?

Liquidity in the Financial System

- High Savings Rates
- Low Interest Rates
- Easy Access to Capital

Liquidity in Trading

- Low Transactions Costs
- High Trading Volume
- Low price impact for Large orders

Liquidity in Valuation

- Pay extra price for liquid securities
- Extra expected returns for less liquid securities

Liquidity and Valuation

Liquid securities

- Easier to trade with lower market impact costs
- Higher priced for same set of cash flows
- Desired for rapid turnover investors

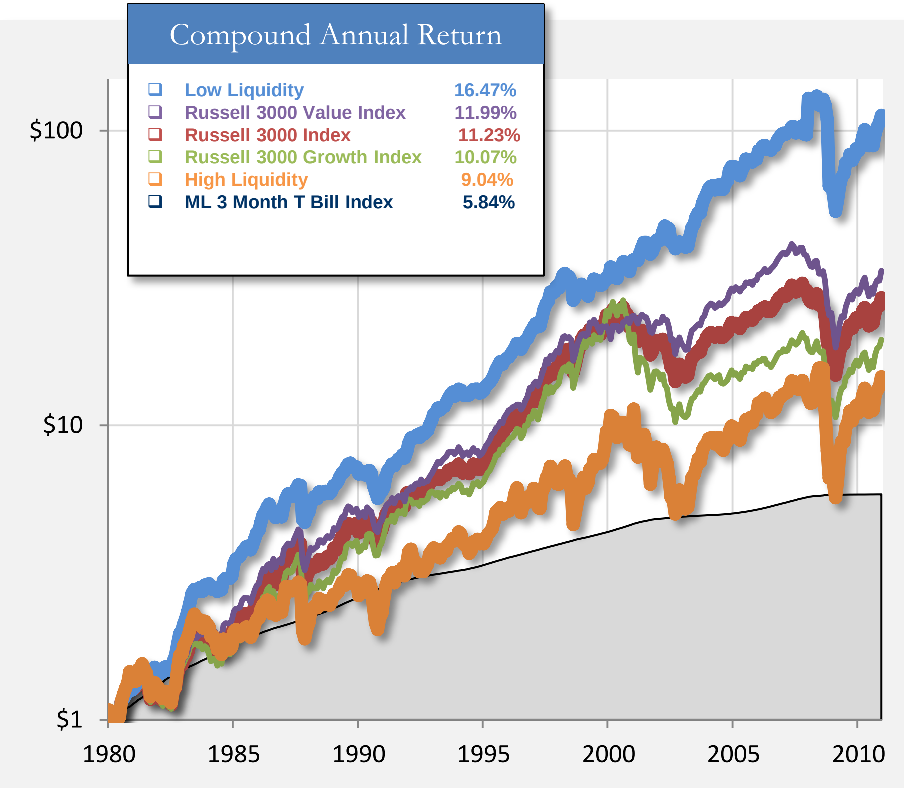
Less Liquid securities

- More difficult to trade
- Lower priced for same set of cash flows
- Higher expected returns, great for longer term investors

"Don't pay for liquidity you do not need"

The Liquidity Premium

Jan 1980 – Dec 2010



Growth of $1

Stocks, Bonds, Bills and Inflation

- First highlighted traditional market premiums
- Equity, value, and liquidity premiums

What is the Liquidity Premium?

- More liquid assets are priced at a premium
- Less liquid assets are priced at a discount, thus having higher expected returns

Foundation in Academic Literature

- Thirty years of literature supporting higher returns
- Applies to fixed income, private equity, real estate, etc.
- Also applies to publicly traded stocks

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What are Criteria for an Investment Style?

- Explains future long-run returns
  in all publicly traded global equity markets

- Differs from other accepted styles
  - Size, Value, and Momentum

- Simple explanation providing relatively
  stable, scalable portfolios over time

An equity style should meet all three criteria

Liquidity[1] vs. Size[2]

U.S. Equity Quartiles
Compound Annual Returns
1972 –2010

Liquidity (Low → High)

Size			Liquidity 1 (Low)	2	3	4 (High)
		All	**16.22%**	**14.48%**	**12.60%**	**8.79%**
Small	**1**	**14.73%**	18.17%	17.46%	13.51%	6.16%
	2	**12.74%**	16.87%	15.15%	11.68%	6.52%
	3	**13.16%**	15.15%	14.36%	12.87%	9.56%
Large	**4**	**11.68%**	12.49%	11.48%	11.55%	9.87%

Liquidity dominates Size

1. Liquidity is ranked by the trailing 12 months trading volume as a percentage of shares outstanding at the end of each year.
2. Size is ranked by the end of year market capitalization for top 3500 market cap stocks.

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Liquidity vs. Value/Growth[3]

U.S. Equity Quartiles
Compound Annual Returns
1972 – 2010

Liquidity

		Low 1	2	3	High 4
	All	**16.22%**	**14.48%**	**12.60%**	**8.79%**
Value **1**	**17.71%**	20.82%	17.98%	17.02%	12.53%
2	**14.45%**	15.74%	14.93%	13.54%	12.45%
3	**11.22%**	13.97%	12.46%	10.69%	8.04%
Growth **4**	**8.37%**	11.93%	11.85%	7.88%	3.88%

Both Liquidity and Value are consistent predictors

3. Value/growth is ranked by the end of year earnings/price ratio.

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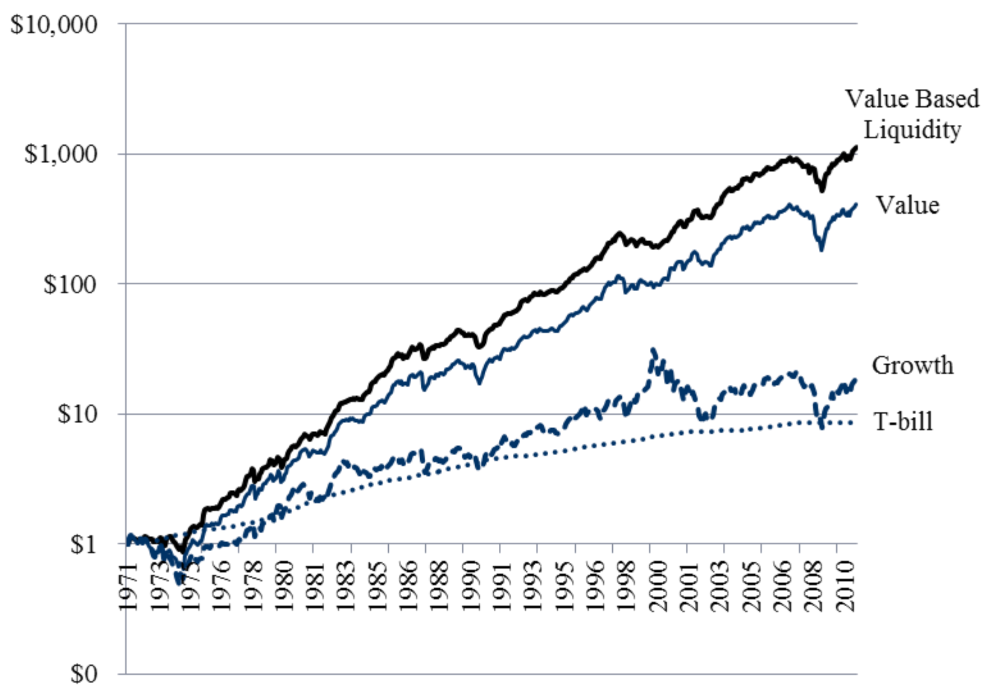
Value-Based Liquidity Portfolio



Annualized Alpha	Market M-RF	Size	Value	Momentum	RSQ
5.91%*	0.76	0.50	0.55	-0.03	85.8%

*Statistically significant at 5% level.

Source: Ibbotson, Roger, Zhiwu Chen, and Wendy Hu, "Liquidity as an Investment Style" , April 2011.

Two Reasons for Investing in Liquidity

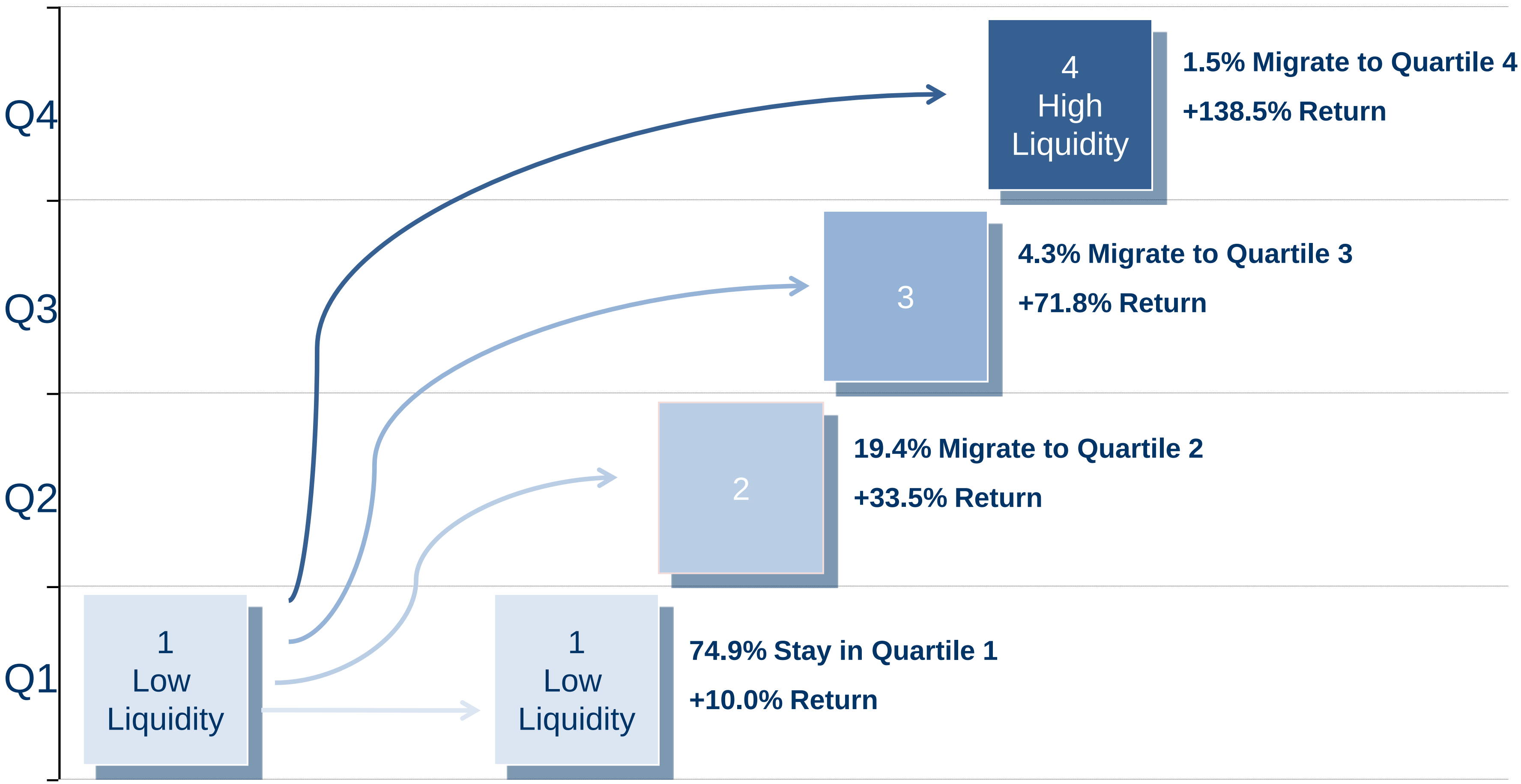
Less Liquid stocks trade at a discount to more liquid stocks

- Buying Less Liquid stocks means that the same cash flows can be bought cheaper

Liquidity is mean reverting

- Stocks move in and out of favor; as liquidity rises (falls), valuations rise (fall)

Liquidity Migration



Source: Ibbotson, Chen, and Hu, "*Liquidity as an Investment Style*" , April 2011.

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Global Liquidity Return Strategy

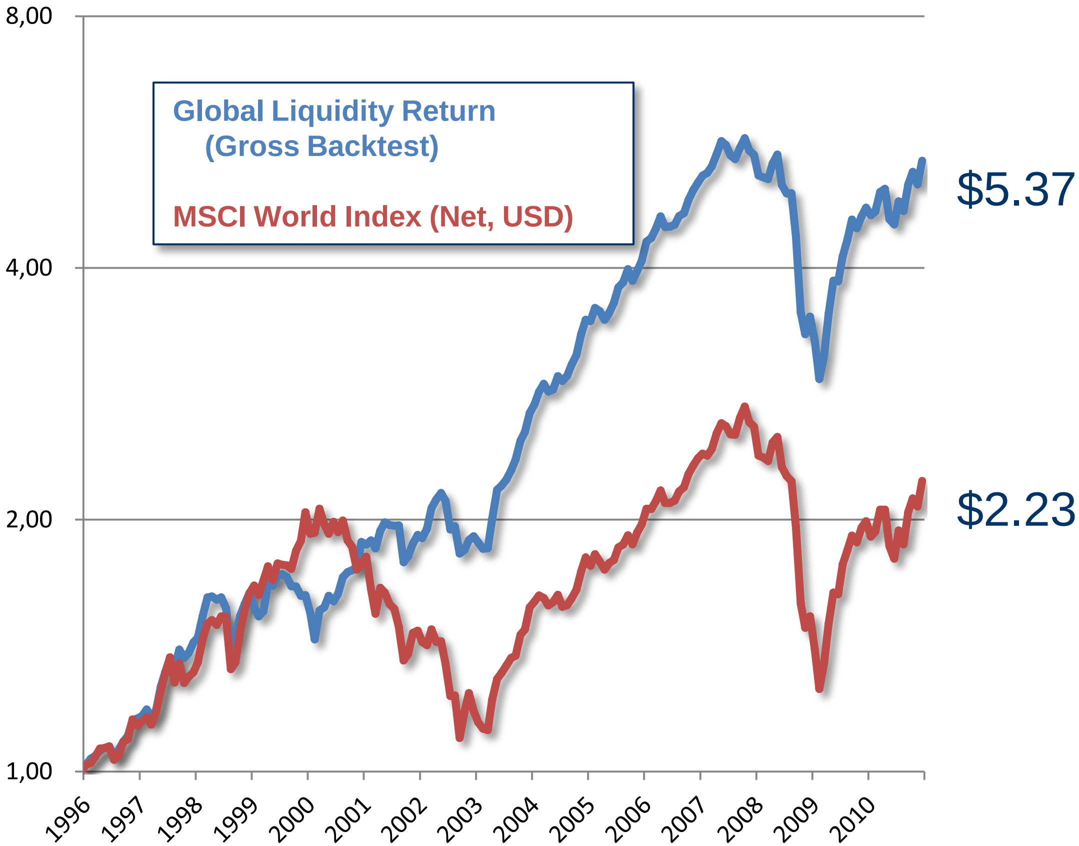
Backtested Gross Performance (Jan 1996 – June 2011)

		Portfolios	Annualized Return	Standard Deviation	Info Ratio	Beta
Global		Global Liquidity Return	12.08%	14.02%	0.78	0.76
		MSCI World Index	5.65%	16.05%		
Sub Portfolios						
US	~60%	US Liquidity Return	11.74%	14.81%	0.47	0.73
		Russell 3000	7.20%	16.42%		
EMU	~20%	EMU Liquidity Return	13.65%	16.50%	0.67	0.73
		MSCI EMU	6.93%	19.55%		
Japan	~15%	Japan Liquidity Return	3.65%	15.11%	0.70	0.73
		MSCI Japan	-2.76%	17.90%		
UK	~5%	UK Liquidity Return	13.94%	16.09%	0.76	0.90
		MSCI UK	6.44%	14.43%		

- All results are reported in local currency, Global Liquidity, MSCI World, and Russell 3000 Index results are reported in USD

Year By Year Performance

1996 – 2010



Growth of $1

	Global Liquidity	MSCI World	Excess Return
2010	13.80%	11.76%	2.04%
2009	35.02%	29.99%	5.03%
2008	-35.98%	-40.71%	4.73%
2007	7.95%	9.04%	-1.09%
2006	24.12%	20.07%	4.05%
2005	17.60%	9.49%	8.11%
2004	29.14%	14.72%	14.42%
2003	40.48%	33.11%	7.37%
2002	-0.35%	-19.89%	19.54%
2001	1.96%	-16.82%	18.78%
2000	15.74%	-13.18%	28.92%
1999	-0.58%	24.93%	-25.51%
1998	14.62%	24.34%	-9.72%
1997	23.23%	15.76%	7.47%
1996	15.66%	13.48%	2.18%

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The Global Portfolio

- Liquidity is Pervasive
  - Works in every region / country
- Regional Portfolios exhibit low correlation to each other providing diversification
- Regional Portfolios are quite different from their respective indices
- Regional liquidity must be treated separately because it is not comparable.

Sub Portfolio Cross Correlations
Feb 99 – Aug 11

	US	EMU	Japan	UK
US	1.00	0.76	0.41	0.80
EMU	0.76	1.00	0.51	0.84
Japan	0.41	0.51	1.00	0.59
UK	0.80	0.84	0.59	1.00

Sub Portfolios vs. Indices
Feb 99 – Aug 11

	R^2	Index
Global LR	0.74	MSCI World
US LR	0.64	MSCI USA
EMU LR	0.81	MSCI EMU
Japan LR	0.76	MSCI Japan
UK LR	0.74	MSCI UK

Portfolio Construction

Rules based portfolio management

- Buy stocks (in all global regions) with strong fundamentals
  that are somewhat less liquid
- Weight the stocks on fundamentals, e.g. earnings,
  so that large companies get larger weights
- Use algorithms (not factors) to select and weight stocks

Hold stocks for relatively long periods

- Fundamentals and Liquidity slowly change (migration)
- Execute trades in passive manner

Portfolio Characteristics

Scalable Investments

- Large companies have larger weight
- Microcaps are eliminated since liquidity is robust across size

Low Trading Costs

- Large number of smaller positions (over 1000 stocks)
- Low turnover with slow signals
- Passive trading techniques

Portfolio Metrics

- Low Betas (typically 0.70-0.90)
- Lower S.D. than indexes
- Low correlations across regions and with indexes

Conclusions

The most liquid assets have the highest valuations,
but lowest returns

Liquidity is an investment style; Less Liquid stocks have

- Higher long-run returns
- Returns differ from size, value, and momentum
- Portfolios are relatively stable over time

Similar to risk, Liquidity should be managed

- Investors should relate portfolio liquidity to time horizons
- Changing stock liquidity creates return opportunities

Portfolios can have

- Rules Based Management
- Large Capacity
- Low Trading Costs