The Bond Coupon's Impact on Liquidity

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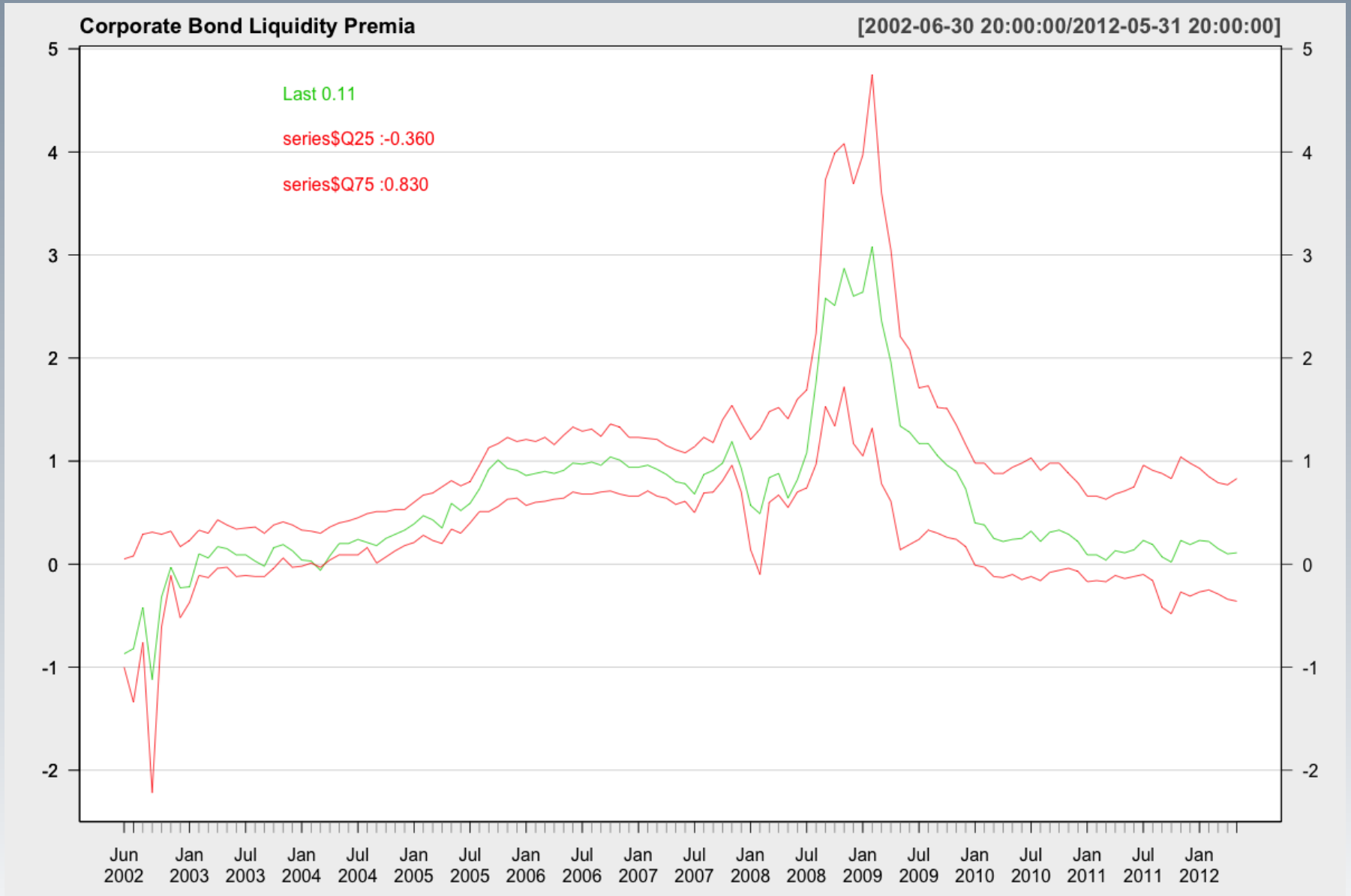
Corporate Bond Liquidity Premia
[2002-06-30 20:00:00/2012-05-31 20:00:00]
Last 0.11
series$Q25 :-0.360
series$Q75 :0.830
5
4
3
2
1
0
-1
-2
Jun 2002
Jan 2003
Jul 2003
Jan 2004
Jul 2004
Jan 2005
Jul 2005
Jan 2006
Jul 2006
Jan 2007
Jul 2007
Jan 2008
Jul 2008
Jan 2009
Jul 2009
Jan 2010
Jul 2010
Jan 2011
Jul 2011
Jan 2012

Liquidity Compensation

Bao, Pan, and Wang (2011)

- Liquidity is less significant as credit risk increases

Hedge interest rate risk and credit risk

Coupon rate is endogenous; increases with credit risk

Method 1

- Buy bond, buy CDS, short t-bill futures (zero coupon)
- $\frac{\text{(Coupon rate}-\text{CDS premium)}}{\text{(Capital Gain}-\text{risk-free rate)}}$

Method 2

- Buy bond, buy CDS, short t-bill (par value with coupon)
- $\frac{\text{(Coupon rate}-\text{CDS premium}-\text{risk-free rate)}}{\text{Capital Gain}}$

Summary Statistics

TRACE data on fixed coupon corporate bonds from June 2002 through May 2012. Yields and risk premia are reported in percentage terms.

	Median	First Quartile	Third Quartile
Years to Maturity	7.92	4.67	13.00
Yield to Maturity	5.57	3.85	6.97
CDS Premium	1.35	0.59	2.74
Liquidity Premium	0.62	0.07	1.23
Liquidity Compensation Ratio 1	-1.19	-1.38	-1.04
Liquidity Compensation Ratio 2	-1.27	-2.18	-0.18

$$LP_{i,t} = \beta_{0,i} + \beta_1 TERM_t + \beta_2 DEF_t + \beta_3 Turnover_{i,t} + \beta_4 Trading_{i,t} + \beta_5 Spread_{i,t} + \beta_6 MAT_{i,t} + \beta_7 LComp_{i,t} + \epsilon_{i,t} \quad (1)$$

Variables:

- LP: liquidity premium
- TERM: the average yield of the 20 year treasury bond and the 1 month T-bill
- DEF: Yield on investment grade corporate bonds minus the average of the 20 year and 1 year treasury bond yields
- Turnover: $\frac{\text{Dollar volume traded per month}}{\text{Issue size}}$
- Trading: $\frac{\text{Number of days traded}}{\text{Number of days available for trading}}$
- Spread: Ask Price - Bid Price
- MAT: Years to maturity
- LComp 1: $\frac{(\text{Coupon rate} - \text{CDS premium})}{(\text{Capital Gain} - \text{risk-free rate})}$
- LComp 2: $\frac{(\text{Coupon rate} - \text{CDS premium} - \text{risk-free rate})}{\text{Capital Gain}}$

	Model 1	Model 2	Model 3	Model 4
TERM	0.0894^{***}	0.0892^{***}	0.0569^{***}	0.0574^{***}
	(6.2508)	(6.2013)	(9.9915)	(10.0504)
DEF	0.3838^{***}	0.3872^{***}	0.4742^{***}	0.4761^{***}
	(22.7277)	(23.3215)	(56.4100)	(57.5934)
Turnover	-0.0028^{***}	-0.0028^{***}	-0.0010^{*}	-0.0010^{*}
	(−4.9068)	(−4.9194)	(−1.9475)	(−1.9604)
Trading	0.0029^{***}	0.0029^{***}	0.0003	0.0003
	(3.6131)	(3.6289)	(0.5990)	(0.6290)
Spread	-0.0036^{**}	-0.0035^{**}		
	(−2.9763)	(−2.9532)		
MAT	0.0013^{***}	0.0013^{***}	0.0011^{***}	0.0011^{***}
	(10.2230)	(10.1210)	(19.6354)	(19.4498)
LComp 1	-0.0004^{**}		-0.0003^{***}	
	(−2.7494)		(−4.4363)	
LComp 2		0.0000^{***}		0.0000^{***}
		(4.7523)		(16.5784)
R^2 (%)	16.15	16.07	19.42	19.47
Adj. R^2 (%)	15.29	15.21	18.85	18.90
Obs	69,206	69,206	258,573	258,573
T	112	112	120	120
N	3,681	3,681	7,565	7,565

Findings

Liquidity compensation is significant across credit quality
Based on the average liquidity premium:
Bid/Ask Spread

- One stdev increase $\rightarrow$ +8 bps or 12.9% of liquidity

Turnover

- One stdev increase $\rightarrow$ -3 bps or 4.8% of liquidity

Liquidity Compensation

- One stdev increase $\rightarrow$ -4 bps or 6.5% of liquidity