

**Online Appendix for
How is Liquidity Priced in Global Markets?**

January 27, 2020

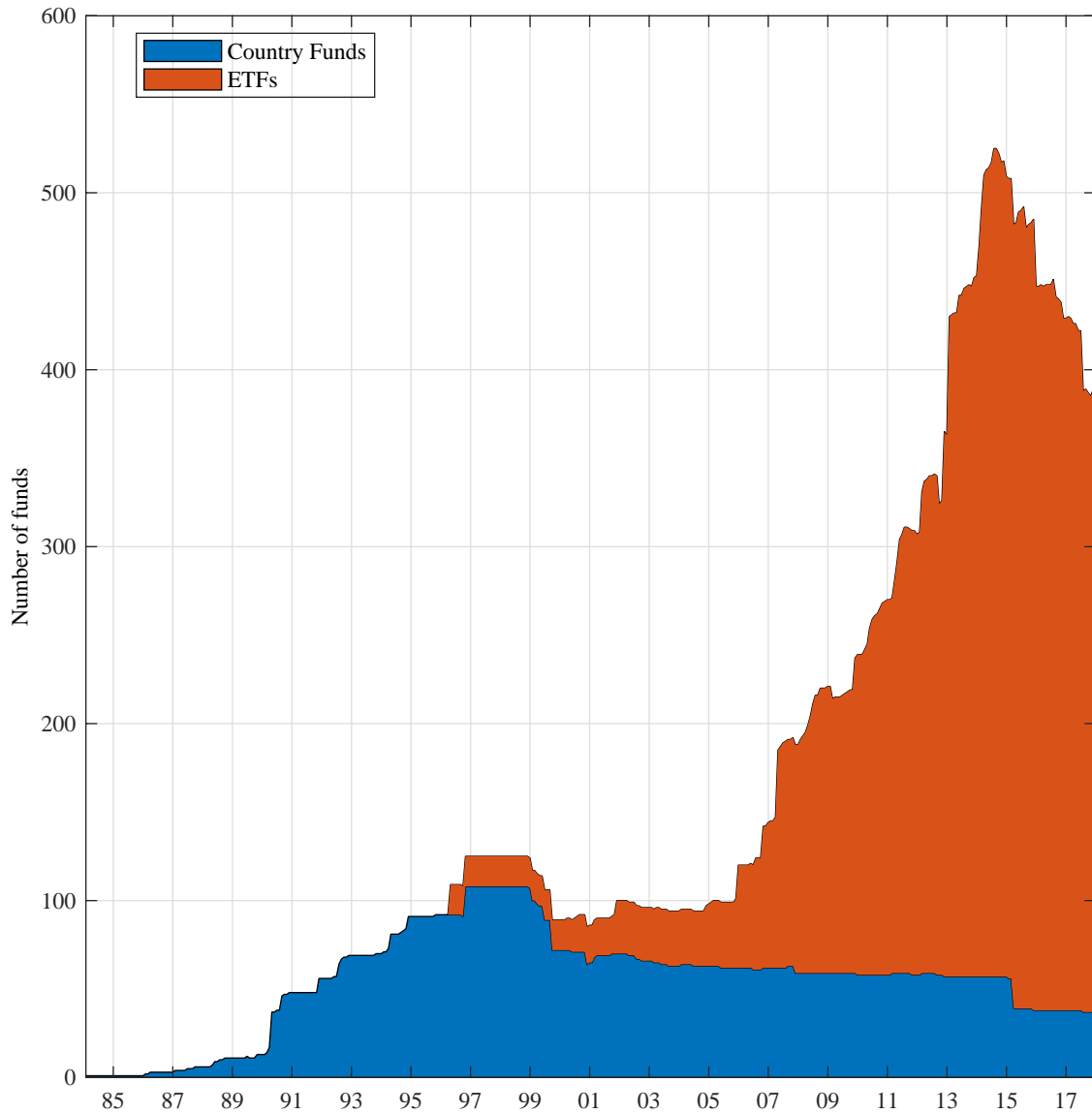


Figure 1 Number of country funds and ETFs - 1984-2018

We report the total number of country funds and exchange traded funds from 1984 to 2018. Country funds are any mutual or investment trust whose long name include either the country name or one of its key region name (Latin America, Asia Pacific, Central European, BRIC, Emerging Asia, Middle East & Africa, and Eastern Europe). ETFs are Exchange Traded Funds whose long name include either the country name or one of its key region name.

Table 1 Model estimates using the volatility-adjusted CS as a bid-ask spread proxy

Panel A: Models for world and open markets

		Liquidity level κ (i)	World price of risk γ (ii)
On gross returns	coefficient	0.00	1.48
	<i>t</i> -ratio	(0.01)	(1.25)
On net returns	coefficient	0.00	1.78
	<i>t</i> -ratio	(0.01)	(1.28)
Model selection	<i>p</i> -value	0.47	

Panel B: Models for partially segmented markets

		Liquidity level κ_{N^k}		Price of unspanned local risk π_{N^k}	
		DM (i)	EM (ii)	DM (iii)	EM (iv)
On gross returns	average coefficient	0.12	0.11	0.19	1.93
	proportion	100.00%	89.47%	18.18%	52.63%
On net returns	average coefficient	0.12	0.11	0.18	1.91
	proportion	100.00%	94.74%	18.18%	52.63%
Model selection	proportion	0%	0%		

We report model estimates using the volatility-adjusted CS as a bid-ask spread proxy. To orthogonalize the bid-ask spread proxy, we (i) estimate a GARCH model on weekly returns, (ii) regress the proxy on a constant and the demeaned conditional return volatilities, and (iii) compute the difference between the FHT measure and the product of demeaned conditional volatility and its regression coefficient. In Panel A, we report model estimates of the system of equations (8) in the main text for the world and open markets. We report coefficients as well as their *t*-ratios below in parentheses. In Panel B, we report average model estimates of the system of equations (11) in the main text. We report the average coefficient across DMs and across EMs as well as the proportion of countries for which each coefficient is significant at the 10% level. In both panels, we estimate the system of equations with returns gross of transaction costs (i.e., no liquidity risk) on the right-hand side of the return equations and with returns net of transaction costs (i.e., with liquidity risk). We use the [Vuong \(1989\)](#) test for non-nested models to see whether the model with liquidity risk has a significantly better fit. We report the test *p*-value in the row *Model selection* in Panel A and the proportion of countries with a *p*-value smaller than 10% in Panel B. Data are weekly from 1997 to 2018.

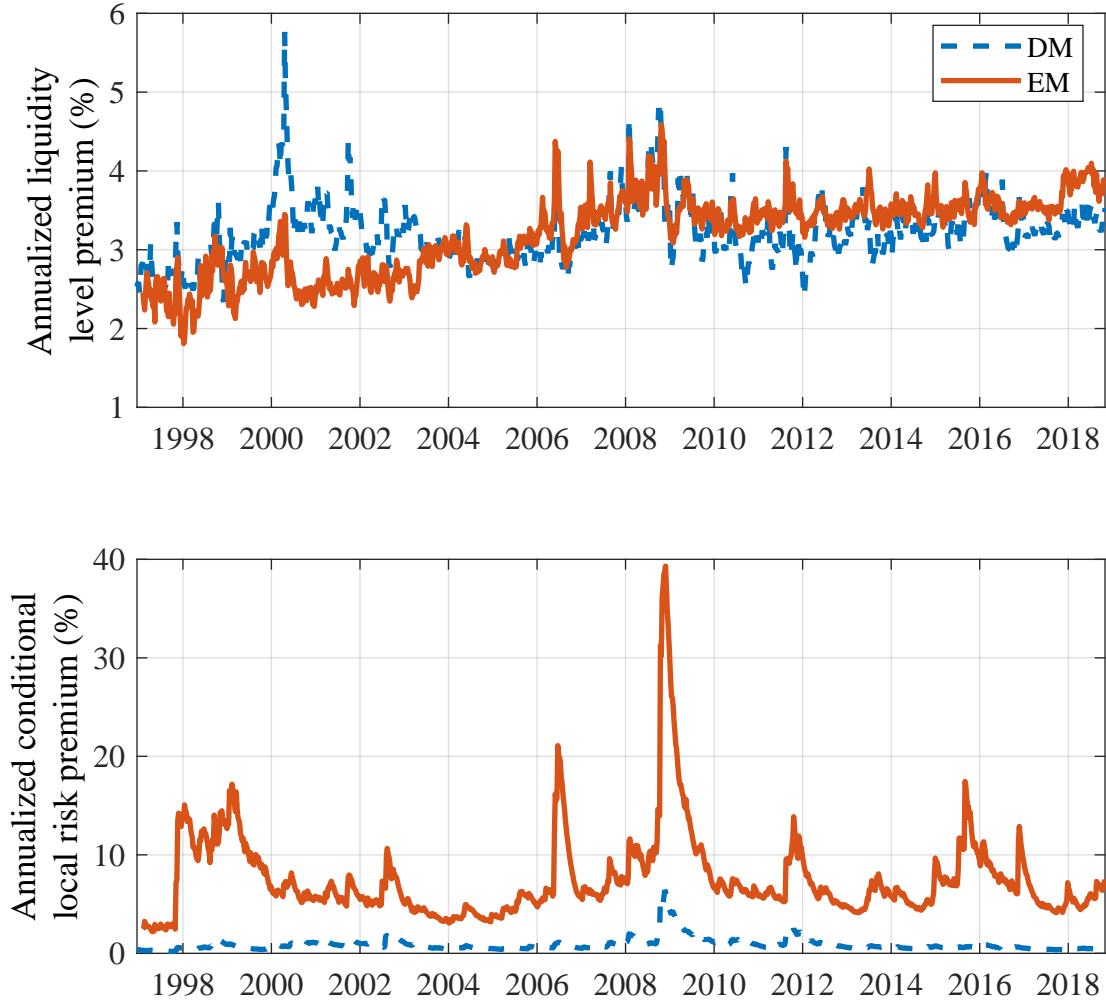


Figure 2 Cross-sectional average risk premia using the volatility-adjusted CS as a bid-ask spread proxy

We report liquidity level and unspanned local risk premia over time. The top graph reports on the annualized liquidity level premium

$$52 \times \kappa_{N^k} E_t [c_{N^k, t+1}],$$

in percent. The bottom graph reports on the annualized unspanned local risk premium

$$52 \times \pi_{N^k} \text{var}_t \left(r_{N^k, t+1}^{\text{net}} \right) \left(1 - II_{N^k} \right)$$

in percent. In each graph, we compute the cross-sectional equal-weighted average each week across DMs (dashed line) and across EMs (continuous line). We report the cross-sectional averages when at least five countries are available. Model estimates are reported in Table 1. The data are weekly from 1997 to 2018.

Table 2 Model estimates using the volatility-adjusted AR as a bid-ask spread proxy

Panel A: Models for world and open markets

		Liquidity level κ (i)	World price of risk γ (ii)
On gross returns	coefficient	0.00	2.31
	<i>t</i> -ratio	(0.00)	(1.79)
On net returns	coefficient	0.00	2.46
	<i>t</i> -ratio	(0.02)	(1.94)
Model selection	<i>p</i> -value	0.56	

Panel B: Models for partially segmented markets

		Liquidity level κ_{N^k}		Price of unspanned local risk π_{N^k}	
		DM (i)	EM (ii)	DM (iii)	EM (iv)
On gross returns	average coefficient	0.04	0.02	0.16	2.41
	proportion	54.55%	36.84%	9.09%	52.63%
On net returns	average coefficient	0.04	0.02	0.16	2.28
	proportion	63.64%	42.11%	9.09%	47.37%
Model selection	proportion	0%	0%		

We report model estimates using the volatility-adjusted AR as a bid-ask spread proxy. To orthogonalize the bid-ask spread proxy, we (i) estimate a GARCH model on weekly returns, (ii) regress the proxy on a constant and the demeaned conditional return volatilities, and (iii) compute the difference between the FHT measure and the product of demeaned conditional volatility and its regression coefficient. In Panel A, we report model estimates of the system of equations (8) in the main text for the world and open markets. We report coefficients as well as their *t*-ratios below in parentheses. In Panel B, we report average model estimates of the system of equations (11) in the main text. We report the average coefficient across DMs and across EMs as well as the proportion of countries for which each coefficient is significant at the 10% level. In both panels, we estimate the system of equations with returns gross of transaction costs (i.e., no liquidity risk) on the right-hand side of the return equations and with returns net of transaction costs (i.e., with liquidity risk). We use the [Vuong \(1989\)](#) test for non-nested models to see whether the model with liquidity risk has a significantly better fit. We report the test *p*-value in the row *Model selection* in Panel A and the proportion of countries with a *p*-value smaller than 10% in Panel B. Data are weekly from 1997 to 2018.

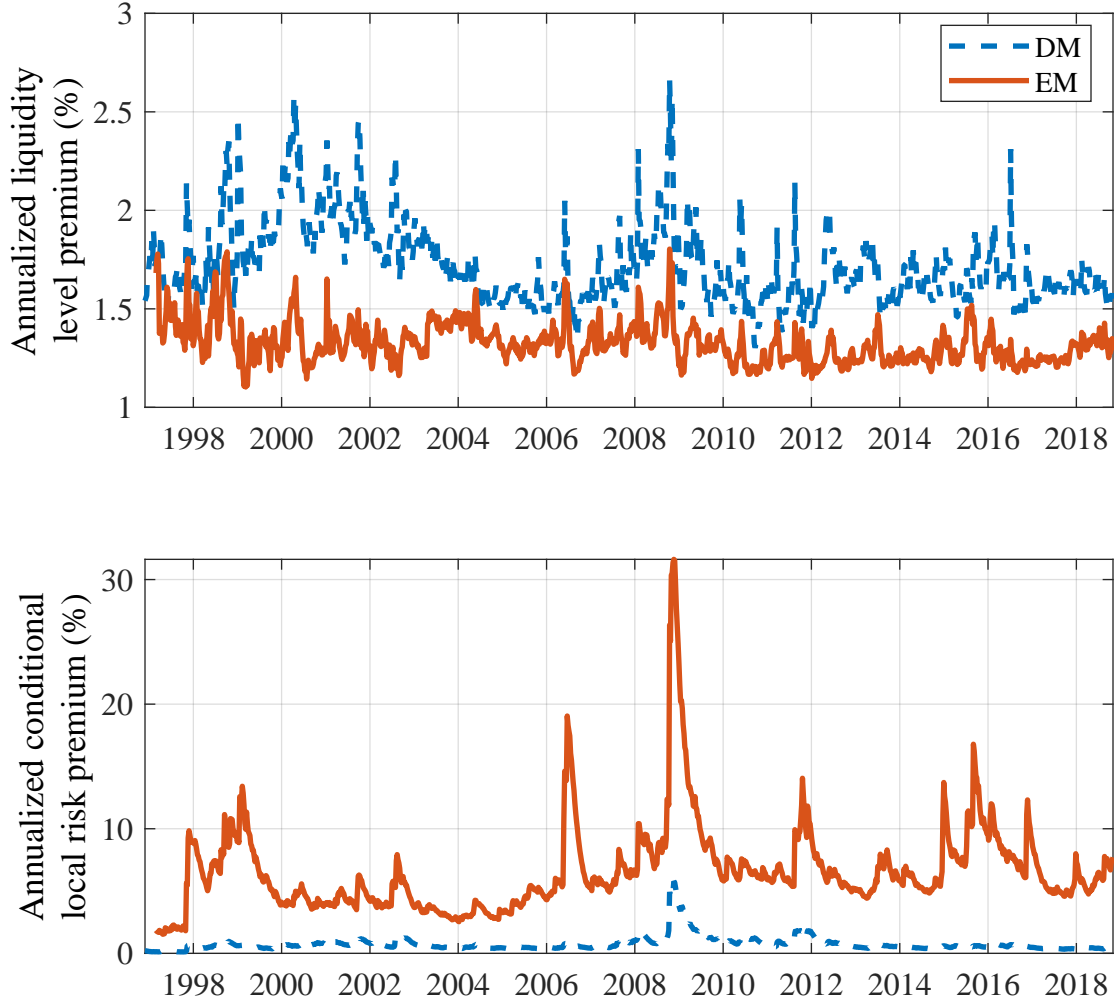


Figure 3 Cross-sectional average risk premia using the volatility-adjusted AR as a bid-ask spread proxy

We report liquidity level and unspanned local risk premia over time. The top graph reports on the annualized liquidity level premium

$$52 \times \kappa_{N^k} E_t [c_{N^k,t+1}],$$

in percent. The bottom graph reports on the annualized unspanned local risk premium

$$52 \times \pi_{N^k} \text{var}_t (r_{N^k,t+1}^{\text{net}}) (1 - II_{N_t^k})$$

in percent. In each graph, we compute the cross-sectional equal-weighted average each week across DMs (dashed line) and across EMs (continuous line). We report the cross-sectional averages when at least five countries are available. Model estimates are reported in Table 2. The data are weekly from 1997 to 2018.

Table 3 Model estimates with all stocks as non-investables using alternative liquidity measures

		Liquidity level κ_{N^k}		Price of unspanned local risk π_{N^k}	
		DM	EM	DM	EM
		(i)	(ii)	(iii)	(iv)
<i>Panel A: Using volatility-adjusted CS</i>					
On net returns	average coefficient proportion	0.11 100.00%	0.11 90.00%	0.34 25.00%	2.10 55.00%
<i>Panel B: Using volatility-adjusted AR</i>					
On net returns	average coefficient proportion	0.04 83.33%	0.02 40.00%	0.32 25.00%	2.47 45.00%

We report average model estimates of the system of equations (11) in the main text. We report the average coefficient across DMs and across EMs as well as the proportion of countries for which each coefficient is significant at the 10% level. Panels A-B report these results with the different alternative bid-ask spread proxies, respectively, volatility-adjusted CS, and volatility-adjusted AR. Data are weekly from 1997 to 2018.

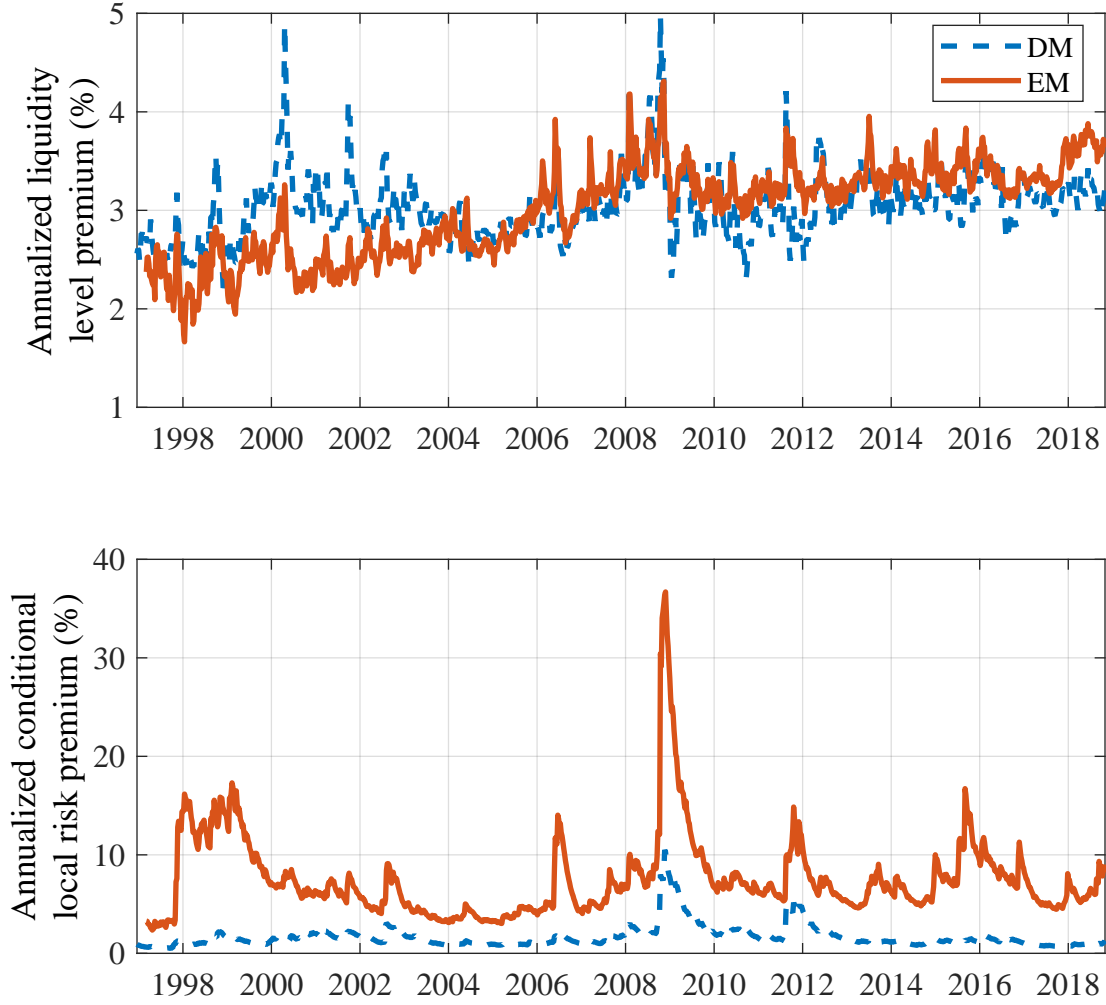


Figure 4 Cross-sectional average risk premia using the volatility-adjusted CS as a bid-ask spread proxy and all stocks

We report liquidity level and unspanned local risk premia over time. The top graph reports on the annualized liquidity level premium

$$52 \times \kappa_{N^k} E_t [c_{N^k, t+1}],$$

in percent. The bottom graph reports on the annualized unspanned local risk premium

$$52 \times \pi_{N^k} \text{var}_t (r_{N^k, t+1}^{\text{net}}) (1 - II_{N^k})$$

in percent. In each graph, we compute the cross-sectional equal-weighted average each week across DMs (dashed line) and across EMs (continuous line). We report the cross-sectional averages when at least five countries are available. Model estimates are reported in Table 3. The data are weekly from 1997 to 2018.

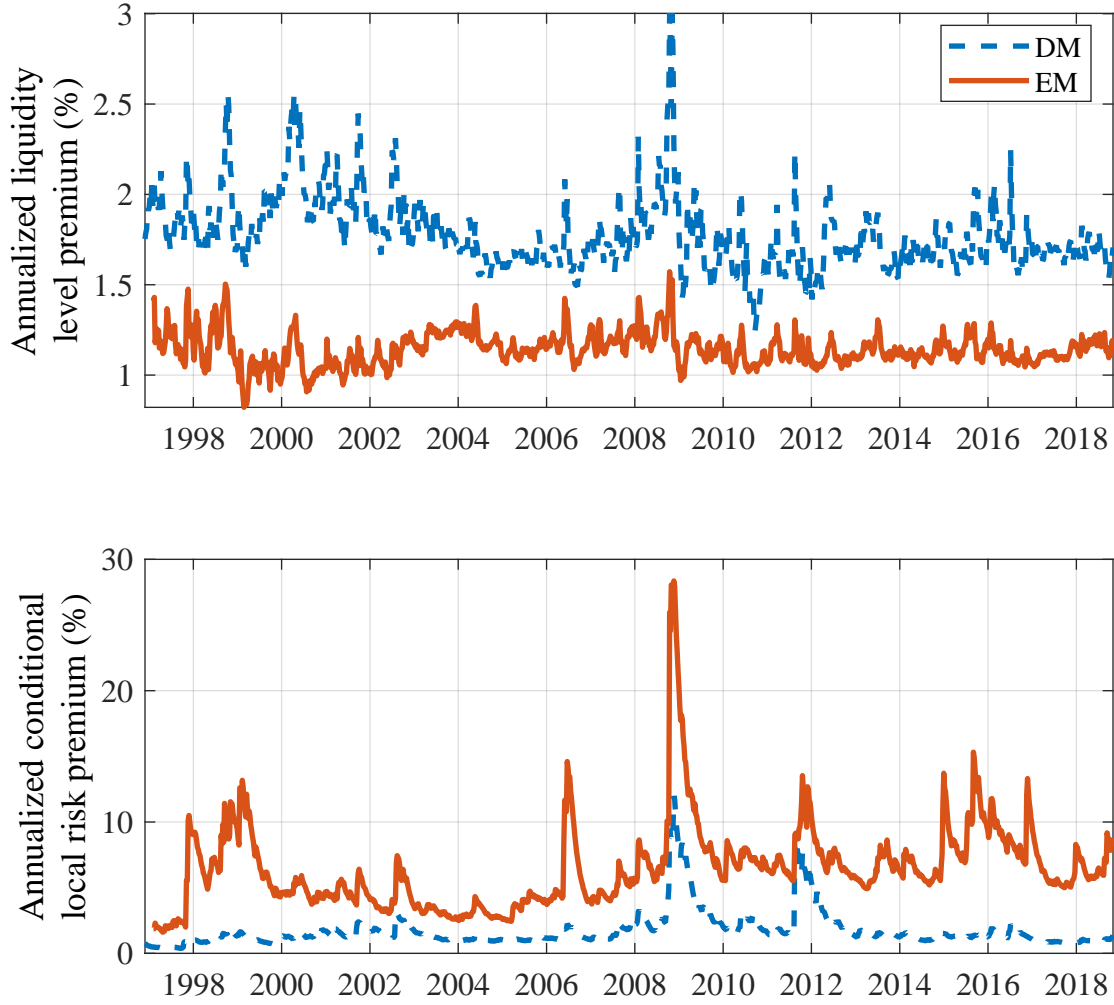


Figure 5 Cross-sectional average risk premia using the volatility-adjusted AR as a bid-ask spread proxy and all stocks

We report liquidity level and unspanned local risk premia over time. The top graph reports on the annualized liquidity level premium

$$52 \times \kappa_{N^k} E_t [c_{N^k,t+1}],$$

in percent. The bottom graph reports on the annualized unspanned local risk premium

$$52 \times \pi_{N^k} \text{var}_t \left(r_{N^k,t+1}^{\text{net}} \right) \left(1 - II_{N^k} \right)$$

in percent. In each graph, we compute the cross-sectional equal-weighted average each week across DMs (dashed line) and across EMs (continuous line). We report the cross-sectional averages when at least five countries are available. Model estimates are reported in Table 3. The data are weekly from 1997 to 2018.

Table 4 Short selling rules

Country	When was short selling allowed	When was short selling banned on all stocks	When was short selling practiced	Comments
Developed markets				
Australia	before 1990	9/22/2008-11/20/2008	before 1990	Date of short selling legality and practice from Bris, Goetzmann, and Zhu (2007) and Charoenrook and Daouk (2005). Date of short selling ban from Beber and Pagano (2013) and Jain, Jain, McInish, and McKenzie (2013).
Austria	before 1990	No	before 1990	Date of short selling legality and practice from Bris et al. (2007) and Charoenrook and Daouk (2005). Updated with Beber and Pagano (2013) and Jain et al. (2013) that confirms short selling was legal and practiced and the bans were only on financials. Adoption of EU Short Selling regulation since 11/2012.
Belgium	before 1990	No	before 1990	Date of short selling legality and practice from Bris et al. (2007) and Charoenrook and Daouk (2005). Updated with Beber and Pagano (2013) and Jain et al. (2013) that confirms short selling was legal and practiced and the bans were only on financials. Adoption of EU Short Selling regulation since 11/2012.
Canada	before 1990	No	before 1990	Date of short selling legality and practice from Bris et al. (2007) and Charoenrook and Daouk (2005). Updated with Beber and Pagano (2013) and Jain et al. (2013) that confirms short selling was legal and practiced and the bans were only on financials.
Denmark	before 1990	No	before 1990	Date of short selling legality and practice from Bris et al. (2007) and Charoenrook and Daouk (2005). Updated with Beber and Pagano (2013) and Jain et al. (2013) that confirms short selling was legal and practiced and the bans were only on financials. Adoption of EU Short Selling regulation since 11/2012.
Finland	1998	No	07/2006	Date of short selling legality from Bris et al. (2007) and Charoenrook and Daouk (2005). According to Bris et al. (2007) and Charoenrook and Daouk (2005), up to 2002, short selling was not practiced. From Jain et al. (2013), the total borrowing data indicates short selling was practiced at least since July 2006 (start date of Jain et al. (2013) sample). We consider 07/01/2006 as the start date for short selling practice. Adoption of EU Short Selling regulation since 11/2012.
France	before 1990	No	before 1990	Date of short selling legality and practice from Bris et al. (2007) and Charoenrook and Daouk (2005). Updated with Beber and Pagano (2013) and Jain et al. (2013) that confirms short selling was legal and practiced and the bans were only on financials. Adoption of EU Short Selling regulation since 11/2012.
Germany	before 1990	No	before 1990	Date of short selling legality and practice from Bris et al. (2007) and Charoenrook and Daouk (2005). Updated with Beber and Pagano (2013) and Jain et al. (2013) that confirms short selling was legal and practiced and the bans were only on financials. Adoption of EU Short Selling regulation since 11/2012.
Hong Kong	05/01/1997	No	05/01/1997	Date of short selling legality from Deng and Mortala (2016). Date of short selling practice from Bris et al. (2007), Charoenrook and Daouk (2005), Deng and Mortala (2016), and Jain et al. (2013). Naked short selling is prohibited.
Ireland	before 1990	No	before 1990	Date of short selling legality and practice from Bris et al. (2007) and Charoenrook and Daouk (2005). Updated with Beber and Pagano (2013) that confirms short selling was legal and practiced and the bans were only on financials. Adoption of EU Short Selling regulation since 11/2012.
Italy	before 1990	No	before 1990	Date of short selling legality and practice from Bris et al. (2007) and Charoenrook and Daouk (2005). Updated with Jain et al. (2013) that confirms short selling was legal and practiced and the bans were only on financials. Naked short selling was not allowed during 2008-2009. Adoption of EU Short Selling regulation since 11/2012.
Japan	before 1990	No	before 1990	Date of short selling legality and practice from Bris et al. (2007) and Charoenrook and Daouk (2005). Updated with Jain et al. (2013) that confirms short selling was legal and practiced and the bans were only on financials. Naked short selling is not allowed.

Country	When was short selling allowed	When was short selling banned on all stocks	When was short selling practiced	Comments
<i>... Continued</i>				
Netherlands	before 1990	No	before 1990	Date of short selling legality and practice from Bris et al. (2007) and Charoenrook and Daouk (2005). Updated with Jain et al. (2013) that confirms short selling was legal and practiced and the bans were only on financials. Naked short selling is not allowed over 2008-2009. Adoption of EU Short Selling regulation since 11/2012.
New Zealand	04/1992	No	No	Date of short selling legality and practice from Bris et al. (2007), Charoenrook and Daouk (2005), and Jain et al. (2013). Updated with Jain et al. (2013) that confirms short selling was not much practiced. Beber and Pagano (2013) states no ban during crisis.
Norway	1992	No	1999	Date of short selling legality from Charoenrook and Daouk (2005) and Deng and Mortala (2016). Date of short selling practice from Bris et al. (2007), Charoenrook and Daouk (2005), Deng and Mortala (2016), and Jain et al. (2013). Ban on naked short selling of financials during 2008-2009. Norway implemented EU Short Selling regulation in 2017.
Portugal	Before 1990	No	Before 1990	Date of short selling legality from Bris et al. (2007) and Charoenrook and Daouk (2005). Date of short selling practice from Bris et al. (2007), Charoenrook and Daouk (2005), and Jain et al. (2013). Ban on naked short selling of financials during 2008-2009. Adoption of EU Short Selling regulation in 11/2012.
Singapore	07/2006	No	01/2000	Date of short selling legality from Bris et al. (2007), Charoenrook and Daouk (2005) and Jain et al. (2013). In view of the contradiction between different sources, we assume short selling is permissible since 2006 as per Jain et al. (2013). Date of short selling practice from Charoenrook and Daouk (2005).
Spain	01/1992	No	07/2006	Date of short selling legality from Bris et al. (2007) and Charoenrook and Daouk (2005). No short selling practice till 2005 according to Bris et al. (2007) and Charoenrook and Daouk (2005). Evidence of short selling practice from securities lending since 07/2006, i.e., the start date of Jain et al. (2013) sample. Ban on naked short selling. Adoption of EU Short-Selling regulations since 11/2012.
Sweden	08/01/1991	No	08/01/1991	Date of short selling legality from Deng and Mortala (2016). Date of short selling practice from Bris et al. (2007), Deng and Mortala (2016), and Jain et al. (2013). Adoption of EU Short-Selling regulations since 11/2012.
Switzerland	Before 1990	No	Before 1990	Date of short selling legality and practice from Bris et al. (2007) and Charoenrook and Daouk (2005). Ban on naked short selling during 2008-2009.
United Kingdom	Before 1990	No	Before 1990	Date of short selling legality and practice from Bris et al. (2007) and Charoenrook and Daouk (2005). Ban on financials during 2008-2009.
United States	Before 1990	No	Before 1990	Date of short selling legality and practice from Bris et al. (2007) and Charoenrook and Daouk (2005). Ban on financials during 2008-2009.
Emerging markets				
Argentina	09/06/1999	No	No	Date of short selling legality from Deng and Mortala (2016) and Gregoriou (2012). Equity lending is rare and no practice of short selling according to Charoenrook and Daouk (2005), Deng and Mortala (2016), and Gregoriou (2012). Naked short selling is prohibited. No policy change during crisis.
Brazil	Before 1990	No	No	Date of short selling legality from Bris et al. (2007) and Charoenrook and Daouk (2005). No practice of short selling according to Bris et al. (2007), Charoenrook and Daouk (2005), Gregoriou (2012), and Jain et al. (2013). Naked short selling is prohibited. No policy change during crisis.

Country	When was short selling allowed	When was short selling banned on all stocks	When was short selling practiced	Comments
<i>... Continued</i>				
Chile	10/1999	No	No	Date of short selling legality from Deng and Mortala (2016). No practice of short selling according to Bris et al. (2007), Deng and Mortala (2016), and Jain et al. (2013). Naked short selling is prohibited. No policy change during crisis.
China	03/31/2010	No	No	Date of short selling legality from Deng and Mortala (2016). No practice of short selling according to Bris et al. (2007), Charoenrook and Daouk (2005), Deng and Mortala (2016), and Jain et al. (2013). Since its first announcement, five major revisions have been made on the designated list by March 2017, expanding eligible stocks from the original 90 blue-chips to 950 constituent stocks. Nevertheless, we classify short selling as not practiced over the whole sample period.
Colombia	No	No	No	Securities lending is not allowed according to Bris et al. (2007), Charoenrook and Daouk (2005), and Jain et al. (2013).
Egypt	No	No	No	Short selling is not allowed and not practiced according to Bris et al. (2007), Charoenrook and Daouk (2005), and Jain et al. (2013).
Greece	05/31/2001	10/10/2008-06/01/2009, 04/28/2010-08/31/2010, 08/09/2011-07/15/2013, 06/29/2015-08/31/2015	07/2006	Date of short selling legality from Charoenrook and Daouk (2005). Date of short selling practice from Charoenrook and Daouk (2005) and Jain et al. (2013). We assume short selling was practiced since start of the sample covered in Jain et al. (2013), i.e. 07/2006. A total ban was imposed during crises periods. Dates are provided from Gregoriou (2012) and Huhtilainen (2017). Adoption of EU short selling regulation as of 11/2012.
Hungary	1996	No	07/2006	Date of short selling legality from Bris et al. (2007) and Charoenrook and Daouk (2005). Date of short selling practice from Jain et al. (2013). We assume short selling was practiced since start of the sample covered in Jain et al. (2013), i.e. 07/2006. No ban during crises periods according to Beber and Pagano (2013) and Jain et al. (2013). Adoption of EU short selling regulation as of 11/2012.
India	04/21/2008	No	No	Date of short selling legality from Deng and Mortala (2016) and Jain et al. (2013). No practice according to Deng and Mortala (2016) and Jain et al. (2013). Naked short selling is not allowed.
Indonesia	06/30/2008	10/01/2008-04/30/2009	No	Date of short selling legality from Bohl, Essid, and Siklos (2018), Deng and Mortala (2016) and Jain et al. (2013). No practice according to Deng and Mortala (2016) and Jain et al. (2013). Ban on all stocks during 2008-2009.
Malaysia	30/09/1996	08/28/1997-03/24/2006	No	Date of short selling legality from Charoenrook and Daouk (2005) and Jain et al. (2013). We follow Deng and Mortala (2016) and Jain et al. (2013) and assume no practice. Naked short selling is banned.
Mexico	Before 1990	No	Before 1990	Date of short selling legality and practice from Bris et al. (2007), Charoenrook and Daouk (2005) and Jain et al. (2013). Naked short selling is banned.
Philippines	1998	No	No	Date of short selling legality from Bris et al. (2007), Deng and Mortala (2016) and Jain et al. (2013). We follow them and assume no practice. Naked short selling is banned.
Poland	01/01/2000	No	No	Date of short selling legality from Bris et al. (2007), Charoenrook and Daouk (2005), Deng and Mortala (2016) and Jain et al. (2013). We follow them and assume no practice. Adoption of EU short selling regulation on 11/2012.
South Africa	Before 1990	No	Before 1990	Date of short selling legality and practice from Bris et al. (2007), Charoenrook and Daouk (2005), Gregoriou (2012) and Jain et al. (2013). Naked short selling prohibited.

Country	When was short selling allowed	When was short selling banned on all stocks	When was short selling practiced	Comments
<i>... Continued</i>				
South Korea	09/01/1996	10/01/2008-06/01/2009; 08/10/2011-11/09/2011	No	Date of short selling legality from Jain et al. (2013). We follow Bris et al. (2007), Charoenrook and Daouk (2005) and Deng and Mortala (2016) and assume no practice. Ban on all stocks during crises periods from Beber, Fabbri, Pagano, and Simonelli (2017), Jain et al. (2013).
Taiwan	Before 1990	12/1998-07/2005, 10/01/2008-11/28/2008, 08/24/2015-09/18/2015	No	Date of short selling legality from Bris et al. (2007). We follow Jain et al. (2013) and assume no practice. Ban on all stocks during crises periods from Bohl, Essid, and Siklos (2010).
Thailand	01/01/2001	No	01/01/2001	Date of short selling legality and practice from Charoenrook and Daouk (2005), Deng and Mortala (2016), and Jain et al. (2013). Naked short selling prohibited.
Turkey	04/03/1995	No	07/2006	Date of short selling legality from Deng and Mortala (2016). We follow Deng and Mortala (2016) and Jain et al. (2013) and assume short selling is practiced since the start of the sample period of Jain et al. (2013), i.e., 07/2006. Naked short selling prohibited.
United Arab Emirates	No	No	No	We follow Jain et al. (2013) and assume short selling is still not allowed and not practiced.

For each country in the sample, the table describes the date when short selling was allowed if this happened on or after 1990. Short selling refers to the ability of an investor to sell a borrowed security to a third party. Short selling is practiced when there are indications from market participants, market regulators, or institutions within a country, that short selling is a common practice. Data are collected from different sources listed the last column.

Table 5 Economic sources of the liquidity level premium and unspanned local market risk premium estimated from alternative liquidity measures

Dependent variable	Vol-adjusted FHT			Vol-adjusted CS			Vol-adjusted AR		
	LLP	LMRP	LLP	LMRP	LLP	LMRP	LLP	LMRP	LLP
POL	11.34*** (9.05)	-10.73* (-1.72)	7.00*** (4.11)	-7.67 (-1.04)	2.20** (2.35)	-4.56 (-0.66)			
DISC	-0.04*** (-2.82)	-0.09* (-1.77)	-0.03** (-2.51)	-0.07 (-1.17)	-0.01 (-1.27)	-0.03 (-0.47)			
A-DIR	-0.11 (-0.48)	1.27 (1.34)	0.35 (1.55)	0.57 (0.51)	0.37* (1.79)	0.08 (0.08)			
FIO	-8.89* (-1.75)	-24.34 (-1.38)	4.83 (1.28)	-27.83* (-1.77)	3.68 (1.17)	-31.95* (-1.89)			
IIO	0.49 (0.19)	13.60 (1.18)	-3.71 (-1.39)	8.41 (0.98)	-3.88 (-1.37)	5.15 (0.66)			
D_{SSL}	-1.56*** (-2.27)	-2.94* (-1.77)	-1.43*** (-2.66)	-3.36* (-1.84)	-0.42 (-1.64)	-3.00 (-1.47)			
D_{SSP}	0.57 (1.01)	0.55 (0.31)	0.72** (2.31)	0.65 (0.33)	0.73** (2.41)	0.62 (0.30)			
ITR	-0.42** (-2.55)	-0.71 (-1.30)	-0.29*** (-3.04)	-0.58 (-1.06)	-0.14 (-1.86)	-0.85 (-1.47)			
SENT	-0.39* (-1.92)	-1.07* (-1.68)	-0.09 (-1.12)	-1.82** (-2.41)	0.17** (1.99)	-2.00*** (-2.71)			
<i>Control variables</i>									
MC/GDP	1.15*** (2.78)	2.05 (1.23)	0.92*** (3.09)	3.82** (2.32)	0.04 (0.15)	4.10** (2.58)			
TRADE/GDP	0.76 (1.43)	5.00* (1.78)	-0.52 (-1.00)	3.95 (1.15)	-0.30 (-0.63)	3.22 (1.05)			
Δ_{FX}	0.90 (0.70)	-33.89*** (-3.01)	-1.84*** (-2.80)	-34.36*** (-3.30)	0.47 (0.96)	-29.89*** (-3.30)			
σ_{FX}	-0.34 (-0.02)	297.59*** (4.90)	5.00 (0.84)	254.68*** (4.15)	1.35 (0.31)	199.32*** (3.74)			
LVOL	11.29 (1.10)	196.13* (1.67)	-5.33 (-0.95)	190.98* (1.77)	-3.44 (-0.83)	151.22* (1.76)			
INT	0.15** (2.33)	0.66*** (2.92)	0.00 (-0.02)	0.92*** (3.42)	-0.09** (-2.22)	0.90*** (3.46)			
VIX	0.00 (0.10)	-0.03 (-0.54)	0.02*** (3.27)	-0.05 (-0.77)	0.01** (2.46)	-0.05 (-0.93)			
Nb. obs.	15, 848	15, 848	15, 843	15, 843	15, 854	15, 854			
Adj. R^2	0.36	0.46	0.45	0.47	0.35	0.43			

The table reports the estimated coefficients from panel regressions of LLP and LMRP on proxies for institutional environment and institutional ownership type, market quality, investor sentiment, and other controls. LLP and LMRP are estimated from the system of equations (11) in the main text using alternative liquidity proxies. The panel regressions are based on the general equation below,

$$Y_{k,t} = \beta_0 + \beta_1 IE_{k,t-1} + \beta_2 IO_{k,t-1} + \beta_3 MQ_{k,t-1} + \beta_4 SENT_{t-1} + \beta_5 X_{k,t-1} + v_{k,t},$$

where Y is either LLP or LMRP, β_0 is a constant, IE is the vector of variables proxying the institutional environment (POL, DISC, A-DIR), IO is the vector of variables proxying the institutional ownership type (FIO, IIO), MQ is the vector of variables proxying market quality (D_{SSL}, D_{SSP}, ITR), $SENT$ is the variable proxying investor sentiment, X is the vector of control variables ($MC/GDP, TRADE/GDP, \Delta_{FX}, \sigma_{FX}, LVOL, INT, VIX, DEM$). We run unbalanced regressions as not all the explanatory variables are available for all countries. All explanatory variables are lagged. t -ratios appear below their corresponding coefficients and are obtained from standard errors that are clustered by country and time. The sample period is weekly from 1997 to 2018. Definition of variables and data source are in Section 6.1 in the main text.

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