

Step by step instruction on how to construct monthly FX illiquidity measures as in "Understanding FX liquidity" by Nina Karnaukh, Angelo Ranaldo, Paul Söderlind (The Review of Financial Studies, forthcoming)

1 step. Download the daily prices data, using Bloomberg (Bid and Ask quotes) and Datastream (Mid, Low, High quotes):

		Relative Bid-Ask (BA) Spread			Corwin-Schultz (CS) measure	
		Data provider: Bloomberg --> Run XDF to set BGN as the main contributor and snap time at 5 p.m. EST time			Data provider: Thomson Reuters (accessed via Datastream)	
		Field names: PX_BID, PX_ASK (Bid, Ask)			Field names: EB, EL, EH (Bid, Low, High)	
N Country	FX pair	Code	Code to use till 31.12.1999	Start of availability	Code	Start of availability
1 Australia	AUD/USD	AUDUSD Curncy	-	Jan-96	TDAUDSP	Jan-91
2 Canada	CAD/USD	USDCAD Curncy	-	Jan-96	TDCADSP	Jan-91
3 India	INR/USD	USDINR Curncy	-	Jan-96	TDINRSP	Jan-91
4 Japan	JPY/USD	USDJPY Curncy	-	Jan-96	TDJPYSP	Jan-91
5 Mexico	MXN/USD	USDMXN Curncy	-	Jan-96	TDMXNSP	Jan-91
6 New Zealand	NZD/USD	NZDUSD Curncy	-	Jan-96	TDNZDSP	Jan-91
7 Norway	NOK/USD	USDNOK Curncy	-	Jan-96	TDNOKSP	Jan-91
8 Singapore	SGD/USD	USDSGD Curncy	-	Jan-96	TDSGDSP	Jan-91
9 South Africa	ZAR/USD	USDZAR Curncy	-	Jan-96	TDZARSP	Jan-91
10 Sweden	SEK/USD	USDSEK Curncy	-	Jan-96	TDSEKSP	Jan-91
11 Switzerland	CHF/USD	USDCHF Curncy	-	Jan-96	TDCHFSP	Jan-91
12 UK	GBP/USD	GBPUSD Curncy	-	Jan-96	TDGBPSP	Jan-91
13 Australia	AUD/EUR	EURAUD Curncy	-	Jan-99	TEAUDSP	Jan-91
14 Canada	CAD/EUR	EURCAD Curncy	-	Jan-99	TECADSP	Jan-91
15 Japan	JPY/EUR	EURJPY Curncy	XEJPY Curncy	Nov-96	TEJPYSP	Jan-91
16 New Zealand	NZD/EUR	EURNZD Curncy	XEUNZD Curncy	Jan-99	TENZDSP	Jan-91
17 Norway	NOK/EUR	EURNOK Curncy	XEUNOK Curncy	Jan-99	TENOKSP	Jan-91
18 Singapore	SGD/EUR	EURSGD Curncy	-	Jan-99	TESGDSP	Jan-91
19 Switzerland	CHF/EUR	EURCHF Curncy	XEUCHF Curncy	Jan-97	TECHFSP	Jan-91
20 UK	GBP/EUR	EURGBP Curncy	XEUGBP Curncy	Jan-99	TEGBPSP	Jan-91
21 Australia	AUD/GBP	GBPAUD Curncy	-	Nov-96	TSAUDSP	Jan-91
22 Canada	CAD/GBP	GBPCAD Curncy	-	Jan-96	TSCADSP	Jan-91
23 Japan	JPY/GBP	GBPJPY Curncy	-	Jan-96	TSJPYSP	Jan-91
24 New Zealand	NZD/GBP	GBPNZD Curncy	-	Nov-96	TSNZDSP	Jan-91
25 Norway	NOK/GBP	GBPNOK Curncy	-	Jan-96	TSNOKSP	Jan-91
26 Singapore	SGD/GBP	GBPSGD Curncy	-	Jan-96	TSSGDSP	Jan-91
27 South Africa	ZAR/GBP	GBPZAR Curncy	-	Nov-96	TSZARSP	Jan-91
28 Sweden	SEK/GBP	GBPSEK Curncy	-	Nov-96	TSSEKSP	Jan-91
29 Switzerland	CHF/GBP	GBPCHF Curncy	-	Jan-96	TSCHFSP	Jan-91
30 Eurozone	EUR/USD	EURUSD Curncy	XEUUSD Curncy	Jan-96	TDEURSP	Jan-91

Note: [1-12, 30] are FX pairs against USD; [13-20] -- against EUR; [21-29] -- against GBP.

All 30 currencies are floating.

2 step. Compute two daily measures for each FX pair:

- Daily Relative BA spread = $(\text{Ask} - \text{Bid}) / ((\text{Ask} + \text{Bid}) / 2)$
- First, do adjustment for overnight returns as described on p. 726 in Corwin and Schultz (JF, 2012)
Then compute a two-day CS measure using formula (14) in Corwin and Schultz (JF, 2012)
Alternatively, see formulas (5)-(6) of the Internet Appendix to "Understanding FX liquidity"
(http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2614853)

3 step. Compute two monthly measures for each FX pair:

- Monthly Relative BA spread is a simple average across all daily BA estimates
- Exclude negative two-day CS estimates from your sample and compute monthly CS measure as a simple average across positive two-day CS estimates

4 step. Compute monthly FX illiquidity measures for each FX pair:

- Standardize monthly BA spread and monthly CS estimates (for each series, subtract the mean and divide by the standard deviation)
 - Take simple average across the two series
- See columns C-AF of the "FX illiq measures" sheet for the output

5 step (if needed). Compute monthly systematic FX illiquidity measure:

Take simple average across FX pair liquidity measures
See column B of the "FX illiq measures" sheet for the output