



Currency Hedging and FX Trading Strategies using SGX-listed Futures

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About Tariq Dennison, CFP^{CM}

- I manage client accounts on the IBKR platform
 - US Advisor: GFM Asset Management LLC
 - HK Advisor: GFM Group Limited
- CERTIFIED FINANCIAL PLANNER^{CM} professional
- Global market experience since 1999
 - Commerzbank (NY, London, Frankfurt)
 - Bear Stearns (NY)
 - J.P. Morgan (NY)
 - Canadian Imperial Bank of Commerce
 - Societe Generale (HK)
- Masters in Financial Engineering
 - University of California at Berkeley
- Lecturer at ESSEC Business School
- Author of *Invest Outside the Box: Understanding Diverse Markets and Strategies*



FX Markets are huge, FX futures only 2% of them

OTC foreign exchange turnover

Net-net basis,¹ daily averages in April, in billions of US dollars

Table 1

Instrument	2001	2004	2007	2010	2013	2016
Foreign exchange instruments	1,239	1,934	3,324	3,973	5,357	5,067
Spot transactions	386	631	1,005	1,489	2,047	1,652
Outright forwards	130	209	362	475	679	700
Foreign exchange swaps	656	954	1,714	1,759	2,240	2,378
Currency swaps	7	21	31	43	54	82
Options and other products ²	60	119	212	207	337	254
<i>Memo:</i>						
<i>Turnover at April 2016 exchange rates³</i>	<i>1,381</i>	<i>1,884</i>	<i>3,123</i>	<i>3,667</i>	<i>4,917</i>	<i>5,067</i>
<i>Exchange-traded derivatives⁴</i>	<i>12</i>	<i>25</i>	<i>77</i>	<i>145</i>	<i>145</i>	<i>115</i>

¹ Adjusted for local and cross-border inter-dealer double-counting (ie "net-net" basis). ² The category "other FX products" covers highly leveraged transactions and/or trades whose notional amount is variable and where a decomposition into individual plain vanilla components was impractical or impossible. ³ Non-US dollar legs of foreign currency transactions were converted into original currency amounts at average exchange rates for April of each survey year and then reconverted into US dollar amounts at average April 2016 exchange rates. ⁴ Sources: Euromoney Tradedata; Futures Industry Association; The Options Clearing Corporation; BIS derivatives statistics. Foreign exchange futures and options traded worldwide.

Source: Bank of International Settlements (BIS)

Futures open interest and volume by currency, Sep 2017

	Short-term Interest Rate Futures		Currency Futures	
	Open Interest	Volume	Open Interest	Volume
Total (US\$billion)	\$ 31,119	\$ 5,639	\$ 269	\$ 150
US Dollar	\$ 20,934	\$ 3,603	\$ 251	\$ 147
EUR	\$ 4,676	\$ 947	\$ 81	\$ 46
Pound Sterling	\$ 2,180	\$ 718	\$ 21	\$ 15
Australian Dollar	\$ 1,271	\$ 135	\$ 12	\$ 10
Brazilian Real	\$ 754	\$ 53	\$ 57	\$ 23
Canadian Dollar	\$ 741	\$ 145	\$ 15	\$ 8
Swiss Franc	\$ 204	\$ 23	\$ 7	\$ 5
Swedish Krona	\$ 122	\$ 5	\$ 1	\$ -
Yen	\$ 116	\$ 6	\$ 31	\$ 26

Source: Bank of International Settlements (BIS)

Why currency futures?

- Institutional FX rates for smaller sizes (~US\$100k instead of US\$1mio++)
- Institutional interest rates borrowing/depositing the foreign currency
- Access to harder-to-trade currencies (e.g. INR)
- Standard exchange-based margining and settlement, no ISDA or CSA

Source: Bank of International Settlements (BIS)

G3 still most of the volume, China now #8

Currency distribution of OTC foreign exchange turnover

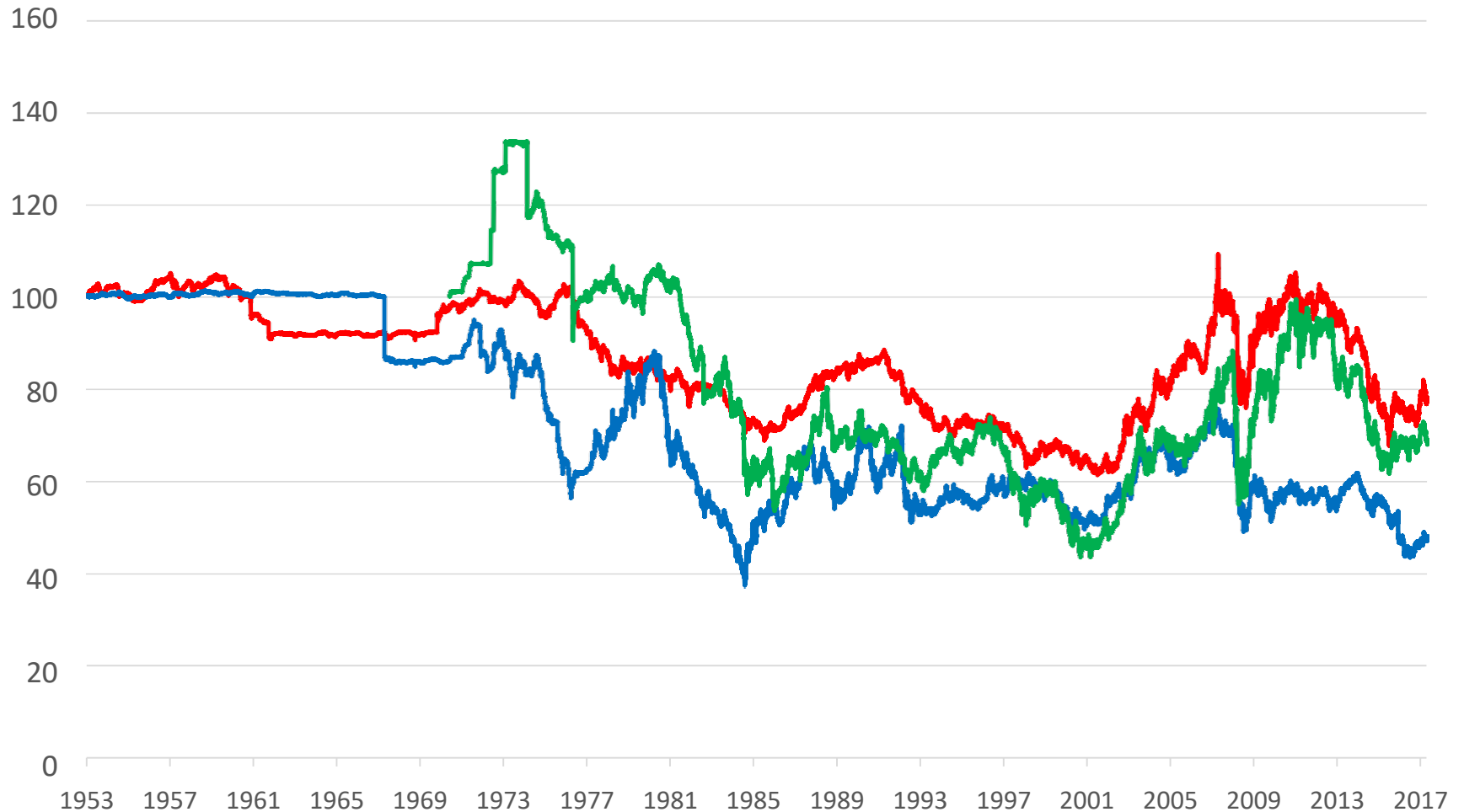
Net-net basis,¹ percentage shares of average daily turnover in April²

Table
2

Currency	2001		2004		2007		2010		2013		2016	
	Share	Rank	Share	Rank	Share	Rank	Share	Rank	Share	Rank	Share	Rank
USD	89.9	1	88.0	1	85.6	1	84.9	1	87.0	1	87.6	1
EUR	37.9	2	37.4	2	37.0	2	39.0	2	33.4	2	31.4	2
JPY	23.5	3	20.8	3	17.2	3	19.0	3	23.0	3	21.6	3
GBP	13.0	4	16.5	4	14.9	4	12.9	4	11.8	4	12.8	4
AUD	4.3	7	6.0	6	6.6	6	7.6	5	8.6	5	6.9	5
CAD	4.5	6	4.2	7	4.3	7	5.3	7	4.6	7	5.1	6
CHF	6.0	5	6.0	5	6.8	5	6.3	6	5.2	6	4.8	7
CNY ³	0.0	35	0.1	29	0.5	20	0.9	17	2.2	9	4.0	8
SEK	2.5	8	2.2	8	2.7	9	2.2	9	1.8	11	2.2	9
NZD ³	0.6	16	1.1	13	1.9	11	1.6	10	2.0	10	2.1	10
MXN ³	0.8	14	1.1	12	1.3	12	1.3	14	2.5	8	1.9	11
SGD ³	1.1	12	0.9	14	1.2	13	1.4	12	1.4	15	1.8	12
HKD ³	2.2	9	1.8	9	2.7	8	2.4	8	1.4	13	1.7	13
NOK ³	1.5	10	1.4	10	2.1	10	1.3	13	1.4	14	1.7	14
KRW ³	0.8	15	1.1	11	1.2	14	1.5	11	1.2	17	1.7	15

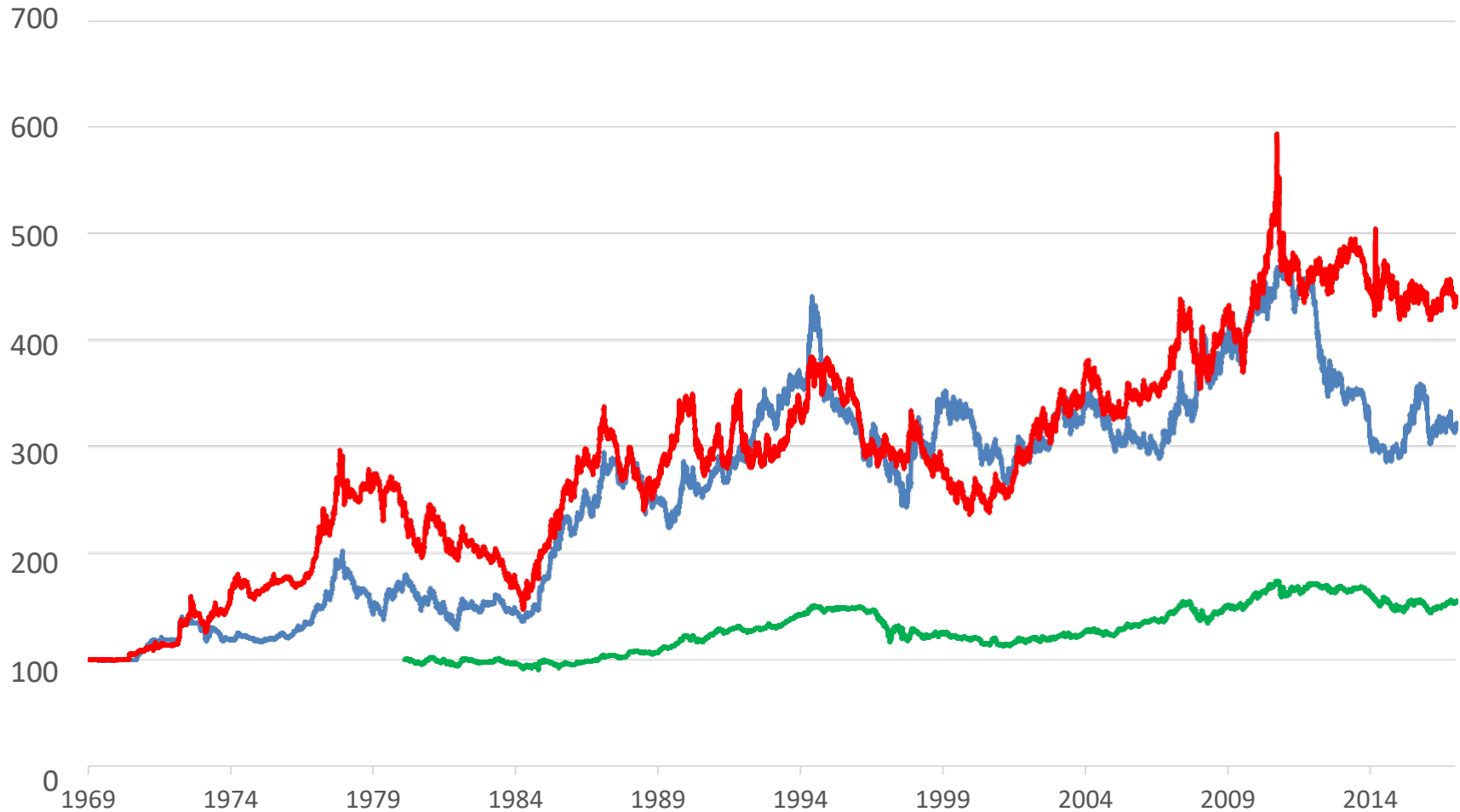
Source: Bank of International Settlements (BIS)

Currency history #1: History of the “ABC” exchange rates



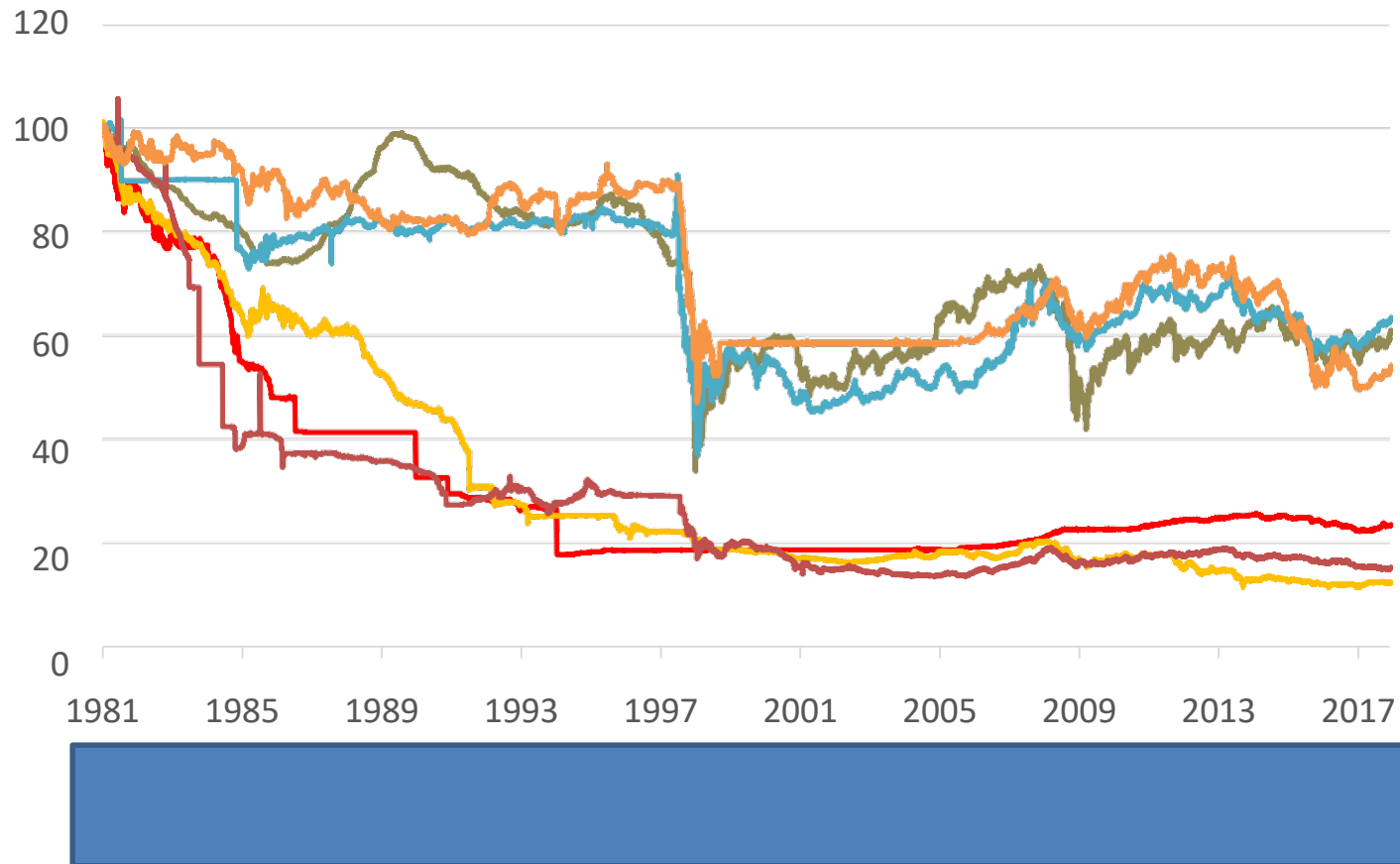
Source: Bank of International Settlements (BIS)

Currency history #2: The “appreciators”



Source: Bank of International Settlements (BIS)

Currency history #3: 6 Asian Currencies



Source: Bank of International Settlements (BIS)

3 Top Currency Futures on SGX are...

sgx.com/wps/portal/sgxweb/home/products/derivatives/contracts-comparator

Product Name	SGX USD/CNH FX Futures X	SGX INR/USD FX Futures X	SGX USD/SGD FX Futures
Product Type	Futures	Futures	Futures
Product Category	Foreign Exchange	Foreign Exchange	Foreign Exchange
Ticker Symbol	UC	IU	US
Contract Size	USD 100,000	INR 2,000,000	USD 25,000
Minimum Price Fluctuation	CNH 0.0001	0.010 US cents per 100 Rupees	\$\$0.0001
Contract Months	13 monthly followed by the next 8 quarterly months	12 monthly	12 monthly
Tick value	CNH 10	US\$2.00	\$\$2.50
Trading Hours (Singapore Time)	T Session: Pre - Opening: 7.10 am - 7.23 am Non - Cancel: 7.23 am - 7.25 am Opening: 7.25 am - 5.55 pm Pre - Closing: 5.55 pm - 5.59 pm Non - Cancel: 5.59 pm - 6.00 pm	T Session: Pre - Opening: 7.10 am - 7.23 am Non - Cancel: 7.23 am - 7.25 am Opening: 7.25 am - 7.30 pm Pre - Closing: 7.30 pm - 7.34 pm Non - Cancel: 7.34 pm - 7.35 pm	T Session: Pre - Opening: 7.10 am - 7.23 am Non - Cancel: 7.23 am - 7.25 am Opening: 7.25 am - 7.30 pm Pre - Closing: 7.30 pm - 7.34 pm Non - Cancel: 7.34 pm - 7.35 pm

Source: SGX

CNH

Contract

Trading Session ALL T T+1

Futures :AJ AU CH CN CY EC ED EM EY ID IDR IN INB ING INI INQ IU JB JG KJ
 KU MD MY MYR MYS NCH ND NEA NEM NID NK NMD NS NSG NTW NU PH
 PHP SGP ST SY TD TH TU TW UC UJ US UY YS

Options :CH(T) CH(T+1) EY(T) EY(T+1) IN(T) IN(T+1) IU(T) IU(T+1) JB(T) JB(T+1) NK(T)
 NK(T+1) SGP(T) SGP(T+1) TW(T) TW(T+1) UC(T) UC(T+1)

Commodities :1MF 3MF ACF BZF BZNF CCF CIF DLNF EE EF FB FEF GD GOF HRF LNF
 LPF M58F MEGF NJF NLNF PECF PESF PPCF PPSF PXF PXNF RT SMCF T58F
 TF VCF

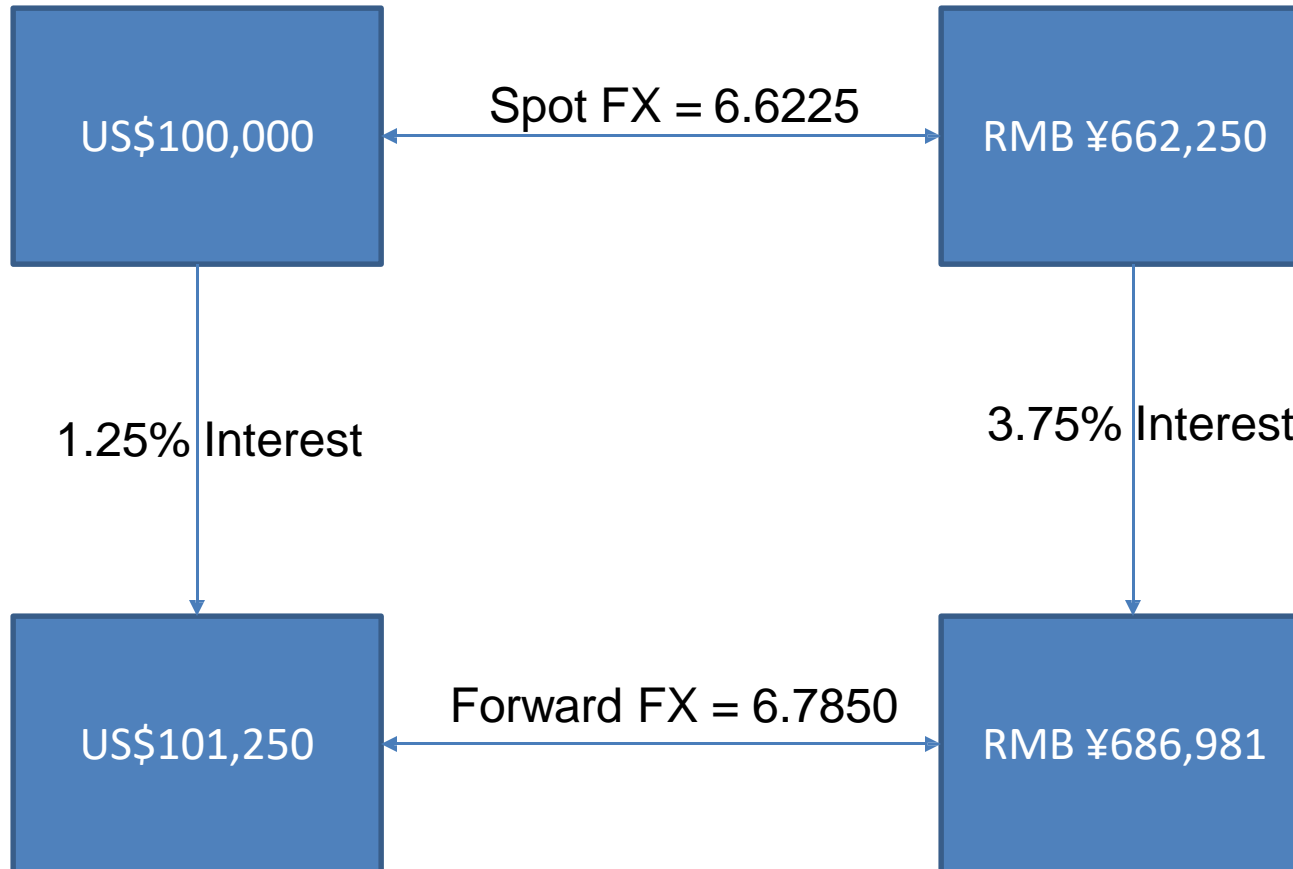
Commodities :ACF(T) ACF(T+1) FEF(T) FEF(T+1)

Options

	Contract Month	Last	Bid Size	Bid	Ask	Ask Size	Open	High	Low	Screen Volume	Off-Exch Volume	Total Volume	Open Interest
T	Dec 17	▼6.6225	13	6.6221	6.6231	15	6.6208	6.6230	6.6152	4,809	-	4,809	7,474
T	Jan 18	▼6.6373	1	6.6364	6.6374	10	6.6337	6.6376	6.6299	269	-	269	439
T	Feb 18	▼6.6547	17	6.6542	6.6557	10	6.6515	6.6547	6.6487	30	-	30	986
T	Mar 18	▼6.6694	4	6.6686	6.6700	7	6.6648	6.6697	6.6624	894	-	894	8,016
T	Jun 18	▼6.7097	10	6.7093	6.7110	12	6.7053	6.7108	6.7024	213	-	213	2,943
T	Jul 18	-	-	-	-	-	-	-	-	-	-	-	-
T	Aug 18	-	-	-	-	-	-	-	-	-	-	-	-
T	Sep 18	▼6.7464	2	6.7469	6.7505	10	6.7464	6.7464	6.7464	10	-	10	362
T	Oct 18	-	-	-	-	-	-	-	-	-	-	-	-
T	Nov 18	-	-	-	-	-	-	-	-	-	-	-	-
T	Dec 18	▼6.7813	10	6.7836	6.7892	10	6.7803	6.7813	6.7803	14	-	14	623
T	Mar 19	-	8	6.8088	-	-	-	-	-	-	-	-	8

Source: SGX

Forward prices represent different implied interest rates



Numbers made up for example purposes only



SGX CNH (cash)
now more liquid
than HKEX CNH
(physical)

6.6200

-0.0013 (-0.02%)

high 6.6251
low 6.6190
volume 501

Daily Weekly



Jan-18	6.6332	-0.0038	6.6370	6.6000 -	6.6380	6.6392 6.6330	116
Feb-18	6.6523	-0.0029	6.6552	6.4800 -	6.6565	6.6572 6.6514	20
Mar-18	6.6648	-0.0046	6.6694	6.6551 6.6920	6.6699	6.6715 6.6644	583
Jun-18	6.7076	-0.0028	6.7104	6.6250 -	6.7106	6.7120 6.7052	182
Sep-18	6.7460	-0.0033	6.7493	6.7450 6.8595	6.7500	6.7500 6.7442	68
Dec-18	6.7831	-0.0030	6.7861	6.6660 6.8977	6.7860	6.7860 6.7825	14

Source: HKEX

INR the 2nd most liquid FX futures on SGX

sgx.com/wps/portal/sgxweb/home/marketinfo/derivatives/delayed_prices/futures

Contract ▼

Trading Session ALL T T+1

Futures :AJ AU CH CN CY EC ED EM EY ID IDR IN INB ING INI INQ IU JB JG KJ
 KU MD MY MYR MYS NCH ND NEA NEM NID NK NMD NS NSG NTW NU PH
 PHP SGP ST SY TD TH TU TW UC UJ US UY YS

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 TF VCF

Commodities :ACF(T) ACF(T+1) FEF(T) FEF(T+1)

Options

	Contract Month	Last	Bid Size	Bid	Ask	Ask Size	Open	High	Low	Screen Volume	Off-Exch Volume	Total Volume	Open Interest
T	Dec 17	▼ 154.720	25	154.710	154.720	18	153.310	155.290	153.210	21,191	-	21,191	50,621
T+1	Dec 17	-	-	-	-	-	-	-	-	-	-	-	-
T+1	Jan 18	-	-	-	-	-	-	-	-	-	-	-	-
T	Jan 18	▼ 154.190	31	154.160	154.190	1	154.470	154.710	154.190	144	-	144	434

Source: SGX

Even SGD futures don't trade much...

sgx.com/wps/portal/sgxweb/home/marketinfo/derivatives/delayed_prices/futures

Contract ▼

Trading Session ALL T T+1

Futures :AJ AU CH CN CY EC ED EM EY ID IDR IN INB ING INI INQ IU JB JG KJ
 KU MD MY MYR MYS NCH ND NEA NEM NID NK NMD NS NSG NTW NU PH
 PHP SGP ST SY TD TH TU TW UC UJ US UY YS

Options :CH(T) CH(T+1) EY(T) EY(T+1) IN(T) IN(T+1) IU(T) IU(T+1) JB(T) JB(T+1) NK(T)
 NK(T+1) SGP(T) SGP(T+1) TW(T) TW(T+1) UC(T) UC(T+1)

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 TF VCF

Commodities :ACF(T) ACF(T+1) FEF(T) FEF(T+1)

Options

	Contract Month	Last	Bid Size	Bid	Ask	Ask Size	Open	High	Low	Screen Volume	Off-Exch Volume	Total Volume	Open Interest
T	Dec 17	▼ 1.3467	10	1.3468	1.3473	10	1.3467	1.3467	1.3467	3	-	3	1,661
T	Jan 18	-	5	1.3456	1.3469	10	-	-	-	-	-	-	296
T	Feb 18	-	5	1.3461	1.3466	5	-	-	-	-	-	-	-
T	Mar 18	-	10	1.3448	1.3463	10	-	-	-	-	-	-	-

Source: SGX

KRW

	Contract Month	Last	Bid Size	Bid	Ask	Ask Size	Open	High	Low	Screen Volume	Off-Exch Volume	Total Volume	Open Interest
T	Dec 17	▼0.9196	30	0.9195	0.9203	50	0.9204	0.9242	0.9196	37	-	37	1,213

IDR

	Contract Month	Last	Bid Size	Bid	Ask	Ask Size	Open	High	Low	Screen Volume	Off-Exch Volume	Total Volume	Open Interest
T	Dec 17	-	10	7.38000	7.40300	10	-	-	-	-	-	-	-

MYR

	Contract Month	Last	Bid Size	Bid	Ask	Ask Size	Open	High	Low	Screen Volume	Off-Exch Volume	Total Volume	Open Interest
T	Dec 17	-	10	24.59100	24.64100	10	-	-	-	-	-	-	16

THB

	Contract Month	Last	Bid Size	Bid	Ask	Ask Size	Open	High	Low	Screen Volume	Off-Exch Volume	Total Volume	Open Interest
T	Dec 17	-	-	-	-	-	-	-	-	-	-	-	-



















PHP

	Contract Month	Last	Bid Size	Bid	Ask	Ask Size	Open	High	Low	Screen Volume	Off-Exch Volume	Total Volume	Open Interest
T	Dec 17	-	10	19.70900	19.73900	10	-	-	-	-	-	-	-

AUD

	Contract Month	Last	Bid Size	Bid	Ask	Ask Size	Open	High	Low	Screen Volume	Off-Exch Volume	Total Volume	Open Interest
T	Dec 17	-	10	0.7641	0.7647	10	-	-	-	-	-	-	-

Source: SGX

Product	Code	Contract		Last	Change	Chart	Open	High	Low	Globex Vol
Euro FX Futures	6EZ7	DEC 2017		1.1797	-0.00015		1.18085	1.1815	1.17925	41,848
Japanese Yen Futures	6JZ7	DEC 2017		0.008878	-0.0000305		0.008911	0.0089145	0.008877	35,561
British Pound Futures	6BZ7	DEC 2017		1.3379	0.0000		1.3382	1.3395	1.3367	17,890
Australian Dollar Futures	6AZ7	DEC 2017		0.7524	-0.0036		0.7561	0.7569	0.7520	28,896
Mexican Peso Futures	6MZ7	DEC 2017		0.052850	-0.000040		0.052900	0.052930	0.052820	2,071
New Zealand Dollar Futures	6NZ7	DEC 2017		0.6838	-0.0036		0.6873	0.6888	0.6833	7,829
Russian Ruble Futures	6RZ7	DEC 2017		0.016850	-0.000015		0.016880	0.016880	0.016820	296
Brazilian Real Futures	6LF8	JAN 2018		0.30785	+0.00005		0.3081	0.3081	0.30785	9
Indian Rupee/USD Futures	SIRZ7	DEC 2017		154.57	-0.04		154.66	154.77	154.57	1,327
Standard-Size USD/Offshore RMB (CNH)	CNHZ7	DEC 2017		-	-		-	-	-	0

Source: CME

Strategy 1: Outright

Drivers


- Yield Advantage
- Monetary easing in short currency
- Positive real rates in long currency
- “Risk on” momentum

/ Carry Trade

Risks

- “Risk off” flight to quality
- Regular volatility, margin call and monetary reversal

How to turn a US Treasury into an RMB bond with futures



Calculator of how to "make" a dim sum bond using a USD bond and a USD/CNH forward or future

Example: T 1.000% 12/15/2017

Face Value / Clean Price	\$	1,000,000	100 11/32		
Coupon		1.000%			0
Number of HKEX contracts		10.0			
Settlement Date / Dirty Price		7/9/2016	100.78	Total Return in CNH	3.69%

Settlement Date	UST Market Value	Coupon	USD/CNH Spot	UST Value in CNH	Coupon in CNH	Rolling Futures P&L
14-Dec-16	\$ 1,007,782	\$ -	6.6800	¥ 6,731,982	¥ -	¥ -
15-Mar-17	\$ 1,005,836	\$ -	6.6800	¥ 6,718,987	¥ -	¥ 101,400
14-Jun-17	\$ 1,003,891	\$ 5,000	6.6800	¥ 6,705,991	¥ 33,400	¥ 36,900
13-Sep-17	\$ 1,001,945	\$ -	6.6800	¥ 6,692,996	¥ -	¥ 45,200
13-Dec-17	\$ 1,000,000	\$ 5,000	6.6800	¥ 6,680,000	¥ 33,400	¥ 50,200

Basis		0.0366	0.0369	0.0452	0.0502
Futures					
	14-Dec-16	15-Mar-17	14-Jun-17	13-Sep-17	13-Dec-17
	6.7448	6.7814	6.8183	6.8635	6.9137
		6.6800	6.7169	6.7621	6.8123
			6.6800	6.7252	6.7754
				6.6800	6.7302
					6.6800

Strategy 2: Long China A-shares

Drivers

- Weaker Yen → stronger JP stocks
- Opportunity to select less currency sensitive names

Long USD/CNH futures

Risks

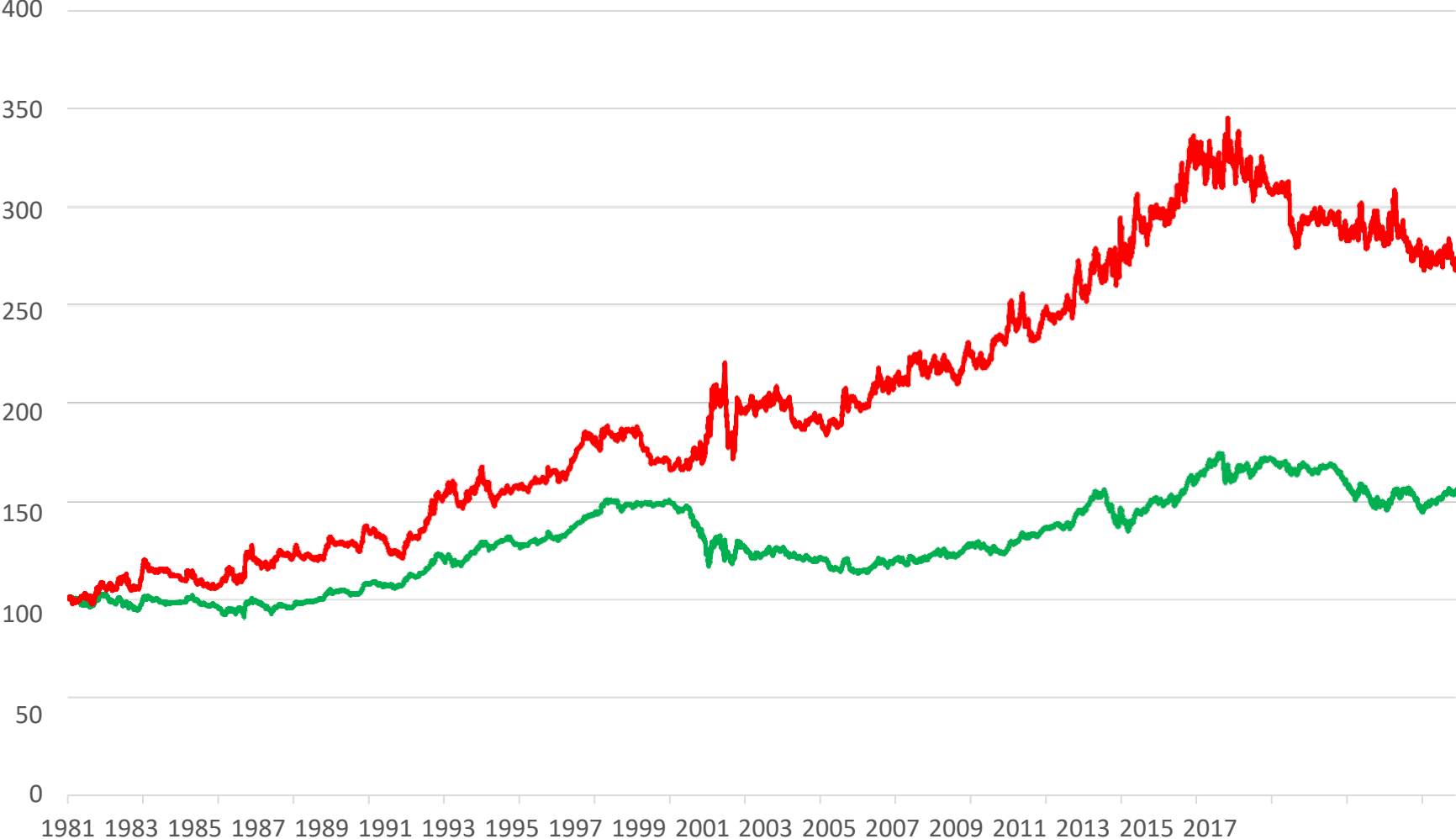
- Stronger Yen → weaker JP stocks
- Margin requirements (if accounts not combined)

Futures hedge → better than borrowing CNH @6%++!

CHF	0 - 100,000	1.5% (BM + 1.5%)
	100,000.01 - 1,000,000	1% (BM + 1%)
	1,000,000.01 - 200,000,000	0.5% (BM + 0.5%)
	200,000,000.01 +	0.5% (BM + 0.5%) <i>See note below</i>
CNY/CNH	0 - 625,000	6.387% (BM + 5%)
	625,000.01 - 6,250,000	6.387% (BM + 5%)
	6,250,000.01 - 125,000,000	6.387% (BM + 5%)
	125,000,000.01 +	6.387% (BM + 5%) <i>See note below</i>

Source: Interactive Brokers

Strategy #3: FX Momentum Strategies – pure or overlay



— 100% Singapore Dollar — 20d SMA Strategy

Calculations based on BIS data, not responsible for errors



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