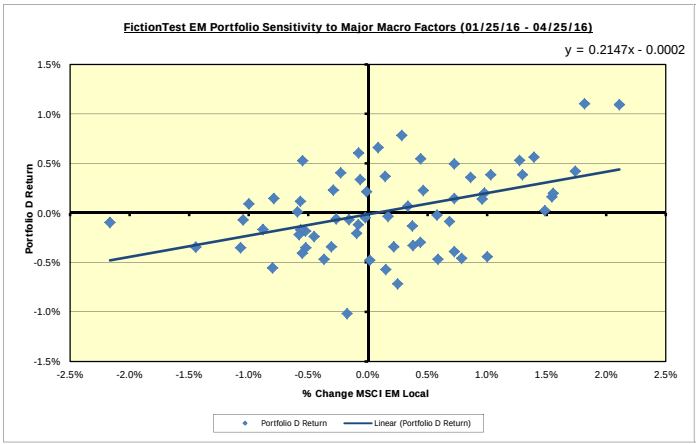
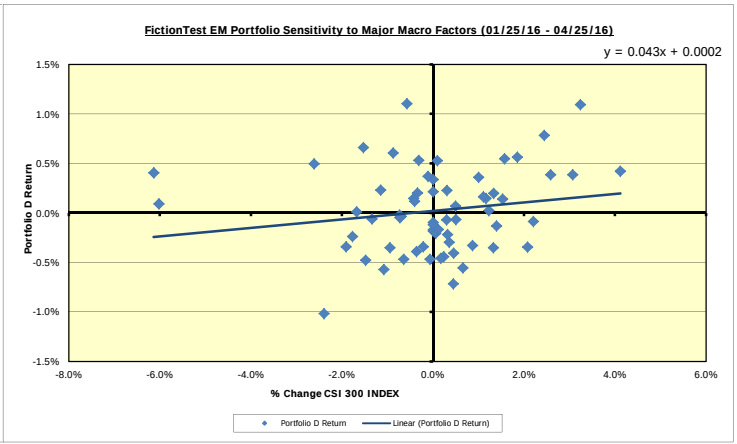
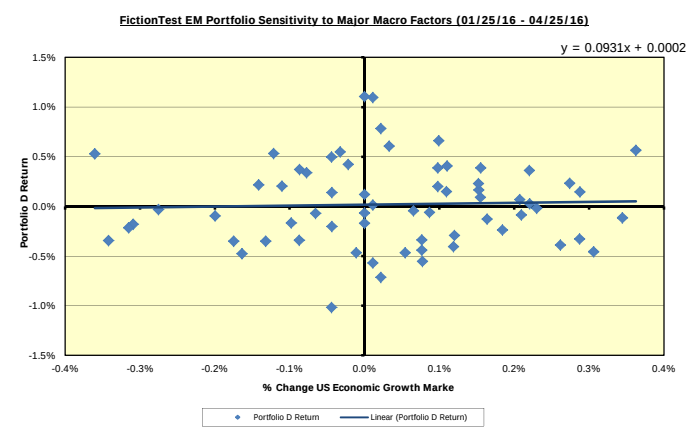
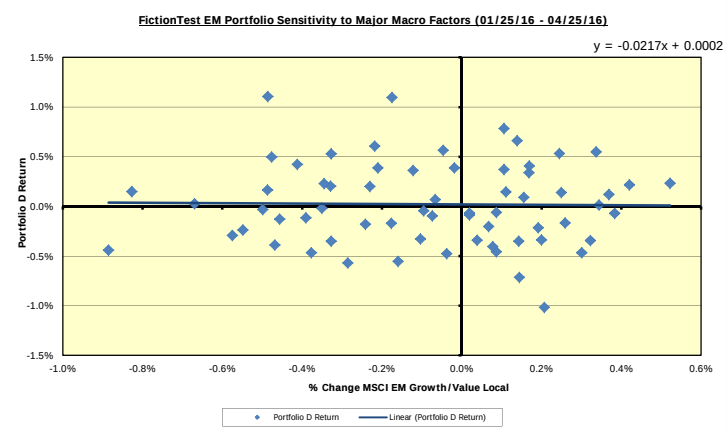
FictionTest EM Portfolio Sensitivity to Major Macro Factors (01/25/16 - 04/25/16): Correlation Matrix

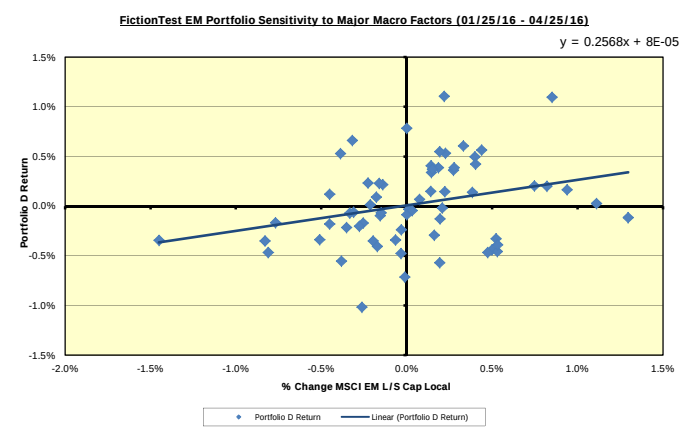
	Annualized Vol	7%	14%	28%	3%	5%	8%	44%	37%	4%	54%	19%
	-	Portfolio D Return	MSELEGF Index	SHSZ300 Index	GSWBUSGF Index	.EMGROVAL Index	.EMLSCAP Index	IBOXUMSE Index	GT10 Govt	CNYUSD Curncy	COA Comdty	LMEX Index
	Portfolio D Return	1.0	0.4	0.2	0.0	(0.0)	0.3	(0.2)	(0.0)	0.3	(0.0)	0.1
MSCI EM Local	MSELEGF Index	0.4	1.0	0.4	0.4	(0.4)	0.7	(0.5)	0.1	0.4	0.2	0.3
CSI 300 INDEX	SHSZ300 Index	0.2	0.4	1.0	0.0	(0.1)	0.1	(0.1)	0.0	0.0	(0.1)	0.1
US Economic Growth Marke	GSWBUSGF Index	0.0	0.4	0.0	1.0	(0.2)	0.5	(0.7)	0.7	0.1	0.6	0.6
MSCI EM Growth/Value Local	EMGROVAL Index	(0.0)	(0.4)	(0.1)	(0.2)	1.0	(0.5)	0.2	(0.1)	(0.4)	(0.3)	(0.2)
MSCI EM L/S Cap Local	.EMLSCAP Index	0.3	0.7	0.1	0.5	(0.5)	1.0	(0.5)	0.2	0.3	0.4	0.3
MARKIT CDX.EM.25 06/21	IBOXUMSE Index	(0.2)	(0.5)	(0.1)	(0.7)	0.2	(0.5)	1.0	(0.5)	(0.2)	(0.5)	(0.5)
US TREASURY N/B	GT10 Govt	(0.0)	0.1	0.0	0.7	(0.1)	0.2	(0.5)	1.0	(0.0)	0.4	0.4
CNY-USD X-RATE	CNYUSD Curncy	0.3	0.4	0.0	0.1	(0.4)	0.3	(0.2)	(0.0)	1.0	0.1	0.2
BRENT CRUDE FUTR Jun16	COA Comdty	(0.0)	0.2	(0.1)	0.6	(0.3)	0.4	(0.5)	0.4	0.1	1.0	0.5
LMEX LONDON METALS INDEX	LMEX Index	0.1	0.3	0.1	0.6	(0.2)	0.3	(0.5)	0.4	0.2	0.5	1.0

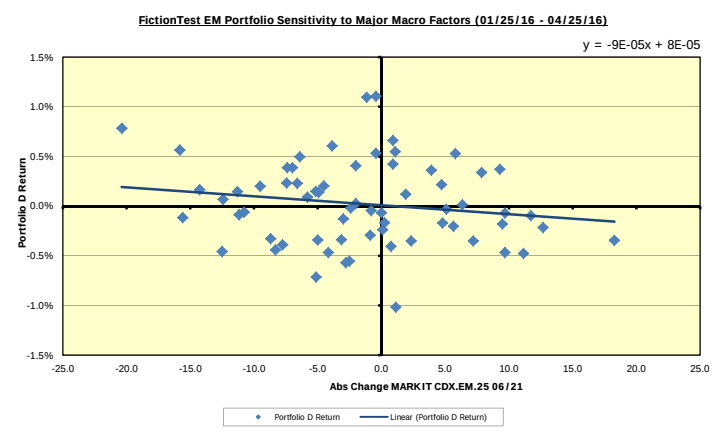






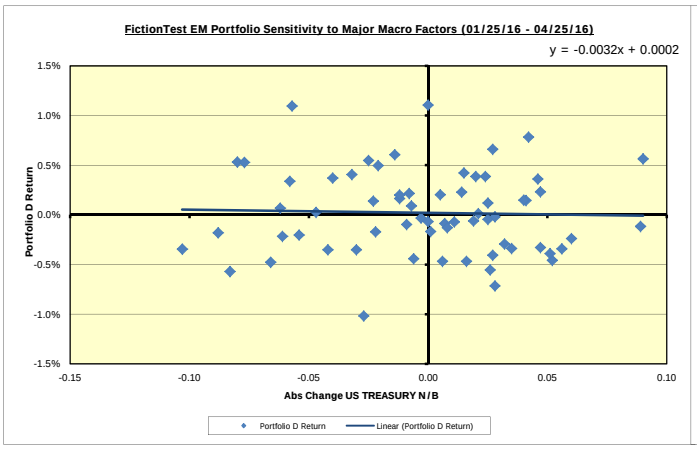


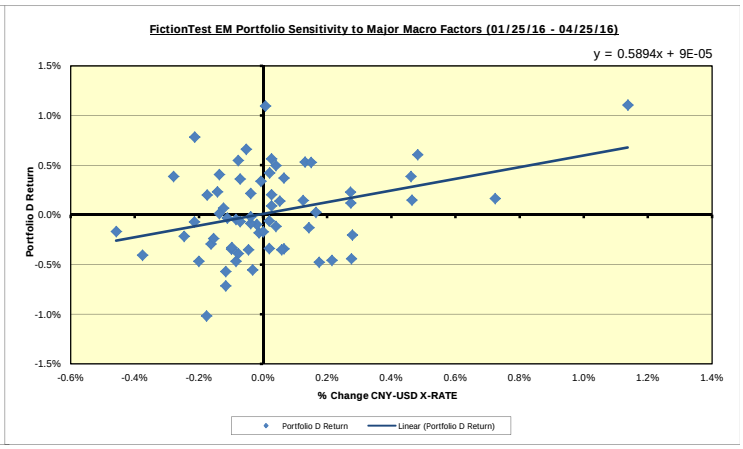


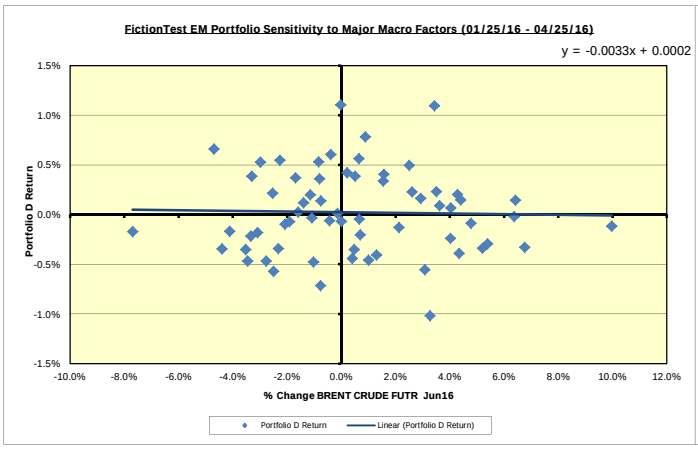


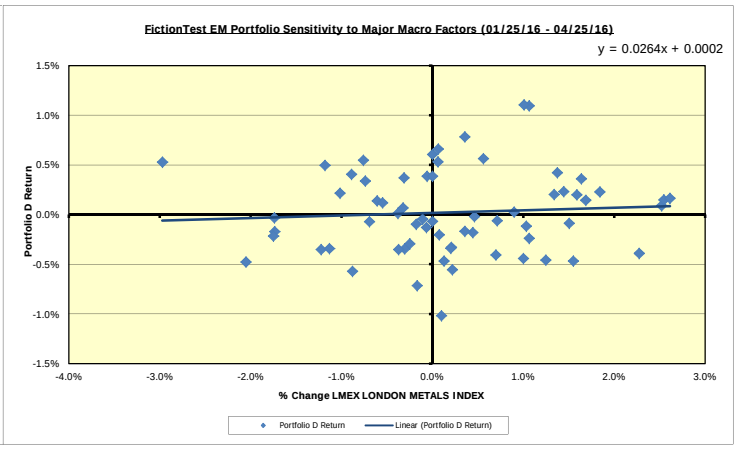
Note: analyis based on ccy-hedged local-market returns

FictionTest EM Portfolio Sensitivity to Major Macro Factors (01/25/16 - 04/25/16): Correlation Matrix



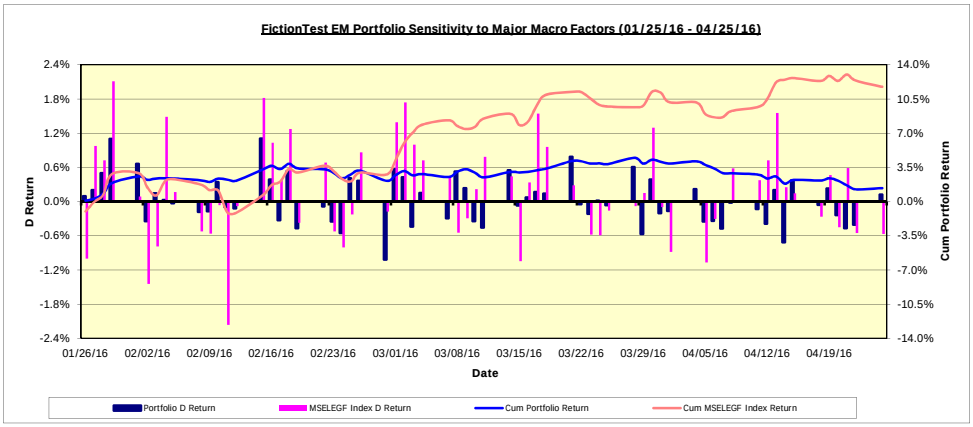






Latest 5d Change	*Latest* 1m Change	*Latest* 3m Change	Asset	*Latest* 5d z-Score	*Latest* 1m z-Score	*Latest* 3m z-Score
-0.8%	-2.4%	1.4%	Portfolio D Return	(0.8)	(1.2)	0.4
-0.5%	1.8%	11.7%	MSELEGF Index	(0.3)	0.5	1.7
-2.1%	-1.1%	1.1%	SHSZ300 Index	(0.5)	(0.1)	0.1
0.5%	0.9%	2.2%	GSWBUSGF Index	1.4	1.1	1.6
-0.8%	-1.7%	-5.4%	.EMGROVAL Index	(1.2)	(1.1)	(2.1)
-0.3%	-0.5%	3.4%	.EMLSCAP Index	(0.3)	(0.2)	0.9
5.8	(11.8)	(101.2)	IBOXUMSE Index	0.3	(0.3)	(1.6)
0.14	0.01	(0.09)	GT10 Govt	1.5	0.1	(0.3)
-0.2%	0.5%	1.4%	CNYUSD Curncy	(0.3)	0.4	0.7
3.7%	8.4%	35.3%	COA Comdty	0.5	0.5	1.3
3.2%	4.0%	13.9%	LMEX Index	1.2	0.7	1.5

Isolated Single Factor Change	*Expected* Portfolio Return	Asset
-1.0%	-0.2%	MSELEGF Index
-2.0%	-0.1%	SHSZ300 Index
-0.5%	0.0%	GSWBUSGF Index
-0.5%	0.0%	.EMGROVAL Index
-1.0%	-0.3%	.EMLSCAP Index
10	-0.1%	IBOXUMSE Index
-0.1	0.0%	GT10 Govt
-0.5%	-0.3%	CNYUSD Curncy
-5.0%	0.0%	COA Comdty
-2.0%	-0.1%	LMEX Index



Note: analyis based on ccy-hedged local-market returns

FictionTest EM Portfolio Sensitivity to Major Macro Factors (01/25/16 - 04/25/16)

Stock Return Correlation to Major Macro Factors

Note: using excess returns, as opposed to returns, can produce significantly different results esp. if vol of returns and/or spread returns are low.

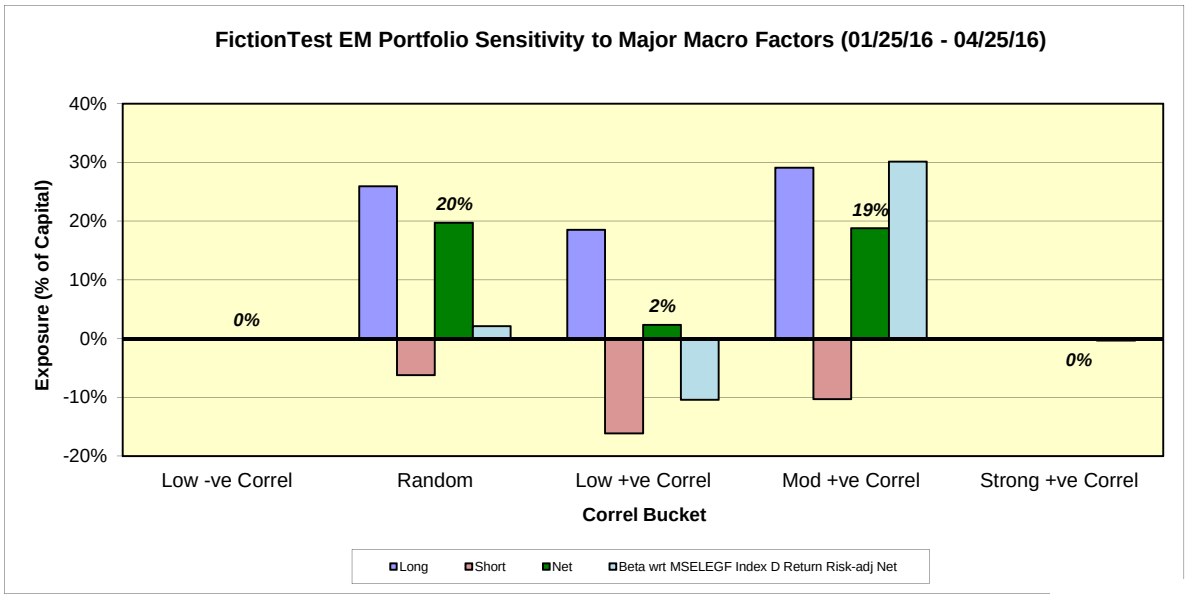
						yields	yields			
Correl wrt MSELEGF Index -->	*1.0*	*0.4*	*0.4*	*(0.4)*	*0.7*	*(0.5)*	*0.1*	*0.4*	*0.2*	*0.3*
Item	**MSELEGF Index**	**SHSZ300 Index**	**GSWBUSGF Index**	**.EMGROVAL Index**	**.EMLSCAP Index**	**IBOXUMSE Index**	**GT10 Govt**	**CNYUSD Curncy**	**COA Comdty**	**LMEX Index**
1	688 HK 0.8	165 HK 0.6	SCCO US 0.7	128940 KS 0.2	NED SJ 0.6	CHILE CI 0.1	BIDU US 0.4	NED SJ 0.4	PETR3 BZ 0.5	SCCO US 0.6
2	2607 HK 0.7	2607 HK 0.5	BIDU US 0.6	AXIATA MK 0.0	MRP SJ 0.6	PGAS IJ 0.1	SCCO US 0.4	MOL HB 0.4	SCCO US 0.5	PETR3 BZ 0.5
3	165 HK 0.7	867 HK 0.4	LPP PW 0.5	IDEA IN 0.0	PETR3 BZ 0.6	047810 KS 0.1	LPP PW 0.2	KOMB CP 0.4	JPOSUR CB 0.4	CSNA3 BZ 0.5
4	813 HK 0.7	813 HK 0.4	PETR3 BZ 0.5	CHMF RM 0.0	SCCO US 0.5	028260 KS 0.0	JPOSUR CB 0.2	1114 HK 0.4	LPP PW 0.4	BIDU US 0.4
5	902 HK 0.7	1816 HK 0.4	CSNA3 BZ 0.4	BIDU US 0.0	LPP PW 0.5	CHMF RM 0.0	GNP IN 0.2	UPLL IN 0.3	BIDU US 0.4	LPP PW 0.4
6	867 HK 0.6	688 HK 0.4	JPOSUR CB 0.3	GNP IN 0.0	CCOLA TI 0.5	128940 KS 0.0	813 HK 0.2	1816 HK 0.3	ARCLK TI 0.3	DTEX3 BZ 0.4
7	MOL HB 0.6	902 HK 0.4	MOL HB 0.3	ARCLK TI 0.0	COLBUN CI 0.5	SMRA IJ 0.0	PETR3 BZ 0.2	902 HK 0.3	CCOLA TI 0.3	688 HK 0.3
8	UPLL IN 0.6	1114 HK 0.3	HYDR RM 0.3	PGAS IJ 0.0	KOMB CP 0.5	AXIATA MK 0.0	ENG PW 0.2	151 HK 0.3	MRP SJ 0.3	MSS IN 0.2
9	1816 HK 0.6	151 HK 0.3	CCOLA TI 0.3	SMRA IJ 0.0	ARCLK TI 0.5	2385 TT 0.0	HDFC IN 0.2	MRP SJ 0.3	CSNA3 BZ 0.3	SBSP3 BZ 0.2
10	MRP SJ 0.6	SRCM IN 0.3	DTEX3 BZ 0.3	HYDR RM -0.1	JPOSUR CB 0.5	ANDINAB CI 0.0	MOL HB 0.2	867 HK 0.3	NED SJ 0.3	813 HK 0.2
11	NED SJ 0.6	SM PM 0.3	ARCLK TI 0.3	BHIN IN -0.1	MOL HB 0.4	034020 KS 0.0	UPLL IN 0.2	PETR3 BZ 0.3	KOMB CP 0.2	165 HK 0.2
12	028260 KS 0.6	BIDU US 0.2	688 HK 0.3	SRCM IN -0.1	SBSP3 BZ 0.4	151 HK 0.0	688 HK 0.2	813 HK 0.3	HLMEX* MM 0.2	HLMEX* MM 0.2
13	KOMB CP 0.5	DTEX3 BZ 0.2	SBSP3 BZ 0.3	TLKM IJ -0.1	SRCM IN 0.4	ENG PW -0.1	CSNA3 BZ 0.2	688 HK 0.3	MOL HB 0.2	MOL HB 0.2
14	1114 HK 0.5	AXIATA MK 0.2	COLBUN CI 0.2	ODPV3 BZ -0.1	902 HK 0.4	HLMEX* MM -0.1	IDEA IN 0.1	2385 TT 0.3	HYDR RM 0.2	1816 HK 0.2
15	MSS IN 0.5	028260 KS 0.2	ODPV3 BZ 0.2	047810 KS -0.1	2607 HK 0.4	023530 KS -0.1	HYDR RM 0.1	2607 HK 0.2	SBSP3 BZ 0.2	UPLL IN 0.2
16	SRCM IN 0.5	PETR3 BZ 0.2	MRP SJ 0.2	1816 HK -0.1	BIDU US 0.4	TLKM IJ -0.1	SMRA IJ 0.1	028260 KS 0.2	DTEX3 BZ 0.2	KOFL MM 0.2
17	COLBUN CI 0.5	CSNA3 BZ 0.2	KOMB CP 0.2	JPOSUR CB -0.1	688 HK 0.4	867 HK -0.1	023530 KS 0.1	SBSP3 BZ 0.2	KOFL MM 0.2	MRP SJ 0.2
18	2385 TT 0.5	CCOLA TI 0.2	813 HK 0.2	CCOLA TI -0.1	MSS IN 0.4	1816 HK -0.2	ODPV3 BZ 0.1	DTEX3 BZ 0.2	IDEA IN 0.1	902 HK 0.2
19	PETR3 BZ 0.5	MOL HB 0.2	NED SJ 0.2	165 HK -0.1	DTEX3 BZ 0.4	SM PM -0.2	DTEX3 BZ 0.1	HLMEX* MM 0.2	MSS IN 0.1	2607 HK 0.2
20	CCOLA TI 0.5	ODPV3 BZ 0.1	HDFC IN 0.2	COLBUN CI -0.2	UPLL IN 0.4	KOFL MM -0.2	CCOLA TI 0.1	165 HK 0.2	UPLL IN 0.1	1114 HK 0.2
21	CSNA3 BZ 0.5	CHMF RM 0.1	902 HK 0.2	023530 KS -0.2	813 HK 0.4	GNP IN -0.2	MRP SJ 0.1	034020 KS 0.2	813 HK 0.1	HYDR RM 0.2
22	ANDINAB CI 0.5	128940 KS 0.1	KOFL MM 0.2	2385 TT -0.2	CSNA3 BZ 0.4	MSS IN -0.2	KOMB CP 0.1	MSS IN 0.2	HDFC IN 0.1	ODPV3 BZ 0.2
23	DTEX3 BZ 0.5	2385 TT 0.1	HLMEX* MM 0.2	ANDINAB CI -0.2	SM PM 0.4	2607 HK -0.2	NED SJ 0.1	ANDINAB CI 0.2	023530 KS 0.1	NED SJ 0.2
24	SM PM 0.5	MRP SJ 0.1	1816 HK 0.1	902 HK -0.2	2385 TT 0.4	902 HK -0.2	MSS IN 0.1	SRCM IN 0.2	902 HK 0.1	JPOSUR CB 0.2
25	HDFC IN 0.5	MSS IN 0.1	UPLL IN 0.1	867 HK -0.2	ENG PW 0.3	IDEA IN -0.2	BHIN IN 0.0	KOFL MM 0.2	ODPV3 BZ 0.1	COLBUN CI 0.2
26	SBSP3 BZ 0.4	HDFC IN 0.1	MSS IN 0.1	028260 KS -0.2	1114 HK 0.3	165 HK -0.2	151 HK 0.0	CSNA3 BZ 0.2	COLBUN CI 0.1	HDFC IN 0.2
27	034020 KS 0.4	LPP PW 0.1	GNP IN 0.1	688 HK -0.2	ANDINAB CI 0.3	1114 HK -0.2	CHMF RM 0.0	HYDR RM 0.2	BHIN IN 0.1	KOMB CP 0.2
28	LPP PW 0.4	UPLL IN 0.1	SRCM IN 0.1	2607 HK -0.2	ODPV3 BZ 0.3	688 HK -0.2	COLBUN CI 0.0	COLBUN CI 0.2	SRCM IN 0.1	151 HK 0.2
29	ODPV3 BZ 0.4	PGAS IJ 0.1	TLKM IJ 0.1	CHILE CI -0.2	034020 KS 0.3	BHIN IN -0.2	165 HK 0.0	047810 KS 0.2	TLKM IJ 0.1	CCOLA TI 0.2
30	151 HK 0.4	KOFL MM 0.1	IDEA IN 0.1	KOFL MM -0.2	165 HK 0.3	UPLL IN -0.2	KOFL MM 0.0	CCOLA TI 0.1	151 HK 0.0	GNP IN 0.1
31	CHILE CI 0.4	SCCO US 0.1	1114 HK 0.1	SM PM -0.2	CHILE CI 0.3	HYDR RM -0.2	SM PM 0.0	LPP PW 0.1	GNP IN 0.0	ENG PW 0.1
32	BIDU US 0.3	034020 KS 0.1	028260 KS 0.1	ENG PW -0.2	028260 KS 0.3	ARCLK TI -0.3	1816 HK 0.0	CHILE CI 0.1	SMRA IJ 0.0	BHIN IN 0.1
33	JPOSUR CB 0.3	GNP IN 0.0	867 HK 0.1	KOMB CP -0.2	867 HK 0.3	COLBUN CI -0.3	TLKM IJ 0.0	TLKM IJ 0.1	867 HK 0.0	867 HK 0.1
34	SCCO US 0.3	047810 KS 0.0	151 HK 0.0	HDFC IN -0.2	HDFC IN 0.3	NED SJ -0.3	SBSP3 BZ 0.0	SCCO US 0.1	CHILE CI 0.0	128940 KS 0.1
35	TLKM IJ 0.3	ENG PW 0.0	023530 KS 0.0	813 HK -0.3	KOFL MM 0.3	813 HK -0.3	034020 KS 0.0	BHIN IN 0.1	688 HK 0.0	AXIATA MK 0.1
36	GNP IN 0.2	TLKM IJ 0.0	ENG PW 0.0	151 HK -0.3	TLKM IJ 0.2	SRCM IN -0.3	902 HK 0.0	IDEA IN 0.1	ANDINAB CI 0.0	TLKM IJ 0.1
37	047810 KS 0.2	IDEA IN 0.0	BHIN IN 0.0	MSS IN -0.3	HYDR RM 0.2	SBSP3 BZ -0.3	HLMEX* MM 0.0	SM PM 0.1	1114 HK 0.0	028260 KS 0.1
38	KOFL MM 0.2	HLMEX* MM 0.0	165 HK 0.0	UPLL IN -0.3	1816 HK 0.2	MRP SJ -0.3	1114 HK 0.0	GNP IN 0.1	034020 KS 0.0	ARCLK TI 0.1
39	ENG PW 0.2	NED SJ 0.0	AXIATA MK 0.0	LPP PW -0.3	151 HK 0.2	ODPV3 BZ -0.3	867 HK -0.1	ENG PW 0.1	2607 HK 0.0	047810 KS 0.0
40	128940 KS 0.2	ANDINAB CI 0.0	2607 HK 0.0	HLMEX* MM -0.3	IDEA IN 0.2	CCOLA TI -0.3	ARCLK TI -0.1	JPOSUR CB 0.0	1816 HK 0.0	SRCM IN 0.0
41	ARCLK TI 0.2	COLBUN CI 0.0	SM PM 0.0	MRP SJ -0.3	BHIN IN 0.2	JPOSUR CB -0.3	SRCM IN -0.1	ARCLK TI 0.0	SM PM 0.0	IDEA IN 0.0
42	023530 KS 0.2	SMRA IJ 0.0	2385 TT 0.0	SCCO US -0.3	PGAS IJ 0.1	HDFC IN -0.3	AXIATA MK -0.1	PGAS IJ 0.0	165 HK -0.1	SMRA IJ 0.0
43	HYDR RM 0.2	023530 KS 0.0	CHILE CI 0.0	SBSP3 BZ -0.3	023530 KS 0.1	DTEX3 BZ -0.4	2607 HK -0.1	AXIATA MK 0.0	PGAS IJ -0.1	ANDINAB CI 0.0
44	AXIATA MK 0.1	HYDR RM -0.1	034020 KS -0.1	1114 HK -0.3	HLMEX* MM 0.1	KOMB CP -0.4	2385 TT -0.1	BIDU US 0.0	ENG PW -0.1	2385 TT -0.1
45	PGAS IJ 0.1	KOMB CP -0.1	CHMF RM -0.1	MOL HB -0.4	SMRA IJ 0.0	MOL HB -0.4	047810 KS -0.1	ODPV3 BZ 0.0	2385 TT -0.1	034020 KS -0.1
46	BHIN IN 0.1	BHIN IN -0.1	ANDINAB CI -0.1	NED SJ -0.4	AXIATA MK 0.0	CSNA3 BZ -0.4	128940 KS -0.2	128940 KS 0.0	028260 KS -0.1	023530 KS -0.1
47	IDEA IN 0.0	CHILE CI -0.1	SMRA IJ -0.1	DTEX3 BZ -0.5	CHMF RM 0.0	BIDU US -0.5	028260 KS -0.2	HDFC IN -0.1	AXIATA MK -0.1	CHMF RM -0.1
48	CHMF RM 0.0	JPOSUR CB -0.1	047810 KS -0.1	CSNA3 BZ -0.5	047810 KS 0.0	LPP PW -0.5	PGAS IJ -0.2	CHMF RM -0.1	047810 KS -0.2	SM PM -0.1
49	HLMEX* MM 0.0	SBSP3 BZ -0.1	128940 KS -0.1	PETR3 BZ -0.5	GNP IN 0.0	PETR3 BZ -0.5	CHILE CI -0.2	SMRA IJ -0.2	CHMF RM -0.3	PGAS IJ -0.1
50	SMRA IJ -0.1	ARCLK TI -0.2	PGAS IJ -0.2	034020 KS -0.6	128940 KS -0.2	SCCO US -0.6	ANDINAB CI -0.2	023530 KS -0.2	128940 KS -0.3	CHILE CI -0.1

Note: analyis based on ccy-hedged local-market returns

FictionTest EM Portfolio Sensitivity to Major Macro Factors (01/25/16 - 04/25/16)

-	<-- Correl Bucket [Correl(Ticker,MSELEGF Index D Return)] -->			
Low -ve Correl	**Random**	**Low +ve Correl**	**Mod +ve Correl**	**Strong +ve Correl**
	SMRA IJ -0.12	TLKM IJ 0.28	COLBUN CI 0.50	688 HK 0.76
	OHLMEX* MM 0.01	SCCO US 0.32	SRCM IN 0.51	
	CHMF RM 0.02	GRUPOSUR CB 0.34	MSS IN 0.53	
	IDEA IN 0.02	BIDU US 0.34	1114 HK 0.54	
	BHIN IN 0.11	CHILE CI 0.36	KOMB CP 0.54	
	PGAS IJ 0.11	151 HK 0.37	028260 KS 0.56	
	AXIATA MK 0.15	ODPV3 BZ 0.38	NED SJ 0.58	
	HYDR RM 0.16	LPP PW 0.39	MRP SJ 0.59	
	023530 KS 0.17	034020 KS 0.43	1816 HK 0.60	
	ARCLK TI 0.19	SBSP3 BZ 0.44	UPLL IN 0.60	
	128940 KS 0.20	HDFC IN 0.45	MOL HB 0.62	
	ENG PW 0.20	SM PM 0.46	867 HK 0.62	
	KOFL MM 0.21	DTEX3 BZ 0.47	902 HK 0.69	
	047810 KS 0.22	ANDINAB CI 0.48	813 HK 0.69	
	GNP IN 0.24	CSNA3 BZ 0.48	165 HK 0.70	
		CCOLA TI 0.48	2607 HK 0.71	
		PETR3 BZ 0.49		
		2385 TT 0.49		

Correl Bucket	Correl(Ticker,MSELEGF Index D Return)	**Long**	**Short**	**Net**	- Beta wrt MSELEGF Index D Return **Risk-adj Net**
	(0.50)				
Low -ve Correl	(0.25)	0%	0%	0%	0%
Random	0.25	26%	-6%	20%	2%
Low +ve Correl	0.50	18%	-16%	2%	-10%
Mod +ve Correl	0.75	29%	-10%	19%	30%
Strong +ve Correl	1.00	0%	0%	0%	0%
Total		*74%*	*-33%*	*41%*	*21%*



Note: analyis based on ccy-hedged local-market returns