

## Johansen Cointegration Test

Date: 04/13/14 Time: 21:03  
 Sample (adjusted): 1999M04 2013M12  
 Included observations: 177 after adjustments  
 Trend assumption: Linear deterministic trend  
 Series: USDEUR MUSA MEUR YUSA YEUR IUSA IEUR  
 Lags interval (in first differences): 1 to 2

### Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.323566	184.4059	125.6154	0.0000
At most 1 *	0.233497	115.2129	95.75366	0.0012
At most 2	0.129458	68.14559	69.81889	0.0675
At most 3	0.100530	43.60638	47.85613	0.1185
At most 4	0.082207	24.85324	29.79707	0.1668
At most 5	0.042402	9.669578	15.49471	0.3070
At most 6	0.011239	2.000647	3.841466	0.1572

Trace test indicates 2 cointegrating eqn(s) at the 0.05 level

\* denotes rejection of the hypothesis at the 0.05 level

\*\*MacKinnon-Haug-Michelis (1999) p-values

### Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.323566	69.19296	46.23142	0.0000
At most 1 *	0.233497	47.06730	40.07757	0.0070
At most 2	0.129458	24.53921	33.87687	0.4168
At most 3	0.100530	18.75314	27.58434	0.4338
At most 4	0.082207	15.18366	21.13162	0.2762
At most 5	0.042402	7.668930	14.26460	0.4134
At most 6	0.011239	2.000647	3.841466	0.1572

Max-eigenvalue test indicates 2 cointegrating eqn(s) at the 0.05 level

\* denotes rejection of the hypothesis at the 0.05 level

\*\*MacKinnon-Haug-Michelis (1999) p-values

### Unrestricted Cointegrating Coefficients (normalized by b'S11\*b=l):

USDEUR	MUSA	MEUR	YUSA	YEUR	IUSA	IEUR
-2.988254	-15.50523	9.018005	44.61807	-37.03222	-34.29706	142.6719
4.150085	5.723809	-39.33845	-26.06960	91.27720	77.19292	-198.1678
2.706124	58.52213	-27.85999	-126.8201	122.3727	113.6317	-0.804657
-1.673654	22.92117	-1.379376	-56.40524	39.91864	145.7202	-87.57417
-15.89439	-33.69274	5.036771	40.74881	8.700123	-48.09625	-73.87739
1.666338	8.293034	-8.854050	-39.06548	59.74875	69.71946	-98.16780
-3.616021	-18.27476	18.61008	-37.83586	45.26262	15.74168	-59.90093

### Unrestricted Adjustment Coefficients (alpha):

	USDEUR	MUSA	MEUR	YUSA	YEUR	IUSA	IEUR
D(USDEUR)	-0.003336	0.000200	0.004590	-0.000141	0.007216	0.000420	0.000525
D(MUSA)	3.07E-05	0.000376	4.43E-05	-6.21E-05	0.000161	-0.000338	-0.000359
D(MEUR)	0.001609	0.001417	0.000182	-0.000147	-0.000104	-4.48E-05	-2.40E-06
D(YUSA)	-0.000697	0.000385	0.000225	5.69E-05	-0.000134	0.000114	-2.44E-05
D(YEUR)	1.64E-05	0.000141	-2.72E-05	0.000318	4.46E-05	-0.000113	4.70E-05
D(IUSA)	-0.000462	0.000323	-0.000523	-0.000157	0.000111	0.000123	1.89E-05
D(IEUR)	8.09E-06	-6.19E-07	-0.000115	0.000271	0.000125	0.000255	-8.84E-06

**1 Cointegrating Equation(s):** Log likelihood 5431.886

### Normalized cointegrating coefficients (standard error in parentheses)

USDEUR	MUSA	MEUR	YUSA	YEUR	IUSA	IEUR
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<b>1.000000</b>	5.188725 (2.29820)	-3.017818 (1.81412)	-14.93115 (5.76084)	12.39260 (6.71054)	11.47729 (7.91394)	-47.74425 (11.1782)
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Adjustment coefficients (standard error in parentheses)

D(USDEUR)	0.009969 (0.00686)
D(MUSA)	-9.16E-05 (0.00092)
D(MEUR)	-0.004808 (0.00090)
D(YUSA)	0.002084 (0.00038)
D(YEUR)	-4.90E-05 (0.00030)
D(IUSA)	0.001380 (0.00046)
D(IEUR)	-2.42E-05 (0.00038)

**2 Cointegrating Equation(s):** Log likelihood 5455.419

Normalized cointegrating coefficients (standard error in parentheses)

USDEUR	MUSA	MEUR	YUSA	YEUR	IUSA	IEUR
<b>1.000000</b>	<b>0.000000</b>	-11.81814 (1.98773)	-3.150247 (3.88306)	25.47017 (6.39333)	21.17915 (6.67790)	-47.75250 (14.1193)
<b>0.000000</b>	<b>1.000000</b>	1.696048 (0.54855)	-2.270481 (1.07159)	-2.520383 (1.76434)	-1.869796 (1.84287)	0.001590 (3.89644)

Adjustment coefficients (standard error in parentheses)

D(USDEUR)	0.010797 (0.01174)	0.052869 (0.03794)
D(MUSA)	0.001467 (0.00156)	0.001675 (0.00505)
D(MEUR)	0.001073 (0.00143)	-0.016835 (0.00463)
D(YUSA)	0.003681 (0.00064)	0.013015 (0.00206)
D(YEUR)	0.000537 (0.00051)	0.000554 (0.00165)
D(IUSA)	0.002719 (0.00077)	0.009009 (0.00250)
D(IEUR)	-2.67E-05 (0.00064)	-0.000129 (0.00208)

**3 Cointegrating Equation(s):** Log likelihood 5467.689

Normalized cointegrating coefficients (standard error in parentheses)

USDEUR	MUSA	MEUR	YUSA	YEUR	IUSA	IEUR
<b>1.000000</b>	<b>0.000000</b>	<b>0.000000</b>	-4.961240 (4.76007)	0.507717 (6.09338)	0.589748 (7.85980)	-63.69385 (13.2779)
<b>0.000000</b>	<b>1.000000</b>	<b>0.000000</b>	-2.010582 (0.32519)	1.062034 (0.41627)	1.085034 (0.53695)	2.289369 (0.90709)
<b>0.000000</b>	<b>0.000000</b>	<b>1.000000</b>	-0.153238 (0.59159)	-2.112215 (0.75729)	-1.742186 (0.97682)	-1.348888 (1.65019)

Adjustment coefficients (standard error in parentheses)

D(USDEUR)	0.023217 (0.01312)	0.321460 (0.13786)	-0.165800 (0.11117)
D(MUSA)	0.001587 (0.00177)	0.004265 (0.01856)	-0.015734 (0.01497)
D(MEUR)	0.001566 (0.00162)	-0.006183 (0.01703)	-0.046309 (0.01373)
D(YUSA)	0.004290 (0.00071)	0.026181 (0.00751)	-0.027698 (0.00606)
D(YEUR)	0.000464 (0.00058)	-0.001037 (0.00607)	-0.004653 (0.00489)

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D(IUSA)	0.001305 (0.00084)	-0.021589 (0.00885)	-0.002294 (0.00714)
D(IEUR)	-0.000338 (0.00073)	-0.006850 (0.00765)	0.003297 (0.00617)

**4 Cointegrating Equation(s):** Log likelihood 5477.066

Normalized cointegrating coefficients (standard error in parentheses)

USDEUR	MUSA	MEUR	YUSA	YEUR	IUSA	IEUR
1.000000	0.000000	0.000000	0.000000	-3.051336 (0.89164)	-30.86955 (7.11459)	1.764893 (10.6793)
0.000000	1.000000	0.000000	0.000000	-0.380301 (0.41283)	-11.66410 (3.29403)	28.81705 (4.94447)
0.000000	0.000000	1.000000	0.000000	-2.222143 (0.08971)	-2.713872 (0.71577)	0.672943 (1.07440)
0.000000	0.000000	0.000000	1.000000	-0.717372 (0.19281)	-6.341017 (1.53845)	13.19403 (2.30927)

Adjustment coefficients (standard error in parentheses)

D(USDEUR)	0.023453 (0.01365)	0.318226 (0.14732)	-0.165605 (0.11122)	-0.728143 (0.33575)
D(MUSA)	0.001691 (0.00184)	0.002841 (0.01983)	-0.015648 (0.01497)	-0.010533 (0.04520)
D(MEUR)	0.001812 (0.00168)	-0.009550 (0.01818)	-0.046106 (0.01372)	0.020045 (0.04143)
D(YUSA)	0.004195 (0.00074)	0.027484 (0.00802)	-0.027776 (0.00605)	-0.072886 (0.01828)
D(YEUR)	-6.92E-05 (0.00058)	0.006263 (0.00628)	-0.005092 (0.00474)	-0.017467 (0.01430)
D(IUSA)	0.001568 (0.00087)	-0.025193 (0.00942)	-0.002077 (0.00711)	0.046153 (0.02148)
D(IEUR)	-0.000792 (0.00075)	-0.000632 (0.00806)	0.002923 (0.00608)	-0.000360 (0.01836)

**5 Cointegrating Equation(s):** Log likelihood 5484.658

Normalized cointegrating coefficients (standard error in parentheses)

USDEUR	MUSA	MEUR	YUSA	YEUR	IUSA	IEUR
1.000000	0.000000	0.000000	0.000000	0.000000	134.2879 (30.5342)	-94.38974 (40.5712)
0.000000	1.000000	0.000000	0.000000	0.000000	8.920164 (2.71812)	16.83289 (3.61162)
0.000000	0.000000	1.000000	0.000000	0.000000	117.5625 (26.7230)	-69.35192 (35.5073)
0.000000	0.000000	0.000000	1.000000	0.000000	32.48763 (7.52715)	-9.412004 (10.0014)
0.000000	0.000000	0.000000	0.000000	1.000000	54.12627 (12.1708)	-31.51231 (16.1715)

Adjustment coefficients (standard error in parentheses)

D(USDEUR)	-0.091249 (0.03730)	0.075083 (0.16064)	-0.129257 (0.10823)	-0.434080 (0.33708)	0.760546 (0.35620)
D(MUSA)	-0.000863 (0.00518)	-0.002573 (0.02232)	-0.014839 (0.01504)	-0.003986 (0.04684)	0.037486 (0.04950)
D(MEUR)	0.003458 (0.00475)	-0.006061 (0.02047)	-0.046628 (0.01379)	0.015825 (0.04295)	0.085277 (0.04539)
D(YUSA)	0.006328 (0.00209)	0.032007 (0.00900)	-0.028452 (0.00606)	-0.078355 (0.01889)	0.089589 (0.01996)
D(YEUR)	-0.000778 (0.00164)	0.004762 (0.00706)	-0.004868 (0.00476)	-0.015651 (0.01482)	0.022063 (0.01566)
D(IUSA)	-0.000192 (0.00246)	-0.028922 (0.01060)	-0.001519 (0.00714)	0.050664 (0.02223)	-0.022734 (0.02349)
D(IEUR)	-0.002779 (0.00210)	-0.004845 (0.00904)	0.003552 (0.00609)	0.004735 (0.01898)	-0.002492 (0.02006)

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6 Cointegrating Equation(s):      Log likelihood      5488.492

Normalized cointegrating coefficients (standard error in parentheses)

USDEUR	MUSA	MEUR	YUSA	YEUR	IUSA	IEUR
1.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.272464 (4.08844)
0.000000	1.000000	0.000000	0.000000	0.000000	0.000000	23.18732 (1.73912)
0.000000	0.000000	1.000000	0.000000	0.000000	0.000000	14.39566 (3.49930)
0.000000	0.000000	0.000000	1.000000	0.000000	0.000000	13.73110 (1.46581)
0.000000	0.000000	0.000000	0.000000	1.000000	0.000000	7.045443 (1.67812)
0.000000	0.000000	0.000000	0.000000	0.000000	1.000000	-0.712367 (0.19895)

Adjustment coefficients (standard error in parentheses)

D(USDEUR)	-0.090549 (0.03747)	0.078565 (0.16165)	-0.132975 (0.10994)	-0.450482 (0.34778)	0.785634 (0.37952)	0.312971 (0.48300)
D(MUSA)	-0.001425 (0.00519)	-0.005372 (0.02238)	-0.011850 (0.01522)	0.009202 (0.04815)	0.017316 (0.05254)	-0.007343 (0.06687)
D(MEUR)	0.003383 (0.00477)	-0.006432 (0.02060)	-0.046231 (0.01401)	0.017574 (0.04431)	0.082602 (0.04836)	0.055346 (0.06154)
D(YUSA)	0.006519 (0.00209)	0.032955 (0.00903)	-0.029464 (0.00614)	-0.082821 (0.01944)	0.096419 (0.02121)	0.101905 (0.02699)
D(YEUR)	-0.000966 (0.00164)	0.003823 (0.00708)	-0.003865 (0.00481)	-0.011228 (0.01523)	0.015298 (0.01662)	0.043625 (0.02115)
D(IUSA)	1.36E-05 (0.00247)	-0.027901 (0.01064)	-0.002609 (0.00724)	0.045855 (0.02289)	-0.015380 (0.02498)	-0.038311 (0.03179)
D(IEUR)	-0.002355 (0.00208)	-0.002733 (0.00898)	0.001298 (0.00611)	-0.005213 (0.01932)	0.012722 (0.02109)	0.037895 (0.02684)