

FACTOR MODEL FORECASTS OF EXCHANGE RATES

Charles Engel
Nelson C. Mark
Kenneth D. West

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Appendix A: Additional Empirical Results

This Appendix includes four tables.

Table A.1A: two factor ($r=2$) results with the UK pound as base currency. The formatting and interpretation of this table are identical to that of Table 3 in the paper. The difference is that the UK pound rather than the US dollar is the base currency. As in Table 3 in the paper, the estimation method is maximum likelihood.

Table A.1B: Results for $\hat{F}_{it}-s_{it}$, varying number of factors r , UK pound as base currency. The formatting and interpretation of this table are identical to that of Table 4 in the paper. The difference is that the UK pound rather than the US dollar is the base currency. As in Table 4 in the paper, the estimation method is maximum likelihood.

Table A.2A: two factor ($r=2$) results, when estimation is by principal components. The formatting and interpretation of this table are identical to that of Table 3 in the paper. The difference is that estimation is by principal components rather than maximum likelihood. As in Table 3 in the paper, the US is the base currency.

Table A.2B: Results for $\hat{F}_{it}-s_{it}$, varying number of factors r , when estimation is by principal components. The formatting and interpretation of this table are identical to that of Table 4 in the paper. The difference is that estimation is by principal components rather than maximum likelihood. As in Table 4 in the paper, the US is the base currency.

Table A.1: Results with UK Pound as Base Currency

A. Two Factor (r=2) Results

<u>Model</u>	<u>Sample/ No.</u> <u>Currencies</u>	<u>Statistic</u>	<u>Horizon h</u>			
			<u>1</u>	<u>4</u>	<u>8</u>	<u>12</u>
$\hat{F}_{it-s_{it}}$	long / N=9	median U #U<1 or (t>1.282)	1.005 3(1)	1.019 2(1)	1.034 2(0)	1.042 1(0)
$\hat{F}_{it-s_{it}}$ + Taylor	long / N=9	median U #U<1 or (t>1.282)	1.006 2(1)	1.036 1(1)	1.044 1(0)	1.043 1(0)
$\hat{F}_{it-s_{it}}$ + Monetary	long / N=9	median U #U<1 or (t>1.282)	1.014 2(0)	1.084 2(0)	1.230 2(0)	1.400 2(0)
$\hat{F}_{it-s_{it}}$ + PPP	long / N=9	median U #U<1 or (t>1.282)	1.002 4(1)	1.024 3(1)	1.031 3(1)	1.105 4(1)
$\hat{F}_{it-s_{it}}$	early / N=17	median U #U<1 or (t>1.282)	1.005 6(1)	1.016 6(1)	1.057 4(2)	1.077 4(0)
$\hat{F}_{it-s_{it}}$ + Taylor	early / N=17	median U #U<1 or (t>1.282)	1.006 6(1)	1.033 4(1)	1.064 4(1)	1.100 3(0)
$\hat{F}_{it-s_{it}}$ + Monetary	early / N=17	median U #U<1 or (t>1.282)	1.006 5(2)	1.044 7(3)	1.158 6(2)	1.284 3(1)
$\hat{F}_{it-s_{it}}$ + PPP	early / N=17	median U #U<1 or (t>1.282)	0.998 10(3)	0.989 10(3)	1.016 8(3)	1.057 6(2)
$\hat{F}_{it-s_{it}}$	late / N=10	median U #U<1 or (t>1.282)	1.004 4(0)	1.001 5(0)	0.959 6(0)	0.876 7(0)
$\hat{F}_{it-s_{it}}$ + Taylor	late / N=10	median U #U<1 or (t>1.282)	1.001 4(1)	0.993 6(0)	0.968 6(0)	0.853 7(1)
$\hat{F}_{it-s_{it}}$ + Monetary	late / N=10	median U #U<1 or (t>1.282)	1.025 1(0)	1.240 0(0)	1.671 0(0)	1.940 1(0)
$\hat{F}_{it-s_{it}}$ + PPP	late / N=10	median U #U<1 or (t>1.282)	1.006 3(0)	1.075 1(0)	1.189 1(0)	1.258 1(0)

Table A.1: Results with UK Pound as Base Currency (continued)

B. Results for $\hat{F}_{it-s_{it}}$ Varying Number of Factors r

<u>No. of Factors (r)</u>	<u>Sample/ No. Currencies</u>	<u>Statistic</u>	<u>Horizon h</u>			
			<u>1</u>	<u>4</u>	<u>8</u>	<u>12</u>
1	long / N=9	median U	1.009	1.033	1.062	1.107
		#U<1 or (t>1.282)	0(0)	0(0)	0(0)	0(0)
2	long / N=9	median U	1.005	1.019	1.034	1.042
		#U<1 or (t>1.282)	3(1)	2(1)	2(0)	1(0)
3	long / N=9	median U	1.002	1.017	1.082	1.096
		#U<1 or (t>1.282)	3(2)	2(1)	0(0)	0(0)
1	early / N=17	median U	1.006	1.036	1.051	1.074
		#U<1 or (t>1.282)	1(0)	2(0)	2(0)	5(0)
2	early / N=17	median U	1.005	1.016	1.057	1.077
		#U<1 or (t>1.282)	6(1)	6(1)	4(2)	4(0)
3	early / N=17	median U	1.001	1.014	1.056	1.088
		#U<1 or (t>1.282)	8(3)	5(3)	6(2)	3(1)
1	late / N=10	median U	1.007	1.041	1.101	1.214
		#U<1 or (t>1.282)	1(0)	0(0)	0(0)	1(0)
2	late / N=10	median U	1.004	1.001	0.959	0.876
		#U<1 or (t>1.282)	4(0)	5(0)	6(0)	7(0)
3	late / N=10	median U	1.001	1.060	1.164	1.195
		#U<1 or (t>1.282)	4(0)	3(0)	3(0)	4(0)

Table A.2: Results with Principal Components Estimation

A. Two Factor (r=2) Results

<u>Model</u>	<u>Sample/ No.</u> <u>Currencies</u>	<u>Statistic</u>	<u>Horizon h</u>			
			<u>1</u>	<u>4</u>	<u>8</u>	<u>12</u>
$\hat{F}_{it}-s_{it}$	long / N=9	median U #U<1 or (t>1.282)	1.018 4(2)	1.046 3(2)	1.045 3(2)	1.064 1(1)
$\hat{F}_{it}-s_{it}$ + Taylor	long / N=9	median U #U<1 or (t>1.282)	1.018 3(2)	1.069 2(2)	1.128 0(1)	1.094 1(1)
$\hat{F}_{it}-s_{it}$ + Monetary	long / N=9	median U #U<1 or (t>1.282)	1.017 4(3)	1.107 3(3)	1.280 3(2)	1.514 3(2)
$\hat{F}_{it}-s_{it}$ + PPP	long / N=9	median U #U<1 or (t>1.282)	1.004 4(2)	0.994 6(3)	0.959 5(4)	0.940 5(4)
$\hat{F}_{it}-s_{it}$	early / N=17	median U #U<1 or (t>1.282)	1.011 4(2)	1.046 4(3)	1.011 7(4)	1.020 8(2)
$\hat{F}_{it}-s_{it}$ + Taylor	early / N=17	median U #U<1 or (t>1.282)	1.021 5(2)	1.082 3(1)	1.049 6(3)	1.004 8(2)
$\hat{F}_{it}-s_{it}$ + Monetary	early / N=17	median U #U<1 or (t>1.282)	1.006 7(5)	1.014 7(5)	1.086 5(5)	1.211 5(5)
$\hat{F}_{it}-s_{it}$ + PPP	early / N=17	median U #U<1 or (t>1.282)	1.003 5(2)	0.975 10(3)	0.993 10(3)	1.075 5(1)
$\hat{F}_{it}-s_{it}$	late / N=10	median U #U<1 or (t>1.282)	1.024 3(3)	1.047 3(3)	1.059 2(1)	1.172 2(1)
$\hat{F}_{it}-s_{it}$ + Taylor	late / N=10	median U #U<1 or (t>1.282)	1.022 3(2)	1.062 3(2)	1.112 2(1)	1.185 2(1)
$\hat{F}_{it}-s_{it}$ + Monetary	late / N=10	median U #U<1 or (t>1.282)	1.006 4(2)	1.021 4(2)	1.122 4(2)	1.384 2(2)
$\hat{F}_{it}-s_{it}$ + PPP	late / N=10	median U #U<1 or (t>1.282)	1.018 3(3)	1.022 3(3)	0.918 7(2)	0.763 9(4)

Table A. 2: Results with Principal Components Estimation (continued)**B. Results for $\hat{F}_{it-s_{it}}$ Varying Number of Factors r**

<u>No. of Factors (r)</u>	<u>Sample/ No. Currencies</u>	<u>Statistic</u>	<u>Horizon h</u>			
			<u>1</u>	<u>4</u>	<u>8</u>	<u>12</u>
1	long / N=9	median U #U<1 or (t>1.282)	1.010 1(1)	1.053 3(1)	1.116 2(1)	1.102 2(0)
2	long / N=9	median U #U<1 or (t>1.282)	1.018 4(2)	1.046 3(2)	1.045 3(2)	1.064 1(1)
3	long / N=9	median U #U<1 or (t>1.282)	1.004 2(0)	1.045 2(1)	1.085 1(1)	1.087 0(0)
1	early / N=17	median U #U<1 or (t>1.282)	1.007 5(2)	1.013 6(3)	1.035 8(3)	1.110 7(2)
2	early / N=17	median U #U<1 or (t>1.282)	1.011 4(2)	1.046 4(3)	1.011 7(4)	1.020 8(2)
3	early / N=17	median U #U<1 or (t>1.282)	1.015 4(1)	1.061 4(1)	1.084 5(0)	1.049 6(0)
1	late / N=10	median U #U<1 or (t>1.282)	1.026 1(1)	1.064 1(0)	1.070 3(0)	1.143 2(1)
2	late / N=10	median U #U<1 or (t>1.282)	1.024 3(3)	1.047 3(3)	1.059 2(1)	1.172 2(1)
3	late / N=10	median U #U<1 or (t>1.282)	1.020 2(1)	1.078 2(2)	1.120 3(0)	1.166 1(0)

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Appendix B: Individual Currency Results

This Appendix presents the individual currency U-statistics and t-statistics that are summarized in Tables 3 and 4 in the paper. Thus the base currency is the U.S. dollar, and the estimation technique is maximum likelihood.

There are 12 tables. Each table has three panels, presenting results for the long, early and late samples. In addition individual currency results, each panel presents the p-value for the maximum t-statistic, computed using the Hubrich and West (2009) procedure.

The following country mnemonics are used in the Tables:

AUS = Australia, CAN=Canada, DEN=Denmark, GBR=United Kingdom, JPN=Japan,
KOR=South Korea, NOR= Norway, SWE=Sweden, CHE= Switzerland, AUT=Austria,
BEL=Belgium, FRA=France, GER=Germany, ESP=Spain, ITA=Italy, FIN=Finland,
NET=Netherlands, EUR=Euro

Tables B1-B3: Results using $\hat{F}_{it}-s_{it}$, for $r=1$ (Table B1), $r=2$ (Table B2) and $r=3$ (Table B3) factors

Tables B4-B6: Results using $\hat{F}_{it}-s_{it} + \text{Taylor}$, for $r=1$ (Table B4), $r=2$ (Table B5) and $r=3$ (Table B6) factors

Tables B7-B9: Results using $\hat{F}_{it}-s_{it} + \text{Monetary}$, for $r=1$ (Table B7), $r=2$ (Table B8) and $r=3$ (Table B9) factors

Tables B10-B12: Results using $\hat{F}_{it}-s_{it} + \text{PPP}$, for $r=1$ (Table B10), $r=2$ (Table B11) and $r=3$ (Table B12) factors

Table B1: $\hat{F}_{it}-s_{it}$, one factor ($r=1$)Table B1–Long Sample

	U(1)	U(4)	U(8)	U(12)	t(1)	t(4)	t(8)	t(12)
AUS	1.033	1.104	1.193	1.276	-0.620	-0.684	-0.627	-0.587
CAN	1.014	1.056	1.115	1.197	-0.457	-0.541	-0.809	-1.129
DEN	0.999	0.986	1.000	1.123	0.515	0.857	0.671	-0.389
GBR	1.014	1.037	1.083	1.131	-0.814	-0.225	-0.067	0.031
JPN	1.011	1.072	1.170	1.227	0.244	0.184	0.147	0.414
KOR	1.015	1.064	1.122	1.197	-0.362	-0.299	-0.284	-0.251
NOR	1.003	1.002	1.046	1.154	-0.053	0.268	0.024	-0.389
SWE	1.007	1.019	1.055	1.128	0.021	0.156	0.147	0.044
CHE	1.003	1.011	1.041	1.112	0.390	0.428	0.430	0.303
max t-stat					0.515	0.857	0.671	0.414
p-value					0.910	0.748	0.844	0.930

Table B1–Early Sample

	U(1)	U(4)	U(8)	U(12)	t(1)	t(4)	t(8)	t(12)
AUS	1.031	1.100	1.104	1.031	-0.268	-0.192	0.262	0.644
CAN	1.008	1.021	1.009	1.040	0.065	0.157	0.626	0.586
DEN	0.993	0.945	0.912	1.119	1.424	1.751	1.482	0.195
GBR	1.011	1.011	1.005	1.016	-0.476	0.176	0.446	0.668
JPN	1.006	1.043	1.142	1.190	0.398	0.358	0.187	0.335
KOR	1.007	1.024	1.036	1.017	-0.066	0.023	0.091	0.309
NOR	0.995	0.932	0.866	0.969	0.953	1.301	1.110	0.650
SWE	0.996	0.958	0.874	0.860	0.748	0.938	1.025	0.897
CHE	1.009	1.048	1.175	1.367	0.089	0.103	-0.043	-0.138
AUT	0.996	0.971	1.011	1.203	0.592	0.622	0.438	0.042
BEL	0.989	0.941	0.938	1.129	1.564	1.576	1.083	0.102
FRA	0.996	0.957	0.941	1.128	0.761	1.078	0.866	0.117
GER	0.995	0.968	1.008	1.200	0.593	0.637	0.442	0.046
ESP	1.005	1.006	0.977	1.029	0.448	0.570	0.787	0.662
ITA	1.000	0.969	0.862	0.851	0.680	0.839	1.075	0.987
FIN	0.987	0.960	0.995	1.103	1.344	1.244	0.554	-0.103
NET	0.993	0.955	0.982	1.180	0.753	0.790	0.554	0.067
max t-stat					1.564	1.751	1.482	0.987
p-value					0.558	0.489	0.608	0.835

Table B1–Late Sample

	U(1)	U(4)	U(8)	U(12)	t(1)	t(4)	t(8)	t(12)
AUS	1.034	1.107	1.243	1.437	-0.596	-0.719	-1.041	-1.288
CAN	1.017	1.076	1.170	1.274	-0.598	-0.660	-0.972	-1.291
DEN	1.011	1.041	1.072	1.127	-0.986	-1.050	-0.789	-1.002
GBR	1.026	1.087	1.167	1.242	-0.969	-1.076	-1.132	-1.278
JPN	1.025	1.157	1.275	1.442	-0.208	-0.338	-0.072	0.179
KOR	1.072	1.275	1.538	1.807	-0.775	-0.711	-0.750	-0.901
NOR	1.017	1.075	1.187	1.315	-0.883	-0.929	-1.088	-1.113
SWE	1.029	1.103	1.222	1.465	-0.676	-0.840	-0.984	-1.175
CHE	0.986	0.923	0.788	0.656	0.851	0.930	1.171	1.362
EUR	1.013	1.054	1.104	1.175	-0.904	-1.002	-0.941	-1.115
max t-stat					0.851	0.930	1.171	1.362
p-value					0.731	0.679	0.532	0.447

Table B2: $\hat{F}_{it}-s_{it}$ two factors ($r=2$)Table B2–Long Sample

	U(1)	U(4)	U(8)	U(12)	t(1)	t(4)	t(8)	t(12)
AUS	1.015	1.033	1.056	1.108	-1.886	-2.296	-1.012	-0.719
CAN	0.996	0.999	1.099	1.241	0.887	0.989	0.955	0.494
DEN	1.002	0.990	0.944	0.930	0.042	0.591	0.944	0.934
GBR	1.007	1.012	0.982	0.922	-0.252	0.227	0.773	1.039
JPN	1.008	1.051	1.085	1.160	-0.850	-1.338	-0.733	-0.577
KOR	1.013	1.040	1.068	1.126	-1.512	-1.906	-2.110	-1.475
NOR	1.002	0.986	0.928	0.901	0.024	0.657	0.966	0.902
SWE	1.003	1.008	0.978	0.928	-0.390	-0.109	0.644	0.937
CHE	1.000	0.997	1.056	1.244	0.064	0.305	0.322	0.052
max t-stat					0.887	0.989	0.966	1.039
p-value					0.761	0.673	0.636	0.591

Table B2–Early Sample

	U(1)	U(4)	U(8)	U(12)	t(1)	t(4)	t(8)	t(12)
AUS	1.020	1.040	1.120	1.260	-1.383	-1.267	-0.828	-0.903
CAN	1.020	1.086	1.431	1.830	-0.434	0.200	-0.054	-0.743
DEN	0.999	0.979	1.003	1.119	0.311	0.579	0.309	0.006
GBR	1.006	1.012	1.025	1.089	-0.208	0.104	0.211	0.116
JPN	1.006	1.043	1.088	1.178	-0.737	-1.317	-0.767	-0.659
KOR	1.009	1.023	1.049	1.111	-0.987	-1.184	-1.549	-0.937
NOR	1.004	0.997	1.031	1.115	-0.452	0.249	0.082	-0.246
SWE	1.001	0.994	0.972	0.971	0.065	0.322	0.448	0.366
CHE	1.003	1.014	1.145	1.474	-1.087	-0.026	0.077	-0.096
AUT	0.999	1.013	1.237	1.478	0.266	0.237	0.100	0.007
BEL	0.997	0.981	1.050	1.195	0.568	0.534	0.230	0.000
FRA	1.001	0.990	1.042	1.164	0.053	0.360	0.104	-0.228
GER	1.000	1.011	1.221	1.461	0.187	0.249	0.115	0.014
ESP	1.007	1.006	0.979	1.005	-0.027	0.268	0.502	0.337
ITA	0.999	0.972	0.911	0.901	0.505	0.666	0.793	0.752
FIN	0.987	0.958	0.954	0.973	1.233	1.118	0.757	0.440
NET	0.998	1.001	1.180	1.392	0.392	0.336	0.155	0.046
max t-stat					1.233	1.118	0.793	0.752
p-value					0.674	0.678	0.840	0.843

Table B2–Late Sample

	U(1)	U(4)	U(8)	U(12)	t(1)	t(4)	t(8)	t(12)
AUS	1.010	1.027	1.016	0.976	-1.355	-2.223	-0.540	0.732
CAN	0.985	0.944	0.859	0.751	1.457	1.135	1.191	1.285
DEN	1.009	1.006	0.889	0.684	-0.185	0.252	0.936	1.332
GBR	1.009	1.013	0.929	0.703	-0.164	0.281	0.880	1.231
JPN	1.012	1.074	1.075	1.034	-0.460	-0.570	-0.115	0.205
KOR	1.039	1.137	1.174	1.195	-1.633	-1.728	-1.360	-1.510
NOR	0.998	0.974	0.821	0.610	0.370	0.609	1.010	1.009
SWE	1.008	1.029	0.985	0.854	-1.286	-1.011	0.419	1.129
CHE	0.994	0.959	0.899	0.862	0.618	0.786	1.030	1.366
EUR	1.009	1.015	0.939	0.816	-0.623	-0.059	0.778	1.232
max t-stat					1.457	1.135	1.191	1.366
p-value					0.502	0.617	0.492	0.422

Table B3: \hat{F}_{it}^r - s_{it}^r three factors ($r=3$)Table B3–Long Sample

	U(1)	U(4)	U(8)	U(12)	t(1)	t(4)	t(8)	t(12)
AUS	1.009	1.012	1.042	1.133	-1.291	-0.495	-0.103	-0.313
CAN	0.993	0.979	1.030	1.104	1.084	1.257	1.328	1.115
DEN	1.003	0.996	0.950	0.939	-0.082	0.525	1.003	0.980
GBR	1.003	0.996	0.979	0.969	0.058	0.529	0.883	1.035
JPN	1.008	1.055	1.110	1.225	-1.621	-1.441	-0.582	-0.458
KOR	1.010	1.025	1.027	1.038	-0.937	-0.775	-0.761	-0.845
NOR	0.998	0.971	0.904	0.904	0.521	1.029	1.183	0.980
SWE	1.001	1.002	0.976	0.943	-0.070	0.137	0.751	0.892
CHE	0.998	0.984	0.996	1.145	0.622	0.611	0.601	0.172
max t-stat					1.084	1.257	1.328	1.115
p-value					0.640	0.504	0.465	0.559

Table B3–Early Sample

	U(1)	U(4)	U(8)	U(12)	t(1)	t(4)	t(8)	t(12)
AUS	1.011	1.014	1.133	1.355	-0.882	-0.114	-0.259	-0.585
CAN	1.016	1.013	1.221	1.532	-0.262	0.762	0.739	-0.155
DEN	0.999	0.977	0.958	1.044	0.340	0.647	0.595	0.348
GBR	1.000	0.980	0.996	1.139	0.233	0.558	0.482	0.289
JPN	1.008	1.051	1.120	1.253	-2.181	-1.182	-0.475	-0.420
KOR	1.006	1.009	1.008	1.027	-0.490	-0.131	-0.186	-1.114
NOR	0.999	0.974	1.000	1.130	0.293	0.862	0.543	-0.226
SWE	0.999	0.987	0.979	1.019	0.315	0.497	0.470	0.122
CHE	1.000	0.995	1.056	1.329	0.224	0.248	0.256	-0.054
AUT	0.999	1.016	1.240	1.488	0.273	0.231	0.109	0.017
BEL	0.993	0.953	0.937	1.040	1.182	1.055	0.770	0.394
FRA	0.997	0.963	0.923	0.997	0.527	0.898	0.759	0.388
GER	1.000	1.013	1.220	1.465	0.212	0.252	0.138	0.033
ESP	1.007	1.006	0.979	0.992	-0.017	0.274	0.483	0.372
ITA	1.001	0.981	0.942	0.928	0.430	0.579	0.621	0.562
FIN	0.984	0.961	0.989	1.053	1.339	0.982	0.444	0.162
NET	0.999	1.008	1.197	1.420	0.341	0.315	0.181	0.081
max t-stat					1.339	1.055	0.770	0.562
p-value					0.616	0.707	0.888	0.931

Table B3–Late Sample

	U(1)	U(4)	U(8)	U(12)	t(1)	t(4)	t(8)	t(12)
AUS	1.007	1.011	0.984	0.927	-1.002	-1.503	0.681	1.144
CAN	0.982	0.959	0.906	0.781	1.343	0.999	1.080	1.254
DEN	1.012	1.022	0.942	0.817	-0.524	-0.034	0.753	1.241
GBR	1.013	1.029	0.959	0.747	-0.452	0.055	0.760	1.180
JPN	1.010	1.066	1.066	1.023	-0.494	-0.744	-0.241	0.135
KOR	1.034	1.115	1.131	1.091	-2.020	-2.090	-0.902	-0.259
NOR	0.996	0.966	0.807	0.591	0.430	0.671	1.027	1.020
SWE	1.007	1.024	0.972	0.804	-0.775	-0.506	0.568	1.175
CHE	0.994	0.959	0.894	0.852	0.599	0.767	1.027	1.366
EUR	1.010	1.018	0.946	0.827	-0.659	-0.102	0.735	1.206
max t-stat					1.343	0.999	1.080	1.366
p-value					0.550	0.700	0.495	0.378

Table B4: $\hat{F}_{it}-s_{it}$ + Taylor, one factor ($r=1$)Table B4–Long Sample

	U(1)	U(4)	U(8)	U(12)	t(1)	t(4)	t(8)	t(12)
AUS	1.042	1.146	1.271	1.286	-1.007	-1.238	-1.114	-0.690
CAN	1.013	1.082	1.221	1.230	-0.312	-0.656	-1.293	-1.347
DEN	1.012	1.048	1.048	1.142	-0.670	-0.435	0.286	-0.490
GBR	1.016	1.057	1.111	1.132	-1.568	-1.153	-0.943	-0.120
JPN	1.005	1.058	1.222	1.238	0.634	0.524	0.169	0.390
KOR	1.018	1.076	1.147	1.203	-0.508	-0.402	-0.353	-0.299
NOR	1.017	1.067	1.135	1.167	-1.269	-0.766	-0.573	-0.494
SWE	1.014	1.067	1.113	1.138	-0.540	-0.750	-0.283	-0.026
CHE	1.004	1.016	1.026	1.126	0.231	0.295	0.469	0.256
max t-stat					0.634	0.524	0.469	0.390
p-value					0.859	0.895	0.909	0.938

Table B4–Early Sample

	U(1)	U(4)	U(8)	U(12)	t(1)	t(4)	t(8)	t(12)
AUS	1.048	1.156	1.169	1.009	-0.954	-0.973	-0.126	0.674
CAN	1.001	1.030	1.120	1.076	0.227	-0.236	-1.686	-0.012
DEN	1.008	1.016	0.902	1.132	-0.203	0.261	1.124	0.179
GBR	1.013	1.034	1.023	1.007	-1.178	-0.461	0.237	0.678
JPN	0.999	1.025	1.201	1.202	0.748	0.653	0.229	0.316
KOR	1.010	1.042	1.044	1.015	-0.293	-0.266	0.020	0.294
NOR	1.011	1.008	0.949	0.976	-0.703	0.245	0.730	0.566
SWE	1.004	1.019	0.920	0.854	0.094	0.012	0.616	0.861
CHE	1.010	1.052	1.127	1.378	-0.084	-0.049	0.022	-0.179
AUT	1.005	0.990	0.962	1.205	0.065	0.501	0.777	0.044
BEL	0.995	0.950	0.889	1.127	0.708	1.158	1.440	0.145
FRA	1.005	1.002	0.970	1.132	-0.513	0.275	0.751	0.066
GER	1.005	0.990	0.952	1.213	-0.040	0.495	0.856	0.045
ESP	1.015	1.028	0.932	1.017	-0.192	0.196	1.000	0.651
ITA	1.006	0.988	0.865	0.862	0.303	0.605	1.126	0.965
FIN	1.001	1.027	1.065	1.111	0.264	-0.374	-0.464	-0.263
NET	1.006	0.997	1.012	1.214	-0.050	0.411	0.596	0.023
max t-stat					0.748	1.158	1.440	0.965
p-value					0.893	0.736	0.650	0.846

Table B4–Late Sample

	U(1)	U(4)	U(8)	U(12)	t(1)	t(4)	t(8)	t(12)
AUS	1.036	1.138	1.327	1.464	-0.525	-0.799	-1.196	-1.312
CAN	1.019	1.111	1.273	1.305	-0.466	-0.608	-1.009	-1.315
DEN	1.018	1.092	1.162	1.151	-1.495	-1.813	-1.575	-1.111
GBR	1.027	1.103	1.206	1.250	-1.072	-1.354	-1.479	-1.325
JPN	1.021	1.149	1.298	1.451	-0.107	-0.327	-0.155	0.165
KOR	1.070	1.261	1.630	1.835	-0.540	-0.295	-0.583	-0.886
NOR	1.025	1.127	1.281	1.334	-1.082	-1.228	-1.308	-1.135
SWE	1.034	1.133	1.291	1.489	-0.735	-0.966	-1.130	-1.192
CHE	0.986	0.929	0.844	0.678	0.920	1.135	1.341	1.353
EUR	1.017	1.083	1.174	1.196	-0.940	-1.108	-1.220	-1.171
max t-stat					0.920	1.135	1.341	1.353
p-value					0.646	0.531	0.455	0.455

Table B5: $\hat{F}_{it}-s_{it}$ + Taylor, two factors ($r=2$)Table B5–Long Sample

	U(1)	U(4)	U(8)	U(12)	t(1)	t(4)	t(8)	t(12)
AUS	1.024	1.078	1.156	1.129	-2.551	-2.509	-1.417	-0.645
CAN	0.997	1.047	1.259	1.304	1.152	0.845	0.425	0.353
DEN	1.013	1.040	0.947	0.907	-0.806	-0.270	1.059	1.071
GBR	1.010	1.041	1.063	0.943	-0.814	-0.366	0.440	1.022
JPN	1.000	1.015	1.089	1.171	0.312	0.072	-0.595	-0.715
KOR	1.016	1.053	1.092	1.144	-1.871	-2.193	-1.678	-1.526
NOR	1.015	1.052	1.027	0.920	-1.396	-0.481	0.500	0.841
SWE	1.010	1.056	1.038	0.919	-1.440	-1.508	-0.046	0.922
CHE	1.005	1.039	1.138	1.287	-0.647	-0.155	0.169	0.018
max t-stat					1.152	0.845	1.059	1.071
p-value					0.601	0.788	0.609	0.575

Table B4–Early Sample

	U(1)	U(4)	U(8)	U(12)	t(1)	t(4)	t(8)	t(12)
AUS	1.038	1.123	1.293	1.300	-2.409	-1.816	-0.890	-0.762
CAN	1.025	1.194	1.730	1.951	0.184	0.220	-0.356	-0.825
DEN	1.012	1.040	0.943	1.075	-0.619	-0.148	0.825	0.106
GBR	1.009	1.048	1.129	1.117	-0.791	-0.562	-0.277	0.036
JPN	0.997	0.996	1.086	1.189	0.525	0.362	-0.484	-0.812
KOR	1.013	1.046	1.079	1.132	-1.489	-2.479	-1.248	-0.991
NOR	1.022	1.088	1.150	1.142	-1.693	-0.673	-0.230	-0.303
SWE	1.010	1.064	1.056	0.957	-0.873	-0.936	-0.009	0.395
CHE	1.008	1.067	1.242	1.541	-1.158	-0.276	0.076	-0.113
AUT	1.012	1.077	1.331	1.530	-0.665	-0.054	0.101	-0.002
BEL	1.002	0.992	1.001	1.181	-0.142	0.382	0.387	0.022
FRA	1.008	1.032	1.069	1.156	-1.272	-0.335	-0.011	-0.242
GER	1.014	1.087	1.326	1.527	-0.626	-0.060	0.139	-0.002
ESP	1.016	1.041	1.003	1.019	-1.413	-0.694	0.558	0.252
ITA	1.005	1.013	1.022	0.946	-0.113	-0.080	0.084	0.712
FIN	1.000	1.027	1.041	0.981	0.152	-0.586	-0.333	0.443
NET	1.014	1.072	1.285	1.446	-0.681	-0.067	0.082	0.024
max t-stat					0.525	0.382	0.825	0.712
p-value					0.961	0.984	0.838	0.855

Table B5–Late Sample

	U(1)	U(4)	U(8)	U(12)	t(1)	t(4)	t(8)	t(12)
AUS	1.010	1.043	1.067	0.978	-1.021	-1.702	-2.091	0.665
CAN	0.984	0.949	0.893	0.751	1.566	1.206	1.198	1.278
DEN	1.014	1.040	0.950	0.695	-0.537	-0.242	0.655	1.317
GBR	1.010	1.027	0.980	0.714	-0.247	0.147	0.737	1.222
JPN	1.010	1.068	1.104	1.048	-0.354	-0.588	-0.272	0.180
KOR	1.036	1.090	1.166	1.199	-1.259	-0.640	-0.992	-1.523
NOR	1.003	1.011	0.901	0.617	0.018	0.138	0.826	1.000
SWE	1.011	1.044	1.018	0.854	-1.942	-2.099	-0.118	1.131
CHE	0.996	0.972	0.955	0.860	0.539	0.903	0.952	1.378
EUR	1.012	1.030	0.978	0.818	-1.025	-0.598	0.491	1.229
max t-stat					1.566	1.206	1.198	1.378
p-value					0.461	0.601	0.550	0.418

Table B6: $\hat{F}_{it}-s_{it} + \text{Taylor, three factors } (r=3)$ Table B6–Long Sample

	U(1)	U(4)	U(8)	U(12)	t(1)	t(4)	t(8)	t(12)
AUS	1.017	1.059	1.148	1.158	-1.975	-1.392	-0.758	-0.315
CAN	0.991	1.007	1.150	1.152	1.321	1.238	1.039	1.019
DEN	1.014	1.043	0.942	0.912	-0.966	-0.441	1.264	1.181
GBR	1.006	1.032	1.091	1.008	-0.405	-0.064	0.453	0.977
JPN	1.001	1.015	1.102	1.229	0.200	-0.049	-0.599	-0.554
KOR	1.013	1.035	1.044	1.052	-1.249	-1.544	-1.618	-1.233
NOR	1.011	1.036	1.003	0.923	-0.926	-0.143	0.735	0.927
SWE	1.008	1.051	1.037	0.935	-1.167	-1.315	0.052	0.915
CHE	1.002	1.021	1.068	1.181	-0.151	-0.006	0.327	0.115
max t-stat					1.321	1.238	1.264	1.181
p-value					0.497	0.550	0.519	0.524

Table B6–Early Sample

	U(1)	U(4)	U(8)	U(12)	t(1)	t(4)	t(8)	t(12)
AUS	1.029	1.101	1.315	1.399	-1.912	-0.965	-0.522	-0.533
CAN	1.015	1.092	1.482	1.629	0.252	0.612	0.122	-0.375
DEN	1.012	1.033	0.866	0.988	-0.577	-0.036	1.274	0.497
GBR	1.004	1.027	1.155	1.195	-0.168	-0.013	0.047	0.213
JPN	0.998	0.998	1.103	1.256	0.426	0.312	-0.424	-0.501
KOR	1.010	1.031	1.034	1.043	-0.885	-1.290	-1.094	-2.329
NOR	1.017	1.064	1.117	1.156	-1.233	-0.409	0.002	-0.309
SWE	1.008	1.060	1.068	1.006	-0.693	-0.874	-0.048	0.229
CHE	1.004	1.043	1.138	1.384	-0.616	-0.153	0.194	-0.076
AUT	1.012	1.079	1.329	1.535	-0.630	-0.049	0.109	0.010
BEL	0.999	0.965	0.882	1.024	0.402	0.885	0.942	0.426
FRA	1.005	1.003	0.939	0.979	-0.841	0.186	0.718	0.472
GER	1.014	1.088	1.319	1.526	-0.595	-0.052	0.157	0.018
ESP	1.017	1.041	0.998	1.002	-1.345	-0.674	0.551	0.324
ITA	1.007	1.018	1.034	0.961	-0.181	-0.119	-0.003	0.473
FIN	0.998	1.027	1.063	1.053	0.469	-0.412	-0.399	0.102
NET	1.014	1.078	1.298	1.471	-0.650	-0.059	0.104	0.058
max t-stat					0.469	0.885	1.274	0.497
p-value					0.981	0.818	0.642	0.945

Table B6–Late Sample

	U(1)	U(4)	U(8)	U(12)	t(1)	t(4)	t(8)	t(12)
AUS	1.007	1.027	1.036	0.932	-0.709	-1.272	-1.491	1.080
CAN	0.980	0.954	0.914	0.781	1.438	1.070	1.072	1.251
DEN	1.017	1.057	1.005	0.827	-1.079	-0.828	0.286	1.208
GBR	1.014	1.043	1.012	0.762	-0.551	-0.090	0.600	1.166
JPN	1.008	1.061	1.101	1.038	-0.354	-0.779	-0.466	0.092
KOR	1.029	1.059	1.102	1.094	-1.515	-0.737	-1.305	-0.281
NOR	1.001	1.004	0.888	0.600	0.118	0.253	0.853	1.008
SWE	1.010	1.038	1.003	0.805	-1.417	-1.299	0.223	1.174
CHE	0.996	0.971	0.950	0.854	0.529	0.884	0.992	1.379
EUR	1.012	1.034	0.985	0.830	-1.052	-0.641	0.427	1.200
max t-stat					1.438	1.070	1.072	1.379
p-value					0.524	0.693	0.585	0.374

Table B7: $\hat{F}_{it}-s_{it}$ + Monetary, one factor ($r=1$)Table B7–Long Sample

	U(1)	U(4)	U(8)	U(12)	t(1)	t(4)	t(8)	t(12)
AUS	1.075	1.254	1.492	1.785	0.068	0.271	0.590	0.607
CAN	1.186	1.686	1.998	2.130	-1.339	-1.308	-0.949	-0.613
DEN	1.014	1.087	1.303	1.653	0.070	0.228	0.395	0.291
GBR	1.114	1.566	2.469	3.312	-0.487	-0.231	-0.215	-0.160
JPN	1.018	1.130	1.374	1.936	-0.318	-0.086	0.284	0.102
KOR	1.002	1.022	1.059	1.175	0.703	0.694	0.670	0.501
NOR	1.003	1.016	1.036	1.009	0.029	0.080	0.233	0.721
SWE	0.992	0.940	0.845	0.776	1.352	1.896	2.681	3.216
CHE	0.989	0.942	0.937	1.168	1.426	1.387	1.329	0.716
max t-stat					1.426	1.896	2.681	3.216
p-value					0.450	0.230	0.062	0.025

Table B7–Early Sample

	U(1)	U(4)	U(8)	U(12)	t(1)	t(4)	t(8)	t(12)
AUS	1.037	1.198	1.483	1.728	0.936	0.943	1.157	1.229
CAN	0.958	0.928	1.019	1.215	2.220	2.182	2.174	1.962
DEN	1.029	1.189	1.668	2.159	-0.305	-0.083	0.122	0.129
GBR	1.032	1.191	1.900	2.664	0.377	0.625	0.530	0.623
JPN	1.024	1.174	1.459	1.979	-0.523	-0.271	0.110	0.054
KOR	0.982	0.904	0.766	0.587	1.074	1.021	0.881	0.655
NOR	0.988	0.939	0.912	0.877	2.370	2.079	1.488	1.242
SWE	0.987	0.912	0.793	0.774	1.661	1.708	1.972	2.167
CHE	0.998	0.977	1.000	1.304	0.394	0.674	0.872	0.541
AUT	1.007	1.075	1.354	1.676	-0.121	0.056	0.270	0.271
BEL	1.003	1.012	1.027	1.099	0.502	0.740	1.123	1.182
FRA	0.996	0.968	0.945	1.058	0.866	1.024	1.220	1.053
GER	1.005	1.057	1.240	1.488	0.427	0.446	0.753	0.807
ESP	1.036	1.180	1.503	1.782	0.669	0.791	0.920	0.990
ITA	1.011	1.040	1.181	1.253	0.714	0.816	0.868	0.848
FIN	1.037	1.125	1.323	1.737	0.034	0.460	0.733	0.641
NET	1.006	1.054	1.235	1.504	0.014	0.164	0.422	0.390
max t-stat					2.370	2.182	2.174	2.167
p-value					0.233	0.289	0.294	0.304

Table B7–Late Sample

	U(1)	U(4)	U(8)	U(12)	t(1)	t(4)	t(8)	t(12)
AUS	1.108	1.294	1.498	1.827	-0.836	-0.597	-0.568	-1.037
CAN	1.283	2.005	2.374	2.488	-2.256	-2.204	-2.026	-2.047
DEN	0.983	0.924	0.858	0.873	1.235	1.668	2.467	2.733
GBR	1.371	2.136	3.001	3.883	-1.061	-1.059	-1.042	-1.225
JPN	1.000	0.988	0.977	1.637	0.410	0.713	0.636	0.216
KOR	1.132	1.548	2.074	2.480	-0.699	-0.733	-0.832	-0.910
NOR	1.028	1.095	1.138	1.127	-1.177	-1.109	-0.659	-0.331
SWE	1.004	0.979	0.898	0.778	-0.018	0.684	1.460	1.864
CHE	0.968	0.859	0.828	0.966	1.899	1.940	2.151	1.663
EUR	1.007	1.025	1.042	1.110	-0.072	-0.023	0.073	-0.338
max t-stat					1.899	1.940	2.467	2.733
p-value					0.274	0.262	0.141	0.097

Table B8: $\hat{F}_{it}-s_{it}$ + Monetary, two factors ($r=2$)Table B8–Long Sample

	U(1)	U(4)	U(8)	U(12)	t(1)	t(4)	t(8)	t(12)
AUS	1.050	1.182	1.307	1.580	0.127	0.145	0.508	0.645
CAN	1.114	1.416	1.530	1.657	-1.344	-1.285	-0.742	-0.151
DEN	1.010	1.071	1.202	1.474	0.223	0.300	0.509	0.460
GBR	1.067	1.340	1.896	2.576	-0.122	-0.019	-0.057	0.012
JPN	1.010	1.080	1.224	1.637	-0.117	-0.013	0.295	0.203
KOR	1.003	1.030	1.020	1.035	0.563	0.517	0.665	0.558
NOR	0.996	0.986	0.963	0.906	0.874	0.859	1.008	1.433
SWE	0.989	0.940	0.855	0.788	1.297	1.685	2.449	2.884
CHE	0.987	0.925	0.876	0.911	1.599	1.955	1.714	1.322
max t-stat					1.599	1.955	2.449	2.884
p-value					0.353	0.197	0.083	0.034

Table B8–Early Sample

	U(1)	U(4)	U(8)	U(12)	t(1)	t(4)	t(8)	t(12)
AUS	1.038	1.213	1.393	1.665	0.730	0.597	0.902	1.055
CAN	0.998	1.012	0.882	1.030	1.372	1.467	1.867	1.770
DEN	1.020	1.155	1.525	1.947	-0.036	-0.004	0.102	0.152
GBR	1.013	1.098	1.581	2.309	0.630	0.677	0.505	0.563
JPN	1.015	1.118	1.300	1.693	-0.322	-0.191	0.121	0.133
KOR	0.989	0.954	0.840	0.590	0.945	0.939	0.943	0.695
NOR	0.983	0.931	0.957	0.922	2.320	1.841	1.367	1.638
SWE	0.983	0.910	0.824	0.826	1.358	1.489	1.776	1.941
CHE	0.991	0.938	0.878	0.868	1.017	1.382	1.229	1.053
AUT	0.994	0.994	1.128	1.243	0.869	0.684	0.584	0.667
BEL	0.996	0.986	0.967	0.950	0.829	0.914	1.221	1.379
FRA	0.991	0.943	0.876	0.900	1.131	1.225	1.261	1.146
GER	0.996	1.016	1.116	1.216	0.869	0.760	0.962	1.153
ESP	1.035	1.199	1.443	1.752	0.587	0.608	0.803	0.911
ITA	1.007	1.047	1.159	1.252	0.775	0.768	0.793	0.797
FIN	1.028	1.111	1.224	1.604	0.276	0.518	0.742	0.648
NET	0.994	0.982	1.051	1.122	0.890	0.779	0.714	0.777
max t-stat					2.320	1.841	1.867	1.941
p-value					0.257	0.412	0.377	0.363

Table B8–Late Sample

	U(1)	U(4)	U(8)	U(12)	t(1)	t(4)	t(8)	t(12)
AUS	1.062	1.159	1.253	1.510	-0.732	-0.595	-0.563	-1.036
CAN	1.167	1.608	1.792	1.912	-2.222	-2.214	-2.036	-2.092
DEN	0.991	0.941	0.813	0.721	0.755	1.147	1.675	2.048
GBR	1.244	1.731	2.208	2.830	-1.043	-1.126	-1.060	-1.215
JPN	0.996	0.959	0.871	1.216	0.445	0.819	0.778	0.345
KOR	1.096	1.401	1.742	2.098	-0.638	-0.769	-0.862	-0.938
NOR	1.016	1.042	0.968	0.890	-0.922	-0.497	0.499	0.700
SWE	1.001	0.981	0.887	0.722	0.144	0.647	1.364	1.648
CHE	0.976	0.894	0.872	0.964	1.439	1.404	1.386	1.702
EUR	1.010	1.025	0.989	0.995	-0.240	-0.003	0.578	0.856
max t-stat					1.439	1.404	1.675	2.048
p-value					0.467	0.467	0.363	0.242

Table B9: $\hat{F}_{it}-s_{it}$ + Monetary, three factors ($r=3$)Table B9–Long Sample

	U(1)	U(4)	U(8)	U(12)	t(1)	t(4)	t(8)	t(12)
AUS	1.048	1.167	1.275	1.507	0.121	0.153	0.530	0.658
CAN	1.099	1.359	1.445	1.524	-1.335	-1.281	-0.624	-0.020
DEN	1.009	1.064	1.200	1.456	0.267	0.352	0.510	0.457
GBR	1.065	1.322	1.848	2.473	-0.152	-0.031	-0.064	-0.005
JPN	1.008	1.074	1.224	1.617	-0.039	-0.009	0.276	0.195
KOR	1.001	1.018	0.996	0.992	0.605	0.553	0.687	0.566
NOR	0.996	0.986	0.960	0.907	0.824	0.830	1.007	1.356
SWE	0.989	0.940	0.858	0.785	1.336	1.670	2.365	2.771
CHE	0.987	0.929	0.881	0.941	1.725	1.977	1.651	1.187
max t-stat					1.725	1.977	2.365	2.771
p-value					0.289	0.186	0.103	0.048

Table B9–Early Sample

	U(1)	U(4)	U(8)	U(12)	t(1)	t(4)	t(8)	t(12)
AUS	1.036	1.194	1.345	1.546	0.700	0.576	0.898	1.065
CAN	0.980	0.934	0.790	0.857	1.560	1.641	1.952	1.806
DEN	1.017	1.136	1.495	1.887	0.040	0.079	0.161	0.196
GBR	1.009	1.066	1.472	2.116	0.613	0.686	0.518	0.565
JPN	1.013	1.109	1.296	1.666	-0.245	-0.191	0.107	0.130
KOR	0.988	0.946	0.832	0.586	0.959	0.940	0.926	0.685
NOR	0.984	0.935	0.961	0.938	2.152	1.655	1.221	1.293
SWE	0.983	0.912	0.833	0.833	1.379	1.470	1.734	1.932
CHE	0.991	0.944	0.889	0.929	1.110	1.388	1.156	0.914
AUT	0.994	0.997	1.140	1.276	0.880	0.653	0.557	0.619
BEL	0.995	0.980	0.958	0.949	0.918	0.972	1.245	1.363
FRA	0.991	0.939	0.865	0.891	1.142	1.257	1.299	1.159
GER	0.996	1.012	1.115	1.226	0.906	0.766	0.937	1.103
ESP	1.032	1.176	1.406	1.668	0.562	0.612	0.803	0.913
ITA	1.005	1.030	1.129	1.190	0.776	0.778	0.793	0.801
FIN	1.024	1.097	1.213	1.555	0.309	0.511	0.704	0.616
NET	0.994	0.983	1.059	1.148	0.912	0.783	0.706	0.747
max t-stat					2.152	1.655	1.952	1.932
p-value					0.304	0.479	0.351	0.367

Table B9–Late Sample

	U(1)	U(4)	U(8)	U(12)	t(1)	t(4)	t(8)	t(12)
AUS	1.059	1.148	1.231	1.475	-0.691	-0.538	-0.501	-1.012
CAN	1.153	1.557	1.703	1.783	-2.248	-2.285	-2.085	-2.158
DEN	0.994	0.954	0.857	0.805	0.659	1.040	1.641	2.250
GBR	1.246	1.730	2.207	2.802	-1.036	-1.126	-1.065	-1.217
JPN	0.996	0.962	0.890	1.256	0.438	0.764	0.711	0.299
KOR	1.089	1.370	1.665	1.982	-0.618	-0.784	-0.884	-0.952
NOR	1.016	1.039	0.960	0.874	-0.871	-0.415	0.538	0.738
SWE	1.000	0.980	0.884	0.700	0.215	0.656	1.327	1.600
CHE	0.976	0.894	0.868	0.956	1.441	1.406	1.411	1.758
EUR	1.010	1.027	0.993	0.996	-0.244	-0.019	0.547	0.841
max t-stat					1.441	1.406	1.641	2.250
p-value					0.462	0.465	0.366	0.185

Table B10: $\hat{F}_{it} - s_{it} + \text{PPP}$, three factors ($r=3$)Table B10–Long Sample

	U(1)	U(4)	U(8)	U(12)	t(1)	t(4)	t(8)	t(12)
AUS	1.017	1.004	0.925	0.834	-0.410	0.589	1.546	1.611
CAN	1.013	1.045	1.051	1.031	-0.479	0.005	0.701	1.098
DEN	1.007	1.011	1.046	1.235	-0.416	0.317	0.629	0.329
GBR	1.027	1.096	1.242	1.456	-0.689	-0.017	0.308	0.314
JPN	1.002	0.998	0.959	1.125	0.439	0.602	1.153	0.732
KOR	0.995	0.960	0.872	0.821	1.069	1.263	1.301	1.033
NOR	1.004	0.999	1.000	1.072	-0.189	0.449	0.665	0.597
SWE	0.993	0.950	0.857	0.810	0.797	1.086	1.290	1.191
CHE	0.998	0.958	0.828	0.820	0.596	1.137	1.690	1.444
max t-stat					1.069	1.263	1.690	1.611
p-value					0.641	0.534	0.307	0.342

Table B10–Early Sample

	U(1)	U(4)	U(8)	U(12)	t(1)	t(4)	t(8)	t(12)
AUS	1.018	0.965	0.853	0.918	-0.002	0.929	1.361	1.101
CAN	1.039	1.105	1.211	1.375	-1.106	-0.442	0.048	0.149
DEN	1.004	1.006	1.158	1.542	-0.155	0.302	0.264	-0.062
GBR	1.016	1.042	1.167	1.472	-0.292	0.272	0.459	0.415
JPN	1.000	0.989	0.975	1.168	0.294	0.424	0.760	0.439
KOR	0.990	0.936	0.828	0.786	1.261	1.374	1.239	0.850
NOR	1.001	0.984	1.075	1.309	0.169	0.483	0.343	0.167
SWE	0.996	0.941	0.858	0.920	0.486	0.775	0.740	0.553
CHE	1.005	0.981	0.893	1.022	0.028	0.634	1.544	0.774
AUT	1.001	0.979	0.995	1.214	0.100	0.782	0.658	-0.075
BEL	0.998	0.973	0.976	1.163	0.598	1.027	0.828	-0.157
FRA	1.003	1.001	1.145	1.444	-0.081	0.333	0.251	-0.060
GER	1.000	0.979	0.956	1.089	0.242	0.626	0.850	0.109
ESP	1.020	1.089	1.347	1.648	0.322	0.538	0.583	0.543
ITA	1.012	1.050	1.305	1.552	0.522	0.709	0.775	0.676
FIN	1.005	0.992	0.986	1.141	-0.247	0.574	0.861	0.566
NET	1.000	0.990	1.002	1.192	0.240	0.469	0.514	-0.487
max t-stat					1.261	1.374	1.544	1.101
p-value					0.623	0.619	0.531	0.706

Table B10–Late Sample

	U(1)	U(4)	U(8)	U(12)	t(1)	t(4)	t(8)	t(12)
AUS	1.016	1.032	0.965	0.763	-0.948	-0.450	0.764	1.322
CAN	1.001	1.007	0.951	0.785	0.210	0.292	0.719	1.154
DEN	1.013	1.017	0.935	0.809	-0.444	0.081	0.788	1.251
GBR	1.069	1.199	1.324	1.438	-0.899	-0.720	-0.612	-0.876
JPN	1.006	1.023	0.893	0.803	0.325	0.404	0.913	0.772
KOR	1.026	1.092	1.100	0.966	-0.551	-0.892	-0.749	0.510
NOR	1.010	1.016	0.925	0.759	-0.678	-0.026	0.672	0.877
SWE	0.989	0.963	0.855	0.589	1.412	0.978	1.291	1.416
CHE	0.980	0.904	0.715	0.445	0.967	0.920	1.120	1.379
EUR	1.006	1.000	0.889	0.692	-0.168	0.289	0.950	1.306
max t-stat					1.412	0.978	1.291	1.416
p-value					0.492	0.720	0.536	0.480

Table B11: $\hat{F}_{it}-s_{it} + \text{PPP}$, two factors ($r=2$)

Table B11–Long Sample

	U(1)	U(4)	U(8)	U(12)	t(1)	t(4)	t(8)	t(12)
AUS	1.014	1.005	0.953	0.888	-1.198	0.237	1.014	1.148
CAN	1.004	1.025	1.044	1.033	0.322	0.431	0.777	0.942
DEN	1.004	0.996	0.982	1.067	-0.026	0.581	0.865	0.710
GBR	1.015	1.040	1.037	1.078	-0.578	0.081	0.504	0.558
JPN	1.001	1.010	1.006	1.133	0.175	0.169	0.612	0.385
KOR	0.999	0.981	0.916	0.840	0.674	1.027	1.403	1.158
NOR	1.003	0.988	0.939	0.938	-0.067	0.638	0.884	0.830
SWE	0.998	0.971	0.886	0.800	0.558	0.969	1.308	1.253
CHE	0.994	0.957	0.911	0.914	1.059	1.233	1.109	1.007
max t-stat					1.059	1.233	1.403	1.253
p-value					0.636	0.509	0.417	0.483

Table B11–Early Sample

	U(1)	U(4)	U(8)	U(12)	t(1)	t(4)	t(8)	t(12)
AUS	1.016	0.986	0.981	1.048	-0.862	0.615	0.720	0.257
CAN	1.022	1.086	1.246	1.414	-0.564	-0.315	-0.323	-0.614
DEN	0.999	0.983	1.070	1.324	0.274	0.536	0.317	0.073
GBR	1.007	1.006	0.992	1.116	-0.186	0.299	0.446	0.397
JPN	1.002	1.013	1.034	1.182	-0.320	-0.069	0.310	0.176
KOR	0.995	0.963	0.886	0.817	1.086	1.322	1.389	0.918
NOR	1.003	0.984	1.031	1.164	-0.144	0.451	0.277	0.147
SWE	0.999	0.967	0.902	0.900	0.231	0.645	0.652	0.512
CHE	0.998	0.975	1.002	1.128	0.539	0.786	0.454	0.273
AUT	0.996	0.983	1.118	1.233	0.738	0.535	0.273	0.206
BEL	0.996	0.967	1.004	1.097	0.739	0.795	0.462	0.247
FRA	1.001	0.988	1.078	1.275	0.117	0.438	0.235	0.009
GER	0.996	0.970	1.031	1.058	0.770	0.707	0.390	0.397
ESP	1.007	1.026	1.091	1.289	0.219	0.478	0.578	0.537
ITA	1.000	0.981	1.016	1.161	0.549	0.731	0.758	0.672
FIN	0.989	0.951	0.926	0.975	1.086	1.121	0.939	0.640
NET	0.995	0.967	1.027	1.076	0.908	0.746	0.373	0.295
max t-stat					1.086	1.322	1.389	0.918
p-value					0.748	0.572	0.544	0.744

Table B11–Late Sample

	U(1)	U(4)	U(8)	U(12)	t(1)	t(4)	t(8)	t(12)
AUS	1.012	1.018	0.937	0.740	-0.834	-0.109	0.870	1.309
CAN	0.995	0.986	0.913	0.750	0.638	0.626	0.914	1.220
DEN	1.013	1.014	0.896	0.714	-0.269	0.227	0.928	1.342
GBR	1.043	1.107	1.087	1.036	-0.944	-0.605	0.087	0.637
JPN	0.999	1.000	0.886	0.742	0.424	0.378	0.886	0.780
KOR	1.024	1.085	1.076	0.940	-1.251	-1.466	-0.211	0.545
NOR	1.004	0.991	0.847	0.632	0.031	0.420	0.884	0.972
SWE	0.994	0.975	0.869	0.600	0.642	0.714	1.176	1.385
CHE	0.984	0.913	0.748	0.526	0.927	0.917	1.141	1.424
EUR	1.007	0.999	0.875	0.666	-0.116	0.330	0.994	1.336
max t-stat					0.927	0.917	1.176	1.424
p-value					0.700	0.683	0.517	0.416

Table B12: $\hat{F}_{it}-s_{it}$ + PPP, three factors ($r=3$)Table B12–Long Sample

	U(1)	U(4)	U(8)	U(12)	t(1)	t(4)	t(8)	t(12)
AUS	1.009	0.993	0.942	0.891	-0.951	0.597	1.145	1.146
CAN	1.002	1.016	1.034	1.030	0.571	0.732	1.030	1.141
DEN	1.004	0.998	0.987	1.069	-0.066	0.576	0.871	0.721
GBR	1.011	1.020	0.995	1.005	-0.390	0.228	0.590	0.621
JPN	1.002	1.018	1.038	1.186	-0.039	0.024	0.459	0.301
KOR	0.998	0.976	0.908	0.826	0.730	1.039	1.325	1.131
NOR	1.000	0.974	0.908	0.903	0.231	0.863	1.040	0.919
SWE	0.997	0.969	0.888	0.811	0.644	1.013	1.324	1.250
CHE	0.993	0.953	0.886	0.895	1.198	1.338	1.318	1.110
max t-stat					1.198	1.338	1.325	1.250
p-value					0.553	0.452	0.450	0.483

Table B12–Early Sample

	U(1)	U(4)	U(8)	U(12)	t(1)	t(4)	t(8)	t(12)
AUS	1.008	0.966	0.968	1.067	-0.599	1.500	0.791	0.146
CAN	1.016	1.047	1.175	1.369	-0.168	0.327	0.377	-0.015
DEN	1.000	0.983	1.059	1.299	0.266	0.572	0.409	0.173
GBR	1.001	0.972	0.894	0.966	0.087	0.496	0.548	0.452
JPN	1.004	1.025	1.074	1.243	-0.688	-0.177	0.211	0.129
KOR	0.994	0.958	0.876	0.802	1.053	1.261	1.286	0.878
NOR	0.999	0.963	0.978	1.112	0.275	0.758	0.440	0.171
SWE	0.998	0.963	0.900	0.913	0.324	0.706	0.668	0.487
CHE	0.997	0.968	0.962	1.098	0.909	1.008	0.648	0.327
AUT	0.997	0.990	1.129	1.260	0.639	0.475	0.269	0.193
BEL	0.993	0.950	0.943	1.035	1.180	1.155	0.821	0.479
FRA	0.998	0.970	1.015	1.198	0.384	0.678	0.445	0.151
GER	0.996	0.976	1.039	1.081	0.651	0.618	0.400	0.374
ESP	1.007	1.021	1.083	1.260	0.174	0.481	0.577	0.544
ITA	1.002	0.984	1.029	1.150	0.470	0.706	0.717	0.659
FIN	0.987	0.952	0.946	1.018	1.233	1.069	0.802	0.546
NET	0.996	0.975	1.036	1.089	0.725	0.633	0.381	0.305
max t-stat					1.233	1.500	1.286	0.878
p-value					0.687	0.493	0.601	0.764

Table B12–Late Sample

	U(1)	U(4)	U(8)	U(12)	t(1)	t(4)	t(8)	t(12)
AUS	1.011	1.012	0.926	0.727	-0.741	0.006	0.947	1.323
CAN	0.995	0.997	0.946	0.788	0.712	0.650	0.910	1.218
DEN	1.013	1.018	0.917	0.766	-0.366	0.145	0.867	1.315
GBR	1.044	1.110	1.100	1.045	-0.941	-0.622	0.009	0.577
JPN	0.998	0.997	0.882	0.727	0.453	0.397	0.986	0.851
KOR	1.022	1.081	1.076	0.928	-1.346	-1.338	-0.080	0.571
NOR	1.003	0.987	0.839	0.623	0.090	0.466	0.899	0.980
SWE	0.994	0.978	0.875	0.611	0.621	0.687	1.149	1.372
CHE	0.985	0.916	0.752	0.533	0.902	0.898	1.131	1.422
EUR	1.008	1.001	0.880	0.675	-0.144	0.307	0.980	1.330
max t-stat					0.902	0.898	1.149	1.422
p-value					0.719	0.701	0.547	0.421