Appendix 1

Algebraic pertinently consistent with *Geometric*: Tables and figures for Phillips Curve, exogenous *vs*. endogenous

This Appendix has two parts. Part 1 is composed of 17 tables from the aspect of algebra, 15 figures from the aspect of geometry, as well as some Notations. While part 1 deals with the essence of Phillips unemployment, Part 2 clarifies the underlying background of Phillips unemployment by geometrical measurements, in the form of hyperbolas.

Part 1: The essence of Phillips unemployment

1. Tables

Algebraic measurements clarifying the essence of Phillips unemployment

These 17 tables are indicated as algebraic measurements to clarify the essence of Phillips unemployment. These tables are for 68 countries, 1990-2013, using the KEWT database series, 8.14 and 9.15. New discoveries soon after the *EES* (18 June 2014) clarify that Deficit=0 is most sustainable; effectively, efficiently, and robustly, resulting in the Rate of Inflation=0 and Technological Progress>0 (hereunder simply, the inflation rate).

Here is the list of these 17 tables at a glance.

Table A1 Deficit & Balance of Payments to Y and, endogenous inflation rate, $\mathrm{HA}_{r(i)}$, the growth rate of Y, g_Y^*, and endogenous rate of tech progress, g_A^*. (by country, 1990-2013)

Table A2 Deficit & Balance of Payments to Y and, endogenous inflation rate, $\mathrm{HA}_{r(i)}$, the growth rate of Y, g_Y^*, and endogenous rate of tech progress, g_A^*. (by country, 1990-2013)

Table A3 Deficit & Balance of Payments to Y and, endogenous inflation rate, $\mathrm{HA}_{r(i)}$, the growth rate of Y, g_Y^*, and endogenous rate of tech progress, g_A^*. (by country, 1990-2013)

Table A4 Deficit & Balance of Payments to Y and, endogenous inflation rate, $\mathrm{HA}_{r(i)}$, the growth rate of Y, g_Y^*, and endogenous rate of tech progress, g_A^*. (by country, 1990-2013)

Table A5 Deficit & Balance of Payments to Y and, endogenous inflation rate, $\mathrm{HA}_{r(i)}$, the growth rate of Y, g_Y^*, and endogenous rate of tech progress, g_A^*. (by country, 1990-2013)

Appendix 1, *HEU*

Table A6 Deficit & Balance of Payments to Y and, endogenous inflation rate, $\mathrm{HA}_{r(i)}$, the growth rate of Y, g_Y^*, and endogenous rate of tech progress, g_A^*. (by country, 1990-2013)

Table A7 Deficit & Balance of Payments to Y and, endogenous inflation rate, $\mathrm{HA}_{r(i)}$, the growth rate of Y, g_Y^*, and endogenous rate of tech progress, g_A^*. (by country, 1990-2013)

Table A8 Deficit & Balance of Payments to Y and, endogenous inflation rate, $\mathrm{HA}_{r(i)}$, the growth rate of Y, g_Y^*, and endogenous rate of tech progress, g_A^*. (by country, 1990-2013)

Table A9 Deficit & Balance of Payments to Y and, endogenous inflation rate, $\mathrm{HA}_{r(i)}$, the growth rate of Y, g_Y^*, and endogenous rate of tech progress, g_A^*. (by country, 1990-2013)

Table A10 Deficit & Balance of Payments to Y and, endogenous inflation rate, $\mathrm{HA}_{r(i)}$, the growth rate of Y, g_Y^*, and endogenous rate of tech progress, g_A^*. (by country, 1990-2013)

Table A11 Deficit & Balance of Payments to Y and, endogenous inflation rate, $\mathrm{HA}_{r(i)}$, the growth rate of Y, g_Y^*, and endogenous rate of tech progress, g_A^*. (by country, 1990-2013)

Table A12 Deficit & Balance of Payments to Y and, endogenous inflation rate, $\mathrm{HA}_{r(i)}$, the growth rate of Y, g_Y^*, and endogenous rate of tech progress, g_A^*. (by country, 1990-2013)

Table A13 Deficit & Balance of Payments to Y and, endogenous inflation rate, $\mathrm{HA}_{r(i)}$, the growth rate of Y, g_Y^*, and endogenous rate of tech progress, g_A^*. (by country, 1990-2013)

Table A14 Deficit & Balance of Payments to Y and, endogenous inflation rate, $\mathrm{HA}_{r(i)}$, the growth rate of Y, g_Y^*, and endogenous rate of tech progress, g_A^*. (by country, 1990-2013)

Table A15 Deficit & Balance of Payments to Y and, endogenous inflation rate, $\mathrm{HA}_{r(i)}$, the growth rate of Y, g_Y^*, and endogenous rate of tech progress, g_A^*. (by country, 1990-2013)

Table A16 Deficit & Balance of Payments to Y and, endogenous inflation rate, $\mathrm{HA}_{r(i)}$, the growth rate of Y, g_Y^*, and endogenous rate of tech progress, g_A^*. (by country, 1990-2013)

Table A17 Deficit & Balance of Payments to Y and, endogenous inflation rate, $\mathrm{HA}_{r(i)}$, the growth rate of Y, g_Y^*, and endogenous rate of tech progress, g_A^*. (by country, 1990-2013)

Table A1 Deficit & Balance of Payments to Y and, endogenous inflation rate, $HA_{r(i)}$, the growth rate of Y, g_Y^*, and endogenous rate of tech progress, g_A^*. by country, 1990-2013

	Δd	s_{PRI}-i_{PRI}	bop	Δd	s_{PRI}-i_{PRI}	bop	Δd	s_{PRI}-i_{PRI}	bop	Δd	s_{PRI}-i_{PRI}	bop
	17 Asian counries			E0. Euro Area using IMF data			15 Europe except for Euro Area			1. Argentina		
1990	(0.0630)	0.0754	0.0125				(0.0055)	0.0091	0.0036	(0.0020)	0.0497	0.0477
1991	(0.0591)	0.0845	0.0255				(0.0264)	0.0220	(0.0044)	(0.0058)	0.0099	0.0041
1992	(0.0589)	0.0927	0.0338				(0.0403)	0.0390	(0.0013)	(0.0004)	(0.0277)	(0.0281)
1993	(0.0591)	0.0905	0.0314				(0.0689)	0.0332	(0.0357)	(0.0074)	(0.0334)	(0.0408)
1994	(0.0577)	0.0843	0.0266				(0.0568)	0.0445	(0.0123)	(0.0081)	(0.0420)	(0.0501)
1995	(0.0565)	0.0755	0.0190				(0.0372)	0.0136	(0.0236)	(0.0061)	(0.0187)	(0.0248)
1996	(0.0552)	0.0691	0.0139				(0.0311)	(0.0131)	(0.0442)	(0.0214)	(0.0085)	(0.0299)
1997	(0.0442)	0.0713	0.0271				(0.0288)	(0.0104)	(0.0392)	(0.0165)	(0.0320)	(0.0485)
1998	(0.1305)	0.1643	0.0338				(0.0267)	0.0048	(0.0219)	(0.0154)	(0.0404)	(0.0558)
1999	(0.0883)	0.1171	0.0288	(0.0091)	0.0202	0.0111	(0.0366)	0.0158	(0.0209)	(0.0318)	(0.0168)	(0.0487)
2000	(0.0892)	0.1149	0.0257	(0.0051)	0.0084	0.0034	(0.0214)	(0.0176)	(0.0390)	(0.0267)	(0.0096)	(0.0362)
2001	(0.0681)	0.0917	0.0236	(0.0145)	0.0236	0.0091	(0.0316)	0.0281	(0.0035)	(0.8432)	0.8257	(0.0174)
2002	(0.0868)	0.1181	0.0313	(0.0223)	0.0401	0.0179	(0.0284)	0.0201	(0.0083)	(0.8044)	0.8910	0.0866
2003	(0.0854)	0.1195	0.0341	(0.0283)	0.0447	0.0164	(0.0637)	0.0297	(0.0340)	(0.3704)	0.4268	0.0564
2004	(0.0654)	0.1038	0.0384	(0.0267)	0.0510	0.0244	(0.0350)	(0.0153)	(0.0503)	(0.1615)	0.1782	0.0168
2005	(0.0529)	0.0879	0.0350	(0.0224)	0.0406	0.0182	(0.0233)	(0.0368)	(0.0601)	(0.8836)	0.9112	0.0277
2006	(0.0397)	0.0784	0.0387	(0.0091)	0.0281	0.0190	(0.0122)	(0.0673)	(0.0795)	(0.3644)	0.3989	0.0345
2007	(0.0234)	0.0710	0.0477	0.0001	0.0188	0.0189	(0.0053)	(0.0844)	(0.0898)	(0.2741)	0.2993	0.0253
2008	(0.0459)	0.0744	0.0285	(0.0165)	0.0226	0.0061	(0.0200)	(0.0644)	(0.0844)	(0.2365)	0.2680	0.0315
2009	(0.1023)	0.1260	0.0237	(0.0629)	0.0773	0.0143	(0.0506)	0.0212	(0.0294)	(0.3476)	0.4412	0.0936
2010	(0.0890)	0.1171	0.0282	(0.0651)	0.0815	0.0164	(0.0418)	(0.0112)	(0.0530)	(0.0327)	0.0999	0.0672
2011	(0.0973)	0.1066	0.0092	(0.0651)	0.0815	0.0164	(0.0361)	0.0214	(0.0147)	(0.0992)	0.1516	0.0524
2012	(0.0973)	0.1066	0.0092	(0.0651)	0.0815	0.0164	(0.0342)	0.0210	(0.0132)	(0.0513)	0.1006	0.0493
2013	(0.0973)	0.1066	0.0092	(0.0447)	0.0617	0.0169	(0.1044)	0.0643	(0.0401)	(0.0513)	0.1006	0.0493

	Infla.rate,HA	g_Y*	g_A*	Infla.rate,HA	g_Y*	g_A*	Infla.rate,HA	g_Y*	g_A*	Infla.rate,HA	g_Y*	g_A*
	17 Asian counries			E0. Euro Area using IMF data			15 Europe except for Euro Area			1. Argentina		
1990	0.0714	0.0671	0.0385				0.0331	0.0430	0.0299	0.5257	(0.0571)	(0.0506)
1991	0.0707	0.0631	0.0353				0.0675	0.0574	0.0438	2.6261	(0.1099)	(0.0768)
1992	0.0445	0.0483	0.0269				(0.0556)	0.1711	(0.0805)	7.8699	(0.0928)	(0.0648)
1993	0.0306	0.0408	0.0219				0.0911	0.0585	0.0458	0.5155	0.1258	0.0996
1994	0.0248	0.0378	0.0196				(0.1416)	0.1715	(0.3154)	0.3217	0.1181	0.0927
1995	0.0219	0.0365	0.0189				0.0887	0.0687	0.0609	0.2041	0.0990	0.0749
1996	0.0168	0.0358	0.0155				0.0975	0.0807	0.0727	0.1597	0.1002	0.0784
1997	0.0183	0.0350	0.0151				0.1807	0.0776	0.0705	0.1356	0.1019	0.0811
1998	0.0090	0.0236	0.0065				0.2000	0.0871	0.0799	0.1097	0.0974	0.0761
1999	0.0095	0.0195	0.0058	0.0235	0.0206	0.0154	0.2294	0.0751	0.0672	0.1013	0.0710	0.0519
2000	0.0092	0.0236	0.0068	0.0237	0.0227	0.0166	0.2434	0.0887	0.0794	0.0846	0.0641	0.0471
2001	0.0103	0.0177	0.0055	0.0242	0.0280	0.0208	0.2754	0.0636	0.0642	0.0703	0.0502	0.0354
2002	0.0011	0.0115	0.0004	0.0418	0.0420	0.0304	0.2446	0.0774	0.0701	0.1094	0.0503	0.0342
2003	0.0035	0.0121	0.0012	0.0213	0.0249	0.0167	0.2682	0.0795	0.0707	0.1172	0.0648	0.0475
2004	0.0086	0.0151	0.0040	0.0212	0.0243	0.0160	0.2405	0.0891	0.0787	0.1327	0.0903	0.0682
2005	0.0085	0.0141	0.0036	0.0235	0.0250	0.0182	0.2175	0.0902	0.0790	0.1458	0.0899	0.0665
2006	0.0094	0.0149	0.0043	0.0234	0.0271	0.0189	0.1707	0.1065	0.0938	0.1861	0.1003	0.0711
2007	0.1386	(0.0251)	(0.0242)	0.0287	0.0328	0.0239	0.1477	0.1067	0.0935	0.1882	0.1057	0.0756
2008	0.0173	0.0227	0.0117	0.0261	0.0309	0.0236	0.1203	0.1079	0.0951	0.2160	0.1052	0.0784
2009	0.0182	0.0245	0.0135	0.0245	0.0203	0.0158	0.1153	0.0594	0.0505	0.1437	0.0546	0.0382
2010	0.0226	0.0293	0.0177	0.0265	0.0204	0.0173	0.1050	0.0746	0.0647	0.2133	0.0999	0.0616
2011	0.0233	0.0311	0.0210	0.0264	0.0217	0.0185	0.0952	0.0612	0.0532	0.2302	0.1182	0.0712
2012	(0.0187)	(0.7909)	1.3388	0.0261	0.0191	0.0162	0.0882	0.0663	0.0582	0.1849	0.1056	0.0647
2013	(0.8881)	0.0159	(0.8068)	0.0271	0.0185	0.0168	(0.2563)	(0.1554)	0.4232	0.2199	0.1031	0.0706

Appendix 1, *HEU*

Table A2 Deficit & Balance of Payments to Y and, endogenous inflation rate, $HA_{r(i)}$, the growth rate of Y, g_Y^*, and endogenous rate of tech progress, g_A^*. by country, 1990-2013

	Δd	s_{PRI}-i_{PRI}	bop	Δd	s_{PRI}-i_{PRI}	bop	Δd	s_{PRI}-i_{PRI}	bop	Δd	s_{PRI}-i_{PRI}	bop
	1. The US			E1. Austria			1. Denmark			2. Bolivia		
1990	(0.0422)	0.0305	(0.0117)	(0.0528)	0.0633	0.0105	(0.0078)	0.0203	0.0125	(0.0582)	0.0453	(0.0130)
1991	(0.0512)	0.0500	(0.0012)	(0.0560)	0.0582	0.0022	(0.0131)	0.0352	0.0221	(0.0529)	(0.0088)	(0.0617)
1992	(0.0515)	0.0482	(0.0033)	(0.0458)	0.0513	0.0056	(0.0176)	0.0516	0.0340	(0.0510)	(0.0503)	(0.1013)
1993	(0.0434)	0.0345	(0.0089)	(0.0594)	0.0619	0.0025	(0.0253)	0.0681	0.0428	(0.0533)	(0.0512)	(0.1046)
1994	(0.0325)	0.0179	(0.0146)	(0.0659)	0.0586	(0.0072)	(0.0264)	0.0588	0.0324	(0.0367)	(0.0255)	(0.0622)
1995	(0.0227)	0.0140	(0.0087)	(0.0584)	0.0513	(0.0071)	(0.0261)	0.0601	0.0339	(0.0243)	(0.0278)	(0.0521)
1996	(0.0162)	0.0079	(0.0083)	(0.0469)	0.0339	(0.0129)	(0.0032)	0.0440	0.0408	(0.0260)	(0.0267)	(0.0527)
1997	(0.0003)	(0.0079)	(0.0082)	(0.0203)	0.0214	0.0011	0.0126	0.0127	0.0254	(0.0481)	(0.0446)	(0.0927)
1998	0.0070	(0.0214)	(0.0143)	(0.0267)	0.0425	0.0158	0.0188	(0.0077)	0.0111	(0.0460)	(0.0988)	(0.1448)
1999	0.0146	(0.0425)	(0.0279)	(0.0260)	0.0295	0.0035	0.0104	0.0369	0.0472	(0.0459)	(0.0710)	(0.1169)
2000	0.0262	(0.0644)	(0.0382)	(0.0263)	0.0376	0.0112	0.0210	0.0231	0.0440	(0.0501)	(0.0515)	(0.1017)
2001	0.0138	(0.0484)	(0.0346)	(0.0053)	0.0064	0.0011	0.0113	0.0474	0.0587	(0.0818)	0.0224	(0.0594)
2002	(0.0170)	(0.0233)	(0.0403)	(0.0112)	0.0523	0.0411	0.0009	0.0515	0.0524	(0.1056)	0.0372	(0.0683)
2003	(0.0382)	(0.0063)	(0.0445)	(0.0213)	0.0502	0.0289	(0.0044)	0.0681	0.0638	(0.0789)	0.0703	(0.0086)
2004	(0.0397)	(0.0111)	(0.0508)	(0.0557)	0.0909	0.0352	0.0205	0.0398	0.0603	(0.0669)	0.0745	0.0076
2005	(0.0289)	(0.0282)	(0.0571)	(0.0231)	0.0577	0.0346	0.0542	0.0166	0.0707	0.0045	0.0343	0.0388
2006	(0.0210)	(0.0379)	(0.0589)	(0.0233)	0.0695	0.0462	0.0572	(0.0006)	0.0567	0.0484	0.0528	0.1012
2007	(0.0128)	(0.0334)	(0.0462)	(0.0126)	0.0652	0.0526	0.0541	(0.0163)	0.0378	0.0270	0.0576	0.0846
2008	(0.0335)	(0.0080)	(0.0416)	(0.0129)	0.0771	0.0642	0.0381	0.0155	0.0536	0.0463	0.0317	0.0780
2009	(0.1172)	0.0975	(0.0197)	(0.0488)	0.0901	0.0413	(0.0294)	0.0909	0.0616	(0.0259)	0.0576	0.0317
2010	(0.1008)	0.0753	(0.0255)	(0.0543)	0.1006	0.0463	(0.0277)	0.1043	0.0766	(0.0169)	0.0941	0.0771
2011	(0.1008)	0.0753	(0.0255)	(0.0316)	0.0664	0.0348	(0.0193)	0.1051	0.0858	(0.0299)	0.0940	0.0641
2012	(0.1008)	0.0753	(0.0255)	(0.0316)	0.0664	0.0348	(0.0405)	0.1282	0.0877	0.0364	0.0692	0.1056
2013	(0.1008)	0.0753	(0.0255)	(0.0316)	0.0664	0.0348	(0.0405)	0.1282	0.0877	0.0364	0.0692	0.1056

	Infla.rate,HA	g_Y*	g_A*	Infla.rate,HA	g_Y*	g_A*	Infla.rate,HA	g_Y*	g_A*	Infla.rate,HA	g_Y*	g_A*
	1. the U S			E1. Austria			1. Denmark			2. Bolivia		
1990	0.0459	0.0212	0.0082	0.0332	0.0411	0.0284	0.1077	0.0675	0.0590	(0.0026)	0.0214	(0.0003)
1991	0.0346	0.0220	0.0072	0.0340	0.0437	0.0308	0.0976	0.0584	0.0508	0.0963	0.0464	0.0184
1992	0.0349	0.0210	0.0064	0.0389	0.0394	0.0330	0.0859	0.0493	0.0409	0.1192	0.0562	0.0257
1993	0.0464	0.0281	0.0129	0.0361	0.0365	0.0307	0.0772	0.0377	0.0306	0.1213	0.0551	0.0253
1994	0.0523	0.0326	0.0175	0.0380	0.0420	0.0355	0.0804	0.0375	0.0322	0.0891	0.0394	0.0128
1995	0.0505	0.0301	0.0157	0.0371	0.0311	0.0258	0.0865	0.0567	0.0453	0.1212	0.0471	0.0197
1996	0.0510	0.0332	0.0187	0.0351	0.0307	0.0229	0.0881	0.0530	0.0436	0.1428	0.0563	0.0268
1997	0.0500	0.0383	0.0234	0.0306	0.0303	0.0216	0.0887	0.0616	0.0509	0.1656	0.0808	0.0478
1998	0.0496	0.0438	0.0283	0.0363	0.0287	0.0249	0.0761	0.0610	0.0510	0.1574	0.1082	0.0677
1999	0.0513	0.0518	0.0359	0.0280	0.0271	0.0234	0.0875	0.0486	0.0424	0.1322	0.0662	0.0375
2000	0.0519	0.0551	0.0389	0.0273	0.0275	0.0226	0.1055	0.0626	0.0493	0.1225	0.0605	0.0332
2001	0.0565	0.0424	0.0275	0.0253	0.0312	0.0236	0.0999	0.0524	0.0426	0.0119	0.0437	0.0023
2002	0.0655	0.0330	0.0190	0.0249	0.0236	0.0167	0.0830	0.0502	0.0398	0.0991	0.0467	0.0218
2003	0.0705	0.0311	0.0176	0.0223	0.0244	0.0164	0.0785	0.0419	0.0345	0.0469	0.0257	0.0054
2004	0.0746	0.0340	0.0202	0.0282	0.0295	0.0206	0.0680	0.0404	0.0320	0.1040	0.0400	0.0177
2005	0.0808	0.0335	0.0196	0.0278	0.0291	0.0204	0.0714	0.0385	0.0301	0.0955	0.0340	0.0130
2006	0.0738	0.0427	0.0283	0.0332	0.0293	0.0213	0.0729	0.0444	0.0350	0.1154	0.0328	0.0121
2007	0.0611	0.0471	0.0332	0.0431	0.0323	0.0244	0.0642	0.0489	0.0376	0.1623	0.0429	0.0216
2008	0.0644	0.0381	0.0250	0.0394	0.0277	0.0207	0.0526	0.0369	0.0278	0.2138	0.0616	0.0379
2009	(0.0533)	0.0063	(0.0020)	0.0262	0.0231	0.0175	0.0381	0.0183	0.0133	0.1044	0.0459	0.0248
2010	0.0524	0.0161	0.0059	0.0274	0.0233	0.0176	0.0374	0.0200	0.0131	0.1190	0.0478	0.0253
2011	0.0174	0.0207	0.0025	0.0313	0.0290	0.0225	0.0371	0.0185	0.0118	0.1559	0.0663	0.0413
2012	0.0568	0.0175	0.0070	0.0313	0.0283	0.0218	0.0372	0.0141	0.0095	0.1505	0.0550	0.0303
2013	0.1133	0.0145	0.0118	0.0346	0.0267	0.0237	0.0490	0.0128	0.0116	0.1998	0.0404	0.0333

Table A3 Deficit & Balance of Payments to Y and, endogenous inflation rate, $HA_{r(i)}$, the growth rate of Y, g_Y^*, and endogenous rate of tech progress, g_A^*. by country, 1990-2013

	Δd	s_{PRI}-i_{PRI}	bop	Δd	s_{PRI}-i_{PRI}	bop	Δd	s_{PRI}-i_{PRI}	bop	Δd	s_{PRI}-i_{PRI}	bop
	2. Canada			E2. Belgium			2. Iceland			3. Brazil		
1990	(0.0527)	0.0095	(0.0433)	(0.0662)	0.0848	0.0185	(0.0276)	0.0037	(0.0239)	(0.0647)	0.0781	0.0135
1991	(0.0611)	0.0178	(0.0433)	(0.0722)	0.0988	0.0265	(0.0491)	(0.0020)	(0.0511)	(0.0474)	0.0557	0.0083
1992	(0.0652)	0.0219	(0.0433)	(0.0773)	0.1115	0.0342	(0.0353)	0.0014	(0.0339)	(0.0422)	0.0696	0.0274
1993	(0.0649)	0.0266	(0.0383)	(0.0716)	0.1282	0.0566	(0.0460)	0.0467	0.0007	(0.1036)	0.1166	0.0130
1994	(0.0527)	0.0255	(0.0271)	(0.0537)	0.1167	0.0630	(0.0568)	0.0801	0.0233	(0.0677)	0.0662	(0.0015)
1995	(0.0431)	0.0391	(0.0040)	(0.0617)	0.1343	0.0725	(0.0512)	0.0608	0.0096	(0.0394)	0.0065	(0.0329)
1996	(0.0222)	0.0299	0.0077	(0.0428)	0.1095	0.0667	(0.0103)	(0.0088)	(0.0191)	(0.0527)	0.0166	(0.0361)
1997	0.0072	(0.0212)	(0.0140)	(0.0326)	0.1034	0.0708	0.0040	(0.0237)	(0.0197)	(0.0753)	0.0303	(0.0451)
1998	0.0169	(0.0338)	(0.0169)	(0.0260)	0.0978	0.0718	0.0312	(0.1055)	(0.0743)	(0.0804)	0.0486	(0.0318)
1999	0.0276	(0.0239)	0.0037	(0.0033)	0.0229	0.0197	0.0364	(0.1113)	(0.0749)	(0.0417)	(0.0095)	(0.0512)
2000	0.0386	(0.0022)	0.0364	0.0027	0.0213	0.0240	0.0157	(0.1285)	(0.1129)	(0.0094)	(0.0409)	(0.0503)
2001	0.0085	0.0276	0.0361	0.0039	0.0544	0.0583	0.0213	(0.0684)	(0.0472)	(0.0233)	0.0125	(0.0107)
2002	0.0090	0.0146	0.0235	(0.0017)	0.0816	0.0798	(0.0027)	0.0184	0.0156	(0.0131)	0.0338	0.0208
2003	0.0083	0.0156	0.0239	(0.0022)	0.0857	0.0835	(0.0121)	(0.0399)	(0.0520)	(0.0484)	0.0772	0.0288
2004	0.0235	0.0055	0.0290	(0.0027)	0.0710	0.0683	0.0231	(0.1326)	(0.1095)	(0.0207)	0.0604	0.0397
2005	0.0285	(0.0030)	0.0256	(0.0305)	0.0838	0.0533	0.1079	(0.2860)	(0.1781)	(0.0400)	0.0769	0.0369
2006	0.0335	(0.0165)	0.0171	0.0036	0.0501	0.0537	0.0948	(0.3602)	(0.2654)	(0.0240)	0.0535	0.0295
2007	0.0241	(0.0154)	0.0087	(0.0012)	0.0576	0.0564	0.0883	(0.2697)	(0.1815)	(0.0117)	0.0267	0.0150
2008	(0.0015)	0.0094	0.0079	(0.0123)	0.0391	0.0269	0.0165	(0.2901)	(0.2736)	(0.0314)	0.0309	(0.0006)
2009	(0.0374)	0.0021	(0.0353)	(0.0656)	0.0901	0.0246	(0.0835)	(0.0263)	(0.1098)	(0.0267)	0.0226	(0.0040)
2010	(0.0473)	0.0045	(0.0428)	(0.0453)	0.0943	0.0490	(0.0665)	(0.0208)	(0.0873)	(0.0046)	(0.0089)	(0.0135)
2011	(0.0332)	(0.0028)	(0.0360)	(0.0451)	0.0722	0.0270	(0.0485)	(0.0218)	(0.0703)	(0.0146)	0.0043	(0.0103)
2012	(0.0332)	(0.0028)	(0.0360)	(0.0451)	0.0722	0.0270	(0.0493)	(0.0508)	(0.1001)	(0.0068)	(0.0108)	(0.0176)
2013	(0.0332)	(0.0028)	(0.0360)	(0.0451)	0.0722	0.0270	(0.0493)	(0.0508)	(0.1001)	#DIV/0!	#DIV/0!	#DIV/0!

	Infla.rate,HA	g_Y*	g_A*	Infla.rate,HA	g_Y*	g_A*	Infla.rate,HA	g_Y*	g_A*	Infla.rate,HA	g_Y*	g_A*
	2. Canada			E2. Belgium			2. Iceland			3. Brazil		
1990	0.0572	0.0797	0.0577	0.0670	0.0300	0.0242	0.0587	0.0585	0.0416	0.0544	0.1013	0.0749
1991	0.0541	0.0619	0.0446	0.0758	0.0221	0.0188	0.0660	0.0616	0.0439	0.1980	0.0960	0.0712
1992	0.0494	0.0638	0.0459	0.0579	0.0377	0.0277	0.0597	0.0498	0.0335	0.1688	0.0843	0.0611
1993	0.0484	0.0529	0.0371	0.0602	0.0206	0.0159	0.0486	0.0419	0.0271	0.0298	0.0434	0.0253
1994	0.0441	0.0574	0.0409	0.0683	0.0096	0.0077	0.0448	0.0384	0.0242	0.0810	0.0791	0.0573
1995	0.0447	0.0285	0.0171	0.0826	0.0266	0.0249	0.0451	0.0412	0.0267	(0.0146)	0.0280	(0.0200)
1996	0.0388	0.0256	0.0138	0.0770	0.0359	0.0294	0.0487	0.0519	0.0365	0.0086	0.0259	0.0095
1997	0.0445	0.0371	0.0248	0.0879	0.0396	0.0331	0.0494	0.0555	0.0399	0.0104	0.0293	0.0121
1998	0.0454	0.0351	0.0230	0.0844	0.0367	0.0315	0.0527	0.0755	0.0579	0.0098	0.0260	0.0097
1999	0.0407	0.0357	0.0239	0.0786	0.0536	0.0361	0.0587	0.0630	0.0459	0.0127	0.0310	0.0143
2000	0.0450	0.0394	0.0273	0.0667	0.0469	0.0339	0.0657	0.0719	0.0531	0.0133	0.0296	0.0119
2001	0.0370	0.0314	0.0194	0.0225	0.0266	0.0135	0.0493	0.0649	0.0487	0.0108	0.0226	0.0071
2002	0.0377	0.0332	0.0208	0.0236	0.0164	0.0110	0.0429	0.0373	0.0241	0.0091	0.0192	0.0049
2003	0.0372	0.0339	0.0209	(0.0311)	0.0017	(0.0019)	0.0511	0.0511	0.0325	0.0126	0.0208	0.0069
2004	0.0393	0.0368	0.0237	0.0247	0.0210	0.0133	0.0516	0.0775	0.0564	0.0206	0.0275	0.0134
2005	0.0406	0.0398	0.0261	0.0192	0.0202	0.0120	0.0603	0.0943	0.0700	0.0216	0.0256	0.0125
2006	0.0425	0.0447	0.0303	0.0230	0.0242	0.0146	0.0520	0.1266	0.1004	0.0261	0.0282	0.0158
2007	0.0439	0.0487	0.0340	0.0208	0.0232	0.0129	0.0453	0.0974	0.0755	0.0322	0.0350	0.0225
2008	0.0429	0.0482	0.0336	0.0185	0.0248	0.0146	0.0414	0.1346	0.1114	0.0390	0.0460	0.0329
2009	0.0463	0.0329	0.0192	0.0144	0.0185	0.0091	0.0369	0.0741	0.0603	0.0389	0.0349	0.0232
2010	0.0480	0.0368	0.0231	0.0125	0.0138	0.0058	0.0289	0.0700	0.0450	0.0432	0.0469	0.0342
2011	0.0438	0.0398	0.0264	0.0182	0.0193	0.0117	0.0277	0.0640	0.0400	0.0317	0.0558	0.0254
2012	0.0550	0.0353	0.0314	0.0206	0.0186	0.0126	0.0283	0.0630	0.0455	0.0321	0.0468	0.0174
2013	0.0524	0.0341	0.0303	0.0267	0.0173	0.0157	0.0326	0.0563	0.0511	#DIV/0!	#DIV/0!	#DIV/0!

Appendix 1, *HEU*

Table A4 Deficit & Balance of Payments to Y and, endogenous inflation rate, $HA_{r(i)}$, the growth rate of Y, g_Y^*, and endogenous rate of tech progress, g_A^*. by country, 1990-2013

	Δd	s_{PRI}-i_{PRI}	bop	Δd	s_{PRI}-i_{PRI}	bop	Δd	s_{PRI}-i_{PRI}	bop	Δd	s_{PRI}-i_{PRI}	bop
	3. Australia			3. Finland			3. Norway			4. Chile		
1990	0.0250	(0.0917)	(0.0667)	0.0021	(0.0190)	(0.0169)	0.0060	0.0342	0.0402	0.0089	(0.0370)	(0.0281)
1991	0.0062	(0.0519)	(0.0457)	(0.0797)	0.0724	(0.0073)	(0.0326)	0.0861	0.0535	0.0171	(0.0302)	(0.0131)
1992	(0.0287)	(0.0165)	(0.0452)	(0.1658)	0.1808	0.0151	(0.0743)	0.1270	0.0527	0.0245	(0.0591)	(0.0346)
1993	(0.0413)	0.0016	(0.0396)	(0.1504)	0.2109	0.0605	(0.0619)	0.1090	0.0471	0.0206	(0.0857)	(0.0651)
1994	(0.0369)	(0.0245)	(0.0613)	(0.1295)	0.2011	0.0716	(0.0213)	0.0713	0.0500	0.0170	(0.0540)	(0.0370)
1995	(0.0289)	0.0142	(0.0148)	(0.1056)	0.1503	0.0447	0.0173	0.0384	0.0556	0.0262	(0.0452)	(0.0190)
1996	(0.0112)	0.0091	(0.0021)	(0.0696)	0.1216	0.0519	0.0071	0.0807	0.0878	0.0234	(0.0789)	(0.0555)
1997	0.0045	(0.0010)	0.0036	(0.0040)	0.0721	0.0682	0.0089	0.0716	0.0805	0.0199	(0.0788)	(0.0589)
1998	0.0330	(0.0907)	(0.0576)	(0.0006)	0.0731	0.0725	(0.0320)	0.0398	0.0079	0.0040	(0.0667)	(0.0627)
1999	(0.0065)	(0.0593)	(0.0658)	0.0145	0.0843	0.0988	(0.0428)	0.1159	0.0731	(0.0150)	0.0064	(0.0086)
2000	0.0121	(0.0590)	(0.0470)	0.0333	0.0667	0.1000	0.0001	0.1770	0.1771	0.0015	(0.0234)	(0.0218)
2001	0.0134	(0.0385)	(0.0251)	0.0618	0.0442	0.1060	0.0002	0.1912	0.1914	0.0158	(0.0365)	(0.0207)
2002	0.0156	(0.0606)	(0.0450)	0.0531	0.0556	0.1088	0.0001	0.1537	0.1538	0.0074	(0.0248)	(0.0174)
2003	0.0183	(0.0825)	(0.0642)	0.0349	0.0373	0.0722	(0.0004)	0.1530	0.1526	0.0123	(0.0323)	(0.0200)
2004	0.0213	(0.0953)	(0.0740)	0.0337	0.0524	0.0861	0.0041	0.1501	0.1542	0.0367	(0.0267)	0.0100
2005	0.0259	(0.0955)	(0.0696)	0.0340	0.0217	0.0557	0.0054	0.1873	0.1927	0.0617	(0.0636)	(0.0019)
2006	0.0348	(0.1002)	(0.0654)	0.0473	0.0164	0.0637	0.0103	0.1933	0.2036	0.0909	(0.0640)	0.0269
2007	0.0328	(0.1098)	(0.0771)	0.0636	(0.0055)	0.0581	0.0022	0.1501	0.1523	0.1057	(0.0791)	0.0266
2008	0.0296	(0.0844)	(0.0548)	0.0532	(0.0062)	0.0470	0.0024	0.1864	0.1888	0.0630	(0.1047)	(0.0416)
2009	(0.0186)	(0.0331)	(0.0518)	(0.0237)	0.0599	0.0363	0.0152	0.1295	0.1448	(0.0284)	0.0407	0.0122
2010	(0.0329)	0.0022	(0.0308)	(0.0278)	0.0588	0.0310	0.0081	0.1392	0.1473	0.0124	(0.0171)	(0.0047)
2011	(0.0329)	0.0022	(0.0308)	(0.0083)	0.0053	(0.0030)	0.0055	(0.6566)	(0.6511)	0.0229	(0.0490)	(0.0262)
2012	(0.0329)	0.0022	(0.0308)	(0.0083)	0.0053	(0.0030)	0.0093	(0.6530)	(0.6437)	0.0255	(0.0740)	(0.0484)
2013	(0.0329)	0.0022	(0.0308)	(0.0083)	0.0053	(0.0030)	0.0093	(0.6530)	(0.6437)	#DIV/0!	#DIV/0!	#DIV/0!

	Infla.rate,HA	g_Y*	g_A*	Infla.rate,HA	g_Y*	g_A*	Infla.rate,HA	g_Y*	g_A*	Infla.rate,HA	g_Y*	g_A*
	3. Australia			3. Finland			3. Norway			4. Chile		
1990	0.0427	0.0516	0.0320	0.0612	0.0650	0.0500	0.1566	0.0811	0.0612	0.0870	0.0853	0.0588
1991	0.0321	0.0182	0.0041	0.0357	0.0275	0.0210	0.1367	0.0711	0.0520	0.0784	0.0840	0.0547
1992	0.0439	0.0205	0.0066	0.0287	0.0205	0.0129	0.0958	0.0591	0.0430	0.0970	0.1017	0.0684
1993	0.0553	0.0249	0.0119	0.0193	0.0124	0.0058	0.1031	0.0617	0.0465	0.1226	0.1249	0.0825
1994	0.0612	0.0379	0.0232	0.0293	0.0162	0.0110	0.1095	0.0606	0.0470	0.1797	0.1343	0.0793
1995	0.0383	0.0216	0.0077	0.0492	0.0377	0.0294	0.0931	0.0594	0.0404	0.0996	0.1075	0.0607
1996	0.0384	0.0235	0.0097	0.0425	0.0314	0.0243	0.1217	0.0528	0.0373	0.0756	0.0988	0.0696
1997	0.0398	0.0235	0.0104	0.0622	0.0352	0.0283	0.1399	0.0642	0.0419	0.0727	0.0964	0.0692
1998	0.0526	0.0552	0.0386	0.0815	0.0420	0.0325	0.0946	0.0723	0.0549	0.0532	0.0839	0.0614
1999	0.0562	0.0526	0.0360	0.0651	0.0290	0.0213	0.1101	0.0570	0.0384	0.0444	0.0588	0.0406
2000	0.0502	0.0499	0.0337	0.0778	0.0334	0.0238	0.1443	0.0516	0.0345	0.0482	0.0654	0.0462
2001	0.0476	0.0399	0.0245	0.0742	0.0327	0.0217	0.1208	0.0385	0.0237	0.0699	0.0772	0.0537
2002	0.0506	0.0481	0.0318	0.0643	0.0261	0.0193	0.0979	0.0354	0.0224	0.0730	0.0762	0.0527
2003	0.0499	0.0567	0.0392	0.0459	0.0272	0.0215	0.0982	0.0299	0.0201	0.0735	0.0763	0.0532
2004	0.0506	0.0585	0.0407	0.0412	0.0238	0.0170	0.1092	0.0414	0.0268	0.1261	0.0874	0.0536
2005	0.0422	0.0624	0.0412	0.0423	0.0293	0.0237	0.1371	0.0466	0.0292	0.1461	0.0992	0.0575
2006	0.0552	0.0552	0.0496	0.0408	0.0286	0.0214	0.1452	0.0562	0.0318	0.2177	0.1162	0.0541
2007	0.0445	0.0647	0.0482	0.0559	0.0374	0.0276	0.1364	0.0682	0.0413	0.1995	0.1088	0.0521
2008	0.0438	0.0686	0.0520	0.0378	0.0347	0.0232	0.1641	0.0692	0.0415	0.1292	0.1020	0.0610
2009	0.0392	0.0520	0.0371	0.0233	0.0175	0.0124	0.0818	0.0500	0.0250	0.0628	0.0599	0.0389
2010	0.0377	0.0529	0.0383	0.0210	0.0183	0.0114	0.0999	0.0498	0.0297	0.0773	0.0701	0.0475
2011	0.0437	0.0472	0.0428	0.0267	0.0281	0.0220	0.0930	0.2772	0.1951	0.0611	0.0691	0.0493
2012	0.0409	0.0451	0.0409	0.0274	0.0252	0.0194	0.0737	0.2259	0.1556	0.0507	0.0692	0.0516
2013	0.0385	0.0431	0.0391	0.0311	0.0238	0.0215	0.0608	0.1829	0.1332	#DIV/0!	#DIV/0!	#DIV/0!

Table A5 Deficit & Balance of Payments to Y and, endogenous inflation rate, $HA_{r(i)}$, the growth rate of Y, g_Y^*, and endogenous rate of tech progress, g_A^*. by country, 1990-2013

	Infla.rate,HA	g_Y^*	g_A^*	Infla.rate,HA	g_Y^*	g_A^*	Infla.rate,HA	g_Y^*	g_A^*	Infla.rate,HA	g_Y^*	g_A^*
	4. New Zealand			4. France			4. Sweden			5. Colombia		
1990	0.0477	0.0424	0.0294	0.0342	0.0426	0.0333	0.0694	0.0747	0.0597	0.1165	0.0810	0.0563
1991	0.0117	0.0435	0.0066	0.0322	0.0381	0.0292	0.0658	0.0589	0.0467	0.1114	0.0529	0.0337
1992	0.0449	0.0338	0.0220	0.0303	0.0325	0.0243	0.0631	0.0525	0.0419	0.1121	0.0611	0.0433
1993	0.0361	0.0471	0.0320	0.0293	0.0237	0.0169	0.0592	0.0411	0.0316	0.1289	0.0854	0.0652
1994	0.0351	0.0581	0.0394	0.0303	0.0261	0.0197	0.0529	0.0460	0.0342	0.1433	0.1351	0.1120
1995	0.0363	0.0449	0.0216	0.0321	0.0277	0.0214	0.0840	0.0531	0.0423	0.1564	0.1316	0.1063
1996	0.0555	0.0410	0.0249	0.0311	0.0232	0.0170	0.0758	0.0468	0.0394	0.1313	0.1061	0.0820
1997	0.0538	0.0364	0.0211	0.0308	0.0213	0.0160	0.0712	0.0339	0.0304	0.1434	0.0984	0.0730
1998	0.0572	0.0275	0.0160	0.0332	0.0249	0.0199	0.0715	0.0350	0.0313	0.1545	0.0856	0.0620
1999	0.0584	0.0372	0.0217	0.0299	0.0218	0.0172	0.0754	0.0369	0.0327	0.1157	0.0411	0.0210
2000	0.0550	0.0333	0.0213	0.0316	0.0300	0.0248	0.0789	0.0411	0.0351	0.1068	0.0535	0.0319
2001	0.0373	0.0396	0.0233	0.0275	0.0255	0.0183	0.0716	0.0382	0.0305	0.1242	0.0618	0.0354
2002	0.0389	0.0398	0.0234	0.0249	0.0255	0.0166	0.0644	0.0327	0.0260	0.1301	0.0673	0.0432
2003	0.0418	0.0464	0.0294	0.0206	0.0245	0.0130	0.0549	0.0252	0.0173	0.1011	0.0822	0.0585
2004	0.0454	0.0521	0.0344	0.0211	0.0246	0.0132	0.0655	0.0305	0.0217	0.1017	0.0451	0.0257
2005	0.0540	0.0516	0.0305	0.0259	0.0259	0.0168	0.0680	0.0299	0.0211	0.0921	0.0389	0.0209
2006	0.0677	0.0421	0.0260	0.0271	0.0276	0.0188	0.0850	0.0319	0.0232	0.1034	0.0617	0.0415
2007	0.0625	0.0455	0.0296	0.0289	0.0312	0.0229	0.0945	0.0355	0.0248	0.1041	0.0696	0.0488
2008	0.0725	0.0358	0.0204	0.0290	0.0304	0.0225	0.0704	0.0300	0.0178	0.1023	0.0700	0.0495
2009	0.0401	0.0183	0.0072	0.0291	0.0201	0.0129	0.0362	0.0185	0.0098	0.0930	0.0711	0.0507
2010	0.0405	0.0212	0.0123	0.0297	0.0207	0.0135	0.0550	0.0276	0.0175	0.0862	0.0616	0.0426
2011	0.0590	0.0187	0.0164	0.0228	0.0269	0.0141	0.0486	0.0337	0.0160	0.1033	0.0747	0.0537
2012	0.0575	0.0184	0.0161	0.0210	0.0245	0.0117	0.0424	0.0305	0.0144	0.0917	0.0713	0.0516
2013	0.0560	0.0181	0.0158	0.0290	0.0230	0.0154	0.0596	0.0277	0.0186	#DIV/0!	#DIV/0!	#DIV/0!

	Δd	s_{PRI}-i_{PRI}	bop	Δd	s_{PRI}-i_{PRI}	bop	Δd	s_{PRI}-i_{PRI}	bop	Δd	s_{PRI}-i_{PRI}	bop
	4. New Zealand			4. France			4. Sweden			5. Colombia		
1990	0.0460	(0.0871)	(0.0411)	(0.0236)	0.0134	(0.0102)	0.0112	(0.0407)	(0.0294)	(0.0090)	0.0421	0.0331
1991	0.0229	(0.0641)	(0.0412)	(0.0142)	0.0118	(0.0024)	(0.0169)	0.0023	(0.0146)	0.0011	0.0750	0.0761
1992	(0.0262)	(0.0051)	(0.0313)	(0.0440)	0.0499	0.0059	(0.0458)	0.0234	(0.0224)	(0.0370)	0.0553	0.0182
1993	0.0012	(0.0306)	(0.0294)	(0.0638)	0.0790	0.0151	(0.1635)	0.1595	(0.0040)	(0.0083)	(0.0114)	(0.0197)
1994	0.0092	(0.0640)	(0.0549)	(0.0626)	0.0791	0.0164	(0.1397)	0.1411	0.0014	(0.0169)	(0.0686)	(0.0855)
1995	0.0053	(0.0759)	(0.0706)	(0.0721)	0.0790	0.0069	(0.0941)	0.1393	0.0451	(0.0255)	(0.0649)	(0.0904)
1996	0.0640	(0.1506)	(0.0866)	(0.0577)	0.0739	0.0163	(0.0349)	0.0786	0.0438	(0.0417)	(0.0445)	(0.0862)
1997	0.0483	(0.1219)	(0.0736)	(0.0384)	0.0736	0.0352	(0.0097)	0.0695	0.0598	(0.0411)	(0.0493)	(0.0904)
1998	0.0058	(0.0616)	(0.0558)	(0.0278)	0.0617	0.0339	0.0038	0.0551	0.0589	(0.0549)	(0.0304)	(0.0853)
1999	0.0234	(0.1076)	(0.0842)	(0.0198)	0.0605	0.0407	0.0160	0.0449	0.0609	(0.0773)	0.0628	(0.0145)
2000	0.0109	(0.0723)	(0.0614)	(0.0058)	0.0168	0.0109	0.0444	0.0159	0.0603	(0.0563)	0.0493	(0.0069)
2001	0.0068	(0.0485)	(0.0416)	(0.0079)	0.0360	0.0281	0.0233	0.0437	0.0670	(0.0371)	(0.0032)	(0.0403)
2002	0.0229	(0.0681)	(0.0452)	(0.0267)	0.0511	0.0244	(0.0080)	0.0792	0.0712	(0.0577)	0.0038	(0.0539)
2003	0.0321	(0.0957)	(0.0636)	(0.0358)	0.0569	0.0211	(0.0074)	0.0968	0.0894	(0.0283)	(0.0251)	(0.0534)
2004	0.0324	(0.1152)	(0.0827)	(0.0301)	0.0495	0.0194	0.0113	0.0788	0.0901	(0.0919)	0.1040	0.0121
2005	0.0562	(0.1659)	(0.1097)	(0.0209)	0.0315	0.0106	0.0286	0.0674	0.0960	0.1384	(0.1060)	0.0324
2006	(0.0186)	(0.0863)	(0.1049)	(0.0158)	0.0241	0.0082	0.0328	0.0726	0.1054	(0.0726)	0.0938	0.0212
2007	(0.0113)	(0.0907)	(0.1020)	(0.0193)	0.0214	0.0021	0.0488	0.0606	0.1094	(0.0160)	0.0290	0.0130
2008	(0.0241)	(0.0801)	(0.1043)	(0.0276)	0.0236	(0.0040)	0.0332	0.0819	0.1150	0.0104	0.0098	0.0201
2009	(0.0954)	0.0663	(0.0292)	(0.0743)	0.0746	0.0003	(0.0003)	0.0946	0.0943	(0.0217)	0.0301	0.0084
2010	(0.0987)	0.0982	(0.0005)	(0.0733)	0.0705	(0.0028)	0.0112	0.0836	0.0947	(0.0060)	0.0264	0.0205
2011	(0.0987)	0.0982	(0.0005)	(0.0503)	0.0466	(0.0037)	0.0114	0.0875	0.0989	(0.0095)	0.0357	0.0262
2012	(0.0987)	0.0982	(0.0005)	(0.0503)	0.0466	(0.0037)	0.0043	0.0902	0.0945	(0.0167)	0.0370	0.0203
2013	(0.0987)	0.0982	(0.0005)	(0.0503)	0.0466	(0.0037)	0.0043	0.0902	0.0945	#DIV/0!	#DIV/0!	#DIV/0!

Appendix 1, *HEU*

Table A6 Deficit & Balance of Payments to Y and, endogenous inflation rate, $HA_{r(i)}$, the growth rate of Y, g_Y^*, and endogenous rate of tech progress, g_A^*. by country, 1990-2013

	Δd	s_{PRI}-i_{PRI}	bop	Δd	s_{PRI}-i_{PRI}	bop	Δd	s_{PRI}-i_{PRI}	bop	Δd	s_{PRI}-i_{PRI}	bop
	5. Mexico			5. Germany			5. Switzerland			6. Paraguay		
1990	(0.0275)	(0.0198)	(0.0472)	(0.0183)	0.0419	0.0236	0.0046	0.0012	0.0057	0.0325	(0.0773)	(0.0448)
1991	0.0316	(0.0923)	(0.0607)	(0.0245)	0.0122	(0.0123)	(0.0112)	0.0269	0.0157	(0.0017)	(0.0722)	(0.0740)
1992	0.0451	(0.1278)	(0.0827)	(0.0268)	0.0190	(0.0079)	(0.0080)	0.0474	0.0394	0.0089	(0.1232)	(0.1142)
1993	0.0056	(0.0790)	(0.0735)	(0.0281)	0.0301	0.0020	(0.0271)	0.0830	0.0559	0.0129	(0.1304)	(0.1176)
1994	(0.0003)	(0.0843)	(0.0846)	(0.0149)	0.0181	0.0032	(0.0140)	0.0656	0.0516	0.0074	(0.2079)	(0.2005)
1995	(0.0059)	(0.0152)	(0.0211)	(0.0192)	0.0161	(0.0031)	(0.0155)	0.0732	0.0576	0.0050	(0.1772)	(0.1722)
1996	(0.0024)	(0.0203)	(0.0227)	(0.0227)	0.0269	0.0042	(0.0132)	0.0706	0.0574	0.0006	(0.1726)	(0.1721)
1997	(0.0117)	(0.0233)	(0.0350)	(0.0147)	0.0206	0.0059	(0.0144)	0.0741	0.0597	(0.0016)	(0.1667)	(0.1683)
1998	(0.0157)	(0.0417)	(0.0574)	(0.0103)	0.0140	0.0037	0.0010	0.0530	0.0540	(0.0026)	(0.0871)	(0.0897)
1999	(0.0168)	(0.0286)	(0.0454)	(0.0156)	0.0133	(0.0023)	(0.0067)	0.0689	0.0622	(0.0309)	(0.0722)	(0.1031)
2000	(0.0136)	(0.0339)	(0.0475)	(0.0143)	(0.0185)	(0.0328)	(0.0102)	0.0757	0.0655	(0.0435)	(0.0583)	(0.1018)
2001	(0.0078)	(0.0390)	(0.0468)	(0.0336)	0.0418	0.0082	0.0036	0.0520	0.0556	(0.0095)	(0.0910)	(0.1005)
2002	(0.0191)	(0.0199)	(0.0390)	(0.0430)	0.0770	0.0339	(0.0103)	0.0838	0.0735	(0.0363)	0.0060	(0.0303)
2003	(0.0107)	(0.0228)	(0.0335)	(0.0479)	0.0811	0.0332	(0.0076)	0.0815	0.0739	(0.0073)	(0.0141)	(0.0214)
2004	(0.0094)	0.0095	0.0001	(0.0458)	0.1149	0.0691	(0.0068)	0.0842	0.0774	0.0187	(0.0403)	(0.0216)
2005	(0.0073)	(0.0269)	(0.0342)	(0.0412)	0.1139	0.0726	(0.0010)	0.0767	0.0757	0.0080	(0.0605)	(0.0526)
2006	(0.0157)	(0.0191)	(0.0347)	(0.0214)	0.1073	0.0859	0.0054	0.0853	0.0907	0.0072	(0.0656)	(0.0585)
2007	(0.0169)	(0.0199)	(0.0367)	(0.0000)	0.0970	0.0970	(0.0180)	0.1335	0.1156	0.0127	(0.0566)	(0.0440)
2008	(0.0143)	(0.0265)	(0.0408)	(0.0027)	0.0882	0.0855	(0.0180)	0.1452	0.1272	0.0270	(0.0775)	(0.0505)
2009	(0.0206)	(0.0126)	(0.0332)	(0.0357)	0.1189	0.0833	0.0079	0.1159	0.1238	0.0013	0.0685	0.0698
2010	(0.0255)	(0.0023)	(0.0278)	(0.0499)	0.1365	0.0866	0.0041	0.1235	0.1275	0.0143	0.0202	0.0345
2011	(0.0243)	0.0238	(0.0005)	(0.0015)	0.0876	0.0861	0.0040	0.1249	0.1289	0.0107	(0.0078)	0.0030
2012	(0.0243)	0.0238	(0.0005)	(0.0015)	0.0876	0.0861	0.0040	0.1249	0.1289	0.0099	(0.0133)	(0.0034)
2013	(0.0243)	0.0238	(0.0005)	(0.0015)	0.0876	0.0861	0.0040	0.1249	0.1289	#DIV/0!	#DIV/0!	#DIV/0!

	Infla.rate,HA	g_Y*	g_A*	Infla.rate,HA	g_Y*	g_A*	Infla.rate,HA	g_Y*	g_A*	Infla.rate,HA	g_Y*	g_A*
	5. Mexico			5. Germany			5. Switzerland			6. Paraguay		
1990	0.3745	0.1783	0.1291	0.0537	0.0501	0.0344	0.1102	0.0859	0.0629	0.0896	0.0801	0.0401
1991	0.2806	0.1630	0.1177	0.0381	0.0496	0.0372	0.0733	0.0696	0.0478	0.1168	0.0980	0.0599
1992	0.1267	0.1446	0.1089	0.0370	0.0467	0.0351	0.0641	0.0547	0.0370	0.1083	0.0933	0.0548
1993	0.1035	0.1198	0.0869	0.0324	0.0391	0.0282	0.0568	0.0420	0.0291	0.1149	0.0945	0.0564
1994	0.0943	0.1158	0.0865	0.0408	0.0420	0.0352	0.0643	0.0460	0.0335	0.1271	0.0991	0.0583
1995	0.1127	0.1059	0.0790	0.0399	0.0429	0.0358	0.0701	0.0602	0.0320	0.1220	0.0990	0.0592
1996	0.1654	0.1329	0.0953	0.0366	0.0372	0.0308	0.0782	0.0492	0.0360	0.1240	0.0904	0.0583
1997	0.1882	0.1450	0.1044	0.0360	0.0371	0.0305	0.1002	0.0421	0.0425	0.1112	0.0847	0.0539
1998	0.1119	0.1269	0.0953	0.0375	0.0388	0.0327	0.0841	0.0499	0.0383	0.0944	0.0735	0.0451
1999	0.1076	0.1173	0.0879	0.0253	0.0298	0.0248	0.0772	0.0444	0.0341	0.0833	0.0660	0.0374
2000	0.1005	0.1177	0.0851	0.0253	0.0366	0.0307	0.0827	0.0470	0.0341	0.0734	0.0497	0.0240
2001	0.0723	0.0911	0.0691	0.0183	0.0282	0.0173	0.0650	0.0454	0.0315	0.0767	0.0537	0.0278
2002	0.0688	0.0857	0.0649	0.0236	0.0216	0.0172	0.0590	0.0379	0.0254	0.0704	0.0455	0.0213
2003	0.0903	0.0984	0.0745	0.0236	0.0192	0.0163	0.0498	0.0351	0.0223	0.0939	0.0575	0.0317
2004	0.1458	0.1061	0.0740	0.0246	0.0131	0.0112	0.0561	0.0355	0.0236	0.1063	0.0657	0.0388
2005	0.0920	0.0982	0.0725	0.0262	0.0119	0.0109	0.0573	0.0365	0.0242	0.1054	0.0684	0.0415
2006	0.1048	0.1036	0.0740	0.0323	0.0125	0.0122	0.0787	0.0395	0.0260	0.1031	0.0685	0.0405
2007	0.1005	0.1012	0.0716	0.0449	0.0167	0.0160	0.1007	0.0388	0.0249	0.1078	0.0596	0.0348
2008	0.0922	0.0978	0.0688	0.0415	0.0171	0.0170	0.0903	0.0371	0.0205	0.1154	0.0577	0.0335
2009	0.0681	0.0812	0.0573	0.0335	0.0069	0.0084	0.0665	0.0286	0.0168	0.0888	0.0341	0.0138
2010	0.0709	0.0802	0.0560	0.0329	0.0101	0.0108	0.0724	0.0281	0.0173	0.0805	0.0512	0.0302
2011	0.0777	0.0738	0.0499	0.0370	0.0126	0.0144	0.0774	0.0295	0.0180	0.0991	0.0521	0.0308
2012	0.0846	0.0655	0.0535	0.0359	0.0106	0.0120	0.0908	0.0276	0.0206	0.2882	0.1622	0.0971
2013	0.0776	0.0615	0.0502	0.0312	0.0108	0.0107	0.0877	0.0269	0.0200	#DIV/0!	#DIV/0!	#DIV/0!

Table A7 Deficit & Balance of Payments to Y and, endogenous inflation rate, $HA_{r(i)}$, the growth rate of Y, g_Y^*, and endogenous rate of tech progress, g_A^*. by country, 1990-2013

	Δd	s_{PRI}-i_{PRI}	bop	Δd	s_{PRI}-i_{PRI}	bop	Δd	s_{PRI}-i_{PRI}	bop	Δd	s_{PRI}-i_{PRI}	bop
	6. Bangradesh			6. Greece			6. the U K			7. Peru		
1990	(0.0084)	(0.0502)	(0.0586)	(0.1517)	0.0368	(0.1149)	0.0082	(0.0368)	(0.0286)	(0.0245)	0.0214	(0.0031)
1991	(0.0047)	(0.0326)	(0.0373)	(0.1202)	0.0142	(0.1060)	(0.0112)	(0.0017)	(0.0130)	(0.0246)	(0.0326)	(0.0573)
1992	(0.0103)	(0.0148)	(0.0251)	(0.0799)	(0.0219)	(0.1018)	(0.0569)	0.0473	(0.0096)	(0.0411)	(0.0185)	(0.0595)
1993	(0.0089)	(0.0174)	(0.0262)	(0.1266)	0.0369	(0.0898)	(0.0731)	0.0628	(0.0103)	(0.0331)	(0.0408)	(0.0739)
1994	0.0012	(0.0201)	(0.0189)	(0.2336)	0.1523	(0.0813)	(0.0586)	0.0631	0.0044	0.0240	(0.0784)	(0.0545)
1995	(0.0047)	(0.0326)	(0.0374)	(0.1312)	0.0856	(0.0456)	(0.0612)	0.0520	(0.0092)	(0.0377)	(0.0393)	(0.0770)
1996	(0.0013)	(0.0501)	(0.0514)	(0.1066)	0.0496	(0.0570)	(0.0406)	0.0334	(0.0071)	(0.0161)	(0.0511)	(0.0672)
1997	(0.0084)	(0.0219)	(0.0303)	(0.0742)	0.0287	(0.0455)	(0.0221)	0.0249	0.0028	(0.0089)	(0.0508)	(0.0597)
1998	(0.0042)	(0.0143)	(0.0185)	(0.0579)	0.0025	(0.0553)	0.0063	(0.0042)	0.0020	(0.0126)	(0.0573)	(0.0699)
1999	(0.0051)	(0.0169)	(0.0220)	(0.0493)	(0.0214)	(0.0708)	0.0131	(0.0347)	(0.0216)	(0.0350)	(0.0004)	(0.0355)
2000	(0.0066)	(0.0112)	(0.0178)	(0.0636)	(0.0695)	(0.1331)	0.0167	(0.0446)	(0.0279)	(0.0311)	0.0008	(0.0304)
2001	(0.0079)	(0.0239)	(0.0318)	(0.0349)	(0.1032)	(0.1381)	0.0123	(0.0362)	(0.0239)	(0.0312)	0.0036	(0.0276)
2002	(0.0021)	(0.0001)	(0.0022)	(0.0360)	(0.1100)	(0.1460)	(0.0173)	0.0015	(0.0157)	(0.0238)	0.0057	(0.0182)
2003	(0.0013)	(0.0020)	(0.0034)	(0.0413)	(0.0996)	(0.1409)	(0.0318)	0.0200	(0.0118)	(0.0195)	0.0116	(0.0079)
2004	(0.0080)	0.0071	(0.0009)	(0.0602)	(0.0575)	(0.1177)	(0.0303)	0.0157	(0.0147)	(0.0139)	0.0473	0.0334
2005	(0.0123)	(0.0026)	(0.0149)	(0.0378)	(0.0800)	(0.1179)	(0.0422)	0.0221	(0.0201)	(0.0078)	0.0672	0.0594
2006	(0.0158)	0.0188	0.0030	(0.0483)	(0.0948)	(0.1431)	(0.0216)	(0.0077)	(0.0293)	0.0158	0.0751	0.0909
2007	(0.0147)	0.0206	0.0060	(0.0565)	(0.1225)	(0.1790)	(0.0217)	0.0011	(0.0205)	0.0204	0.0465	0.0669
2008	(0.0105)	0.0155	0.0050	(0.0887)	(0.1057)	(0.1944)	(0.0427)	0.0359	(0.0068)	0.0245	(0.0216)	0.0029
2009	(0.0045)	0.0261	0.0216	(0.1592)	0.0065	(0.1526)	(0.1118)	0.1049	(0.0069)	0.0217	0.0135	0.0351
2010	(0.0127)	(0.0024)	(0.0151)	(0.1199)	(0.0127)	(0.1325)	(0.0998)	0.0850	(0.0147)	0.0077	0.0210	0.0287
2011	(0.0127)	(0.0024)	(0.0151)	(0.1210)	0.0003	(0.1207)	(0.0770)	0.0768	(0.0002)	0.0069	(0.0308)	(0.0240)
2012	(0.0127)	(0.0024)	(0.0151)	(0.1210)	0.0003	(0.1207)	(0.0608)	0.0335	(0.0273)	0.0063	0.0140	0.0203
2013	(0.0127)	(0.0024)	(0.0151)	(0.1210)	0.0003	(0.1207)	(0.0608)	0.0335	(0.0273)	#DIV/0!	#DIV/0!	#DIV/0!

	Infla.rate,HA	g_Y*	g_A*	Infla.rate,HA	g_Y*	g_A*	Infla.rate,HA	g_Y*	g_A*	Infla.rate,HA	g_Y*	g_A*
	6. Bangradesh			6. Greece			6. the U K			7. Peru		
1990	0.1125	0.0764	0.0407	0.1048	0.0668	0.0498	0.1247	0.0478	0.0405	0.6217	0.4999	0.0199
1991	0.0858	0.0787	0.0443	0.1001	0.0724	0.0539	0.1422	0.0294	0.0236	0.0693	0.0628	0.0368
1992	0.0798	0.0706	0.0390	0.1118	0.0677	0.0512	0.1561	0.0189	0.0137	0.1157	0.0746	0.0460
1993	0.0754	0.0424	0.0141	0.1223	0.0591	0.0443	0.1570	0.0184	0.0129	0.1521	0.0944	0.0709
1994	0.0734	0.0563	0.0249	0.1259	0.0555	0.0423	0.1402	0.0184	0.0133	0.1264	0.1109	0.0835
1995	0.0948	0.0545	0.0247	0.0781	0.0479	0.0213	0.1255	0.0381	0.0309	0.1025	0.1316	0.0879
1996	0.0898	0.0728	0.0401	0.1210	0.0488	0.0346	0.1255	0.0360	0.0290	0.1080	0.1024	0.0768
1997	0.0683	0.0778	0.0439	0.0941	0.0996	0.0825	0.1109	0.0369	0.0289	0.0879	0.1092	0.0768
1998	0.0626	0.0789	0.0451	0.0883	0.0991	0.0837	0.1156	0.0354	0.0288	0.0833	0.0959	0.0706
1999	0.0636	0.0791	0.0483	0.0858	0.1041	0.0871	0.1245	0.0423	0.0342	0.0710	0.0766	0.0538
2000	0.0678	0.0554	0.0324	0.1247	0.0674	0.0490	0.1324	0.0403	0.0321	0.0677	0.0685	0.0475
2001	0.0680	0.0296	0.0093	0.0119	0.0315	0.0257	0.1341	0.0341	0.0255	0.0651	0.0575	0.0383
2002	0.0478	0.0256	0.0067	0.0122	0.0325	0.0275	0.1375	0.0259	0.0183	0.0598	0.0557	0.0374
2003	0.0703	0.0665	0.0441	0.0170	0.0368	0.0317	0.1357	0.0240	0.0164	0.0568	0.0543	0.0372
2004	0.0708	0.0694	0.0472	0.0200	0.0203	0.0171	0.1368	0.0254	0.0171	0.0606	0.0503	0.0340
2005	0.0726	0.0779	0.0553	0.0215	0.0198	0.0164	0.1434	0.0242	0.0156	0.0751	0.0502	0.0336
2006	0.0711	0.0694	0.0482	0.0201	0.0258	0.0219	0.1397	0.0344	0.0240	0.1508	0.0649	0.0419
2007	0.0724	0.0684	0.0479	0.0222	0.0300	0.0239	0.1266	0.0344	0.0241	0.1657	0.0802	0.0531
2008	0.0745	0.0692	0.0490	0.0306	0.0282	0.0219	0.1183	0.0207	0.0122	0.1248	0.0951	0.0689
2009	0.0725	0.0598	0.0410	0.0340	0.0185	0.0126	0.0581	0.0088	0.0021	0.0742	0.0591	0.0422
2010	0.0737	0.0717	0.0520	0.0304	0.0165	0.0121	0.1142	0.0173	0.0084	0.1216	0.0831	0.0573
2011	0.0810	0.0610	0.0553	0.0284	0.0135	0.0098	0.0332	0.0154	0.0022	0.1557	0.1147	0.0794
2012	0.0730	0.0575	0.0522	0.0255	0.0052	0.0039	0.0978	0.0216	0.0080	0.1278	0.0925	0.0570
2013	0.0664	0.0543	0.0493	0.0267	0.0052	0.0041	0.1480	0.0190	0.0106	#DIV/0!	#DIV/0!	#DIV/0!

Appendix 1, *HEU*

Table A8 Deficit & Balance of Payments to Y and, endogenous inflation rate, $HA_{r(i)}$, the growth rate of Y, g_Y^*, and endogenous rate of tech progress, g_A^*. by country, 1990-2013

	Δd	s_{PRI}-i_{PRI}	bop	Δd	s_{PRI}-i_{PRI}	bop	Δd	s_{PRI}-i_{PRI}	bop	Δd	s_{PRI}-i_{PRI}	bop
	7. China			7. Ireland			1. Bulgaria			8. Iran		
1990	(0.0080)	0.0357	0.0278	(0.0195)	(0.0481)	(0.0676)	0.0000	0.0000	0.0000	(0.0200)	(0.1070)	(0.1270)
1991	(0.0111)	0.0401	0.0290	(0.0094)	(0.0463)	(0.0557)	0.0000	0.0000	0.0000	(0.0248)	(0.1086)	(0.1335)
1992	(0.0100)	0.0207	0.0107	(0.0263)	(0.0085)	(0.0347)	0.0000	0.0000	0.0000	(0.0125)	0.0092	(0.0033)
1993	(0.0085)	(0.0112)	(0.0198)	(0.0091)	0.0070	(0.0021)	0.0000	0.0000	0.0000	(0.0077)	0.0359	0.0282
1994	(0.0123)	0.0259	0.0136	(0.0104)	0.0053	(0.0051)	0.0000	0.0000	0.0000	0.0027	0.1989	0.2016
1995	(0.0100)	0.0271	0.0171	(0.0070)	0.0086	0.0016	(0.0505)	0.0035	(0.0470)	0.0015	0.0860	0.0874
1996	(0.0076)	0.0252	0.0176	0.0025	0.0015	0.0040	(0.0179)	0.0321	0.0142	0.0022	0.0557	0.0579
1997	(0.0074)	0.0587	0.0513	0.0062	0.0012	0.0074	0.0225	(0.0093)	0.0133	(0.0116)	0.0336	0.0220
1998	(0.0110)	0.0627	0.0517	0.0227	(0.0317)	(0.0089)	0.0297	(0.0524)	(0.0227)	(0.0586)	0.0372	(0.0214)
1999	(0.0196)	0.0522	0.0326	0.0536	(0.0530)	0.0006	0.0163	(0.0957)	(0.0794)	(0.0024)	0.0737	0.0714
2000	(0.0254)	0.0498	0.0244	0.0461	(0.0498)	(0.0037)	0.0064	(0.0938)	(0.0873)	(0.0076)	0.0668	0.0591
2001	(0.0233)	0.0448	0.0215	0.0423	(0.0406)	0.0017	0.0208	(0.1298)	(0.1090)	0.0505	(0.0291)	0.0215
2002	(0.0265)	0.0524	0.0259	0.0264	(0.0245)	0.0018	(0.0003)	(0.0673)	(0.0676)	0.0472	(0.0214)	0.0258
2003	(0.0218)	0.0439	0.0221	0.0296	(0.0148)	0.0148	0.0082	(0.1119)	(0.1037)	0.0445	(0.0453)	(0.0008)
2004	(0.0132)	0.0389	0.0257	0.0383	(0.0315)	0.0067	0.0372	(0.1488)	(0.1116)	0.0137	(0.0095)	0.0042
2005	(0.0124)	0.0680	0.0556	0.0420	(0.0652)	(0.0233)	0.0696	(0.2356)	(0.1660)	(0.0107)	0.0978	0.0871
2006	(0.0078)	0.0855	0.0778	0.0590	(0.0976)	(0.0386)	0.0369	(0.2656)	(0.2287)	(0.0351)	0.1265	0.0914
2007	0.0059	0.0842	0.0902	0.0364	(0.0927)	(0.0563)	0.0390	(0.2834)	(0.2445)	(0.0369)	0.1573	0.1204
2008	(0.0042)	0.0848	0.0806	(0.0381)	(0.0182)	(0.0563)	0.0296	(0.3160)	(0.2864)	(0.0545)	0.1374	0.0829
2009	(0.0226)	0.0661	0.0436	(0.1318)	0.1169	(0.0149)	(0.0022)	(0.1209)	(0.1231)	(0.0440)	0.0852	0.0412
2010	(0.0169)	0.0560	0.0392	(0.3226)	0.3530	0.0304	(0.0456)	(0.0042)	(0.0498)	(0.0140)	0.0822	0.0682
2011	(0.1140)	0.1398	0.0259	(0.1363)	0.1659	0.0295	(0.0456)	(0.0042)	(0.0498)	(0.0140)	0.0822	0.0682
2012	(0.1140)	0.1398	0.0259	(0.1363)	0.1659	0.0295	(0.0456)	(0.0042)	(0.0498)	(0.0140)	0.0822	0.0682
2013	(0.1140)	0.1398	0.0259	(0.1363)	0.1659	0.0295	(0.0456)	(0.0042)	(0.0498)	(0.0140)	0.0822	0.0682

	Infla.rate,HA	g_Y*	g_A*	Infla.rate,HA	g_Y*	g_A*	Infla.rate,HA	g_Y*	g_A*	Infla.rate,HA	g_Y*	g_A*
	7. China			7. Ireland			1. Bulgaria			8. Iran		
1990	0.2116	0.1676	0.0986	0.0701	0.0802	0.0716				0.0837	0.1313	0.0846
1991	0.1946	0.1575	0.0923	0.0479	0.0687	0.0554				0.1226	0.1747	0.1106
1992	0.1876	0.1595	0.0945	0.0413	0.0595	0.0451				0.1895	0.1651	0.1021
1993	0.2093	0.1875	0.1063	0.0552	0.0541	0.0444				0.1273	0.1021	0.0671
1994	0.2222	0.1825	0.1011	0.0536	0.0541	0.0446				0.2094	0.0743	0.0417
1995	0.1842	0.1525	0.0929	0.0801	0.0725	0.0484	0.4228	0.1736	0.1579	0.1426	0.1496	0.0574
1996	0.1771	0.1482	0.0900	0.0961	0.0756	0.0514	0.4449	0.1199	0.1140	0.2614	0.1653	0.1042
1997	0.1717	0.1337	0.0786	0.1374	0.0901	0.0556	2.2194	0.0304	0.0340	0.2142	0.1639	0.1031
1998	0.1530	0.1217	0.0721	0.1446	0.1006	0.0588	0.7024	0.0882	0.0876	0.1400	0.1256	0.0863
1999	0.1367	0.1155	0.0706	0.0293	0.0325	0.0146	0.7194	0.0877	0.0809	0.1828	0.1145	0.0742
2000	0.1251	0.1130	0.0674	0.0442	0.0425	0.0166	0.4783	0.0948	0.0872	0.2203	0.1425	0.0919
2001	0.1254	0.1114	0.0675	0.0382	0.0437	0.0147	0.3516	0.1054	0.0954	0.2115	0.1434	0.1032
2002	0.1269	0.1112	0.0659	0.0437	0.0465	0.0163	0.4387	0.0539	0.0501	0.2365	0.1737	0.1089
2003	0.1350	0.1184	0.0670	0.0440	0.0452	0.0158	0.3630	0.0767	0.0675	0.2255	0.1842	0.1128
2004	0.1464	0.1258	0.0679	0.0439	0.0479	0.0158	0.2186	0.0995	0.0922	0.2150	0.1754	0.1080
2005	0.1512	0.1209	0.0633	0.0580	0.0561	0.0206	0.2194	0.1142	0.1015	0.2146	0.1387	0.0831
2006	0.1567	0.1187	0.0603	0.0576	0.0581	0.0228	0.1909	0.1380	0.1205	0.2138	0.1378	0.0816
2007	(1.3208)	7.0324	1.3443	0.0522	0.0563	0.0258	0.2086	0.1269	0.1059	0.2514	0.1491	0.0823
2008	(4.2659)	1.0553	0.5332	0.0273	0.0428	0.0216	0.1051	0.1579	0.1448	0.2220	0.1498	0.0856
2009	1.3797	0.5584	0.2644	0.0189	0.0317	0.0135	0.0668	0.0987	0.0948	0.1802	0.1438	0.0842
2010	0.6435	0.3766	0.1772	0.0161	0.0256	0.0089	0.0712	0.0735	0.0721	0.2001	0.1494	0.0810
2011	0.4430	0.3043	0.1400	0.0238	0.0292	0.0105	0.0584	0.0707	0.0632	0.1830	0.1274	0.0763
2012	0.3162	0.2323	0.1091	0.0302	0.0265	0.0095	0.0528	0.0660	0.0590	0.1575	0.1130	0.0677
2013	0.2437	0.1885	0.0885	0.0504	0.0250	0.0155	0.0482	0.0619	0.0554	0.1382	0.1015	0.0608

Table A9 Deficit & Balance of Payments to Y and, endogenous inflation rate, $HA_{r(i)}$, the growth rate of Y, g_Y^*, and endogenous rate of tech progress, g_A^*. by country, 1990-2013

	Δd	s_{PRI}-i_{PRI}	bop	Δd	s_{PRI}-i_{PRI}	bop	Δd	s_{PRI}-i_{PRI}	bop	Δd	s_{PRI}-i_{PRI}	bop
	8. India			8. Italy			2. Czech Republic			9. Kazakhstan		
1990	(0.0850)	0.0544	(0.0305)	(0.1231)	0.1023	(0.0209)						
1991	(0.0609)	0.0438	(0.0171)	(0.1162)	0.0901	(0.0261)						
1992	(0.0592)	0.0335	(0.0257)	(0.0961)	0.0916	(0.0045)						
1993	(0.0776)	0.0623	(0.0153)	(0.0788)	0.1080	0.0292						
1994	(0.0612)	0.0438	(0.0175)	(0.0746)	0.1034	0.0288						
1995	(0.0623)	0.0335	(0.0288)	(0.0762)	0.1056	0.0293	0.0050	(0.0517)	(0.0466)	(0.0267)	(0.0321)	(0.0588)
1996	(0.0594)	0.0334	(0.0260)	(0.0813)	0.1238	0.0425	(0.0011)	(0.0741)	(0.0752)	(0.0489)	0.0303	(0.0186)
1997	(0.0345)	0.0086	(0.0259)	(0.0173)	0.0538	0.0365	(0.0094)	(0.0630)	(0.0724)	(0.0443)	(0.0011)	(0.0454)
1998	(0.0408)	0.0098	(0.0310)	(0.0260)	0.0534	0.0274	(0.0171)	(0.0174)	(0.0345)	(0.0485)	(0.0001)	(0.0485)
1999	(0.0359)	0.0065	(0.0294)	(0.0112)	0.0291	0.0179	(0.0153)	(0.0226)	(0.0379)	(0.0370)	0.0717	0.0348
2000	(0.0420)	0.0203	(0.0217)	(0.0176)	0.0198	0.0023	(0.0222)	(0.0335)	(0.0557)	(0.0014)	0.1003	0.0989
2001	(0.0478)	0.0286	(0.0192)	(0.0487)	0.0567	0.0080	(0.0308)	(0.0317)	(0.0625)	(0.0046)	(0.0664)	(0.0710)
2002	(0.0514)	0.0332	(0.0182)	(0.0310)	0.0340	0.0031	(0.0210)	(0.0545)	(0.0756)	(0.0041)	(0.0510)	(0.0551)
2003	(0.0396)	0.0186	(0.0210)	(0.0151)	0.0132	(0.0019)	(0.0461)	(0.0257)	(0.0718)	(0.0115)	0.0082	(0.0033)
2004	(0.0361)	0.0085	(0.0276)	(0.0377)	0.0377	0.0000	(0.0368)	(0.0230)	(0.0598)	(0.0035)	0.0255	0.0220
2005	(0.0391)	(0.0034)	(0.0425)	(0.0481)	0.0373	(0.0108)	(0.0207)	0.0063	(0.0144)	0.0068	(0.0131)	(0.0064)
2006	(0.0275)	(0.0207)	(0.0482)	(0.0285)	0.0075	(0.0210)	(0.0199)	0.0025	(0.0175)	0.0088	(0.0199)	(0.0110)
2007	(0.0314)	(0.0227)	(0.0541)	(0.0254)	0.0107	(0.0147)	(0.0023)	(0.0203)	(0.0226)	(0.0190)	(0.0486)	(0.0676)
2008	(0.0681)	0.0007	(0.0673)	(0.0348)	0.0140	(0.0208)	(0.0322)	0.0327	0.0005	0.0527	0.0090	0.0616
2009	(0.0794)	0.0076	(0.0718)	(0.0576)	0.0396	(0.0181)	(0.0684)	0.0644	(0.0040)	(0.0155)	(0.0180)	(0.0336)
2010	(0.0595)	0.0048	(0.0547)	(0.0501)	0.0151	(0.0350)	(0.0608)	0.0407	(0.0201)	(0.0082)	0.0355	0.0273
2011	(0.0544)	(0.0125)	(0.0669)	(0.0464)	0.0161	(0.0303)	(0.0608)	0.0407	(0.0201)	(0.0017)	0.1338	0.1320
2012	(0.0544)	(0.0125)	(0.0669)	(0.0464)	0.0161	(0.0303)	(0.0608)	0.0407	(0.0201)	0.0108	(0.0466)	(0.0358)
2013	(0.0544)	(0.0125)	(0.0669)	(0.0464)	0.0161	(0.0303)	(0.0608)	0.0407	(0.0201)	#DIV/0!	#DIV/0!	#DIV/0!

	Infla.rate,HA	g_Y*	g_A*	Infla.rate,HA	g_Y*	g_A*	Infla.rate,HA	g_Y*	g_A*	Infla.rate,HA	g_Y*	g_A*
	8. India			8. Italy			2. Czech Republic			9. Kazakhstan		
1990	0.0507	0.0748	0.0473	0.0743	0.0663	0.0578						
1991	0.0522	0.0695	0.0440	0.0945	0.0567	0.0666						
1992	0.0592	0.0815	0.0544	0.0695	0.0488	0.0426						
1993	0.0626	0.0806	0.0533	0.0631	0.0358	0.0293						
1994	0.0866	0.0967	0.0651	0.0642	0.0369	0.0311						
1995	0.0496	0.0548	0.0274	0.0812	0.0543	0.0466	0.8259	0.2901	0.1885	0.0573	0.0525	0.0522
1996	0.0413	0.0600	0.0228	0.0692	0.0397	0.0345	0.4447	0.2357	0.1613	0.1067	0.0307	0.0401
1997	0.0439	0.0638	0.0272	0.0788	0.0377	0.0387	0.1922	0.1581	0.1221	0.1518	0.0327	0.0411
1998	0.0571	0.0560	0.0244	0.0666	0.0364	0.0340	0.1063	0.0923	0.0836	0.1921	0.0255	0.0334
1999	0.1045	0.1114	0.0777	0.0685	0.0284	0.0257	0.1684	0.1191	0.0969	0.1131	0.0279	0.0364
2000	0.0947	0.1020	0.0699	0.0724	0.0323	0.0296	0.1803	0.1283	0.0989	0.1753	0.0368	0.0385
2001	0.0891	0.0951	0.0664	0.0600	0.0353	0.0284	0.1509	0.1193	0.0913	0.1817	0.1192	0.1249
2002	0.1011	0.0987	0.0674	0.0539	0.0372	0.0272	0.0708	0.0863	0.0769	0.1534	0.1326	0.1027
2003	0.1269	0.1091	0.0717	0.0593	0.0337	0.0258	0.0808	0.0895	0.0763	0.1657	0.1274	0.0917
2004	0.1251	0.1147	0.0755	0.1521	0.0215	0.0454	0.0917	0.0893	0.0720	0.1897	0.1351	0.0934
2005	0.0885	0.0814	0.0531	0.0074	0.0480	0.0044	0.1048	0.0793	0.0591	0.2195	0.1750	0.1151
2006	0.0963	0.0917	0.0612	0.0551	0.0397	0.0290	0.1113	0.0828	0.0586	0.2506	0.2036	0.1234
2007	0.1011	0.0990	0.0667	0.0517	0.0381	0.0276	0.1138	0.0853	0.0581	0.2070	0.2021	0.1264
2008	0.1019	0.1047	0.0714	0.0548	0.0347	0.0247	0.0841	0.0668	0.0477	0.2372	0.1674	0.0950
2009	0.0951	0.0982	0.0670	0.0614	0.0211	0.0132	0.0556	0.0546	0.0412	0.1162	0.1176	0.0812
2010	0.1006	0.0980	0.0666	0.0662	0.0279	0.0196	0.0538	0.0563	0.0434	0.1685	0.1382	0.0855
2011	0.1024	0.1052	0.0720	0.0575	0.0256	0.0144	0.0539	0.0524	0.0437	0.2025	0.1182	0.0676
2012	0.1027	0.0912	0.0729	0.0465	0.0159	0.0083	0.0505	0.0498	0.0415	0.2000	0.1870	0.1063
2013	0.0910	0.0836	0.0668	0.0465	0.0159	0.0083	0.0476	0.0475	0.0395	#DIV/0!	#DIV/0!	#DIV/0!

Appendix 1, *HEU*

Table A10 Deficit & Balance of Payments to Y and, endogenous inflation rate, $HA_{r(i)}$, the growth rate of Y, g_Y^*, and endogenous rate of tech progress, g_A^*. by country, 1990-2013

	Δd	s_{PRI}-i_{PRI}	bop	Δd	s_{PRI}-i_{PRI}	bop	Δd	s_{PRI}-i_{PRI}	bop	Δd	s_{PRI}-i_{PRI}	bop
	9. Indonesia			9. Luxemburg			3. Hungary			10. Kuwait		
1990	0.0042	(0.0495)	(0.0453)				(0.0146)	0.0453	0.0307	(0.2063)	0.5228	0.3166
1991	0.0044	(0.0484)	(0.0440)				(0.0266)	0.0156	(0.0110)	(0.1792)	(0.4976)	(0.6768)
1992	(0.0042)	(0.0182)	(0.0225)				(0.0340)	0.0311	(0.0029)	0.1886	(0.0496)	0.1390
1993	0.0068	(0.0159)	(0.0091)				(0.0752)	(0.0183)	(0.0935)	(0.1520)	0.3658	0.2138
1994	0.0104	(0.0275)	(0.0171)				(0.0691)	(0.0044)	(0.0735)	(0.1455)	0.3831	0.2376
1995	0.0241	(0.0705)	(0.0464)	0.0182	0.2760	0.2942	(0.0736)	0.0731	(0.0006)	(0.0844)	0.3959	0.3115
1996	0.0126	(0.0483)	(0.0357)	0.1168	0.1606	0.2774	(0.0377)	0.0433	0.0056	0.1189	0.2058	0.3247
1997	(0.0073)	(0.0275)	(0.0348)	0.0349	0.1810	0.2159	(0.0548)	0.0673	0.0125	0.1253	0.2477	0.3730
1998	(0.0328)	0.0785	0.0457	0.0319	0.1669	0.1988	(0.0763)	0.0588	(0.0175)	(0.1857)	0.3547	0.1690
1999	(0.0125)	0.0176	0.0051	0.0669	0.1341	0.2010	(0.0890)	0.0558	(0.0332)	0.0690	0.1887	0.2578
2000	(0.0429)	0.0847	0.0418	0.0901	0.1281	0.2182	(0.0477)	0.0034	(0.0443)	0.1853	0.3083	0.4936
2001	(0.0243)	0.0728	0.0485	0.0764	(0.0026)	0.0737	(0.0519)	0.0369	(0.0151)	0.3281	(0.0004)	0.3277
2002	(0.0139)	0.0494	0.0355	0.0588	(0.0310)	0.0278	(0.0892)	0.0661	(0.0231)	0.1251	0.0593	0.1844
2003	(0.0193)	0.0576	0.0384	0.0366	(0.0237)	0.0129	(0.0878)	0.0402	(0.0476)	0.0964	0.1747	0.2711
2004	(0.0144)	0.0610	0.0466	0.0148	0.1109	0.1257	(0.0779)	0.0374	(0.0405)	0.0790	0.2866	0.3655
2005	(0.0039)	(0.0041)	(0.0080)	0.0296	0.0951	0.1247	(0.0868)	0.0643	(0.0225)	0.1137	0.3764	0.4901
2006	(0.0108)	0.0235	0.0127	0.0408	0.0510	0.0918	(0.0919)	0.0794	(0.0125)	0.3881	0.1853	0.5734
2007	(0.0087)	0.0080	(0.0008)	0.0585	0.0956	0.1541	(0.0519)	0.0650	0.0131	0.2377	0.2668	0.5045
2008	(0.0194)	(0.0080)	(0.0274)	0.0540	0.0500	0.1040	(0.0484)	0.0545	0.0061	0.3521	0.1767	0.5288
2009	(0.0171)	0.0095	(0.0076)	0.0135	(0.0321)	(0.0185)	(0.0516)	0.1116	0.0599	0.1285	0.2736	0.4021
2010	(0.0068)	(0.0057)	(0.0124)	0.0157	(0.0101)	0.0056	(0.0636)	0.1478	0.0842	0.2999	0.1705	0.4705
2011	(0.0142)	(0.0016)	(0.0158)	0.0205	0.0160	0.0365	(0.0636)	0.1478	0.0842	0.2700	0.3166	0.5866
2012	(0.0142)	(0.0016)	(0.0158)	0.0205	0.0160	0.0365	(0.0636)	0.1478	0.0842	0.0825	0.4727	0.5552
2013	(0.0142)	(0.0016)	(0.0158)	0.0205	0.0160	0.0365	(0.0636)	0.1478	0.0842	#DIV/0!	#DIV/0!	#DIV/0!

	Infla.rate,HA	g_Y^*	g_A^*	Infla.rate,HA	g_Y^*	g_A^*	Infla.rate,HA	g_Y^*	g_A^*	Infla.rate,HA	g_Y^*	g_A^*
	9. Indonesia			9. Luxemburg			3. Hungary			10. Kuwait		
1990	0.3725	0.2086	0.1111				0.1002	0.0556	0.0527	0.2525	(0.0449)	(0.0708)
1991	0.3070	0.1831	0.1005				0.0974	0.0434	0.0397	0.0719	0.2858	0.2748
1992	0.3301	0.1855	0.0828				0.1031	0.0506	0.0486	(0.1144)	(0.1132)	0.2650
1993	0.1795	0.1223	0.0726				0.2484	0.0477	0.0395	0.1296	(0.0244)	(0.0461)
1994	0.1684	0.1213	0.0725				0.1815	0.0608	0.0542	(0.9880)	0.0099	(0.0764)
1995	0.1688	0.1332	0.0809	0.0388	0.0166	0.0065	0.1048	0.0626	0.0502	0.3309	(0.0391)	(0.0850)
1996	0.1623	0.1232	0.0774	0.0464	0.0229	0.0106	0.1265	0.0535	0.0503	0.2696	(0.0603)	(0.0555)
1997	0.1779	0.1273	0.0769	0.0526	0.0402	0.0235	0.1304	0.0635	0.0585	0.3686	(0.0862)	(0.1064)
1998	0.1030	0.0715	0.0475	0.0580	0.0464	0.0292	0.1289	0.0783	0.0739	0.1637	(0.0101)	(0.0629)
1999	0.0625	0.0631	0.0440	0.0949	0.0656	0.0396	0.1231	0.0753	0.0711	0.1827	(0.0096)	(0.0596)
2000	0.1941	0.1456	0.0561	0.1131	0.0665	0.0404	0.1152	0.0868	0.0807	0.1657	(0.0258)	(0.0611)
2001	0.2481	0.1175	0.0692	0.0857	0.0953	0.0657	0.1210	0.0596	0.0567	0.2362	(0.0093)	(0.0442)
2002	0.1260	0.0836	0.0568	0.0797	0.1031	0.0717	0.1165	0.0686	0.0650	(0.2930)	0.0045	(0.0302)
2003	0.0829	0.0634	0.0443	0.0902	0.1118	0.0716	0.1755	0.0486	0.0442	(0.2662)	0.0066	(0.0220)
2004	0.0884	0.0642	0.0432	0.0815	0.0757	0.0478	0.1381	0.0555	0.0518	(0.4154)	0.0069	(0.0183)
2005	0.1328	0.1046	0.0746	0.0898	0.0856	0.0467	0.1447	0.0409	0.0375	(1.8123)	0.0029	(0.0140)
2006	0.1645	0.1060	0.0724	0.1007	0.1045	0.0500	0.1116	0.0783	0.0734	0.9920	(0.0107)	(0.0187)
2007	0.1569	0.1091	0.0760	0.1091	0.0941	0.0407	0.1018	0.0619	0.0576	(0.5734)	0.0084	(0.0080)
2008	0.2142	0.1412	0.0915	0.0895	0.0925	0.0426	0.0930	0.0611	0.0570	(0.3214)	0.0132	(0.0049)
2009	0.2101	0.1292	0.0808	0.0712	0.0983	0.0553	0.0901	0.0353	0.0336	(0.1047)	0.0159	(0.0047)
2010	0.1983	0.1383	0.0863	0.0711	0.1010	0.0445	0.0982	0.0290	0.0277	0.0784	0.0274	0.0034
2011	0.1951	0.1436	0.0875	0.0762	0.0925	0.0423	0.0873	0.0290	0.0258	(2.8397)	0.0031	(0.0077)
2012	0.1754	0.1229	0.0815	0.0740	0.0895	0.0436	0.0832	0.0282	0.0251	(0.5667)	0.0184	(0.0092)
2013	0.1505	0.1095	0.0726	0.0813	0.0805	0.0481	0.0795	0.0274	0.0244	#DIV/0!	#DIV/0!	#DIV/0!

Table A11 Deficit & Balance of Payments to Y and, endogenous inflation rate, $HA_{r(i)}$, the growth rate of Y, g_Y^*, and endogenous rate of tech progress, g_A^*. by country, 1990-2013

	Δd	s_{PRI}-i_{PRI}	bop	Δd	s_{PRI}-i_{PRI}	bop	Δd	s_{PRI}-i_{PRI}	bop	Δd	s_{PRI}-i_{PRI}	bop
	10. Japan			10. Netherlands			4. Latvia			11. Pakistan		
1990	(0.0643)	0.0789	0.0147	(0.0487)	0.0967	0.0480				(0.0602)	0.0474	(0.0128)
1991	(0.0605)	0.0885	0.0280	(0.0297)	0.0790	0.0493				(0.0843)	0.0931	0.0088
1992	(0.0606)	0.0978	0.0372	(0.0365)	0.0813	0.0448				(0.0880)	0.0643	(0.0236)
1993	(0.0606)	0.0959	0.0352	(0.0101)	0.0702	0.0601				(0.0992)	0.0393	(0.0599)
1994	(0.0600)	0.0905	0.0305	(0.0053)	0.0647	0.0594				(0.0808)	0.0529	(0.0279)
1995	(0.0593)	0.0822	0.0230	(0.0388)	0.1095	0.0707	(0.0085)	(0.0107)	(0.0192)	(0.0737)	0.0519	(0.0218)
1996	(0.0583)	0.0758	0.0175	(0.0156)	0.0789	0.0633	(0.0156)	(0.0570)	(0.0726)	(0.0888)	0.0348	(0.0540)
1997	(0.0472)	0.0784	0.0311	(0.0167)	0.0821	0.0654	0.0071	(0.0819)	(0.0748)	(0.0868)	0.0259	(0.0609)
1998	(0.1434)	0.1806	0.0372	(0.0046)	0.0719	0.0673	0.0015	(0.1276)	(0.1262)	(0.0713)	0.0497	(0.0217)
1999	(0.0974)	0.1305	0.0330	(0.0169)	0.0766	0.0596	(0.0883)	(0.0258)	(0.1141)	(0.0764)	0.0488	(0.0276)
2000	(0.0989)	0.1289	0.0299	(0.0010)	0.0876	0.0866	(0.0700)	(0.0111)	(0.0810)	(0.0504)	0.0224	(0.0280)
2001	(0.0747)	0.1030	0.0283	0.0056	0.0680	0.0735	(0.0571)	(0.0461)	(0.1032)	(0.0416)	0.0156	(0.0261)
2002	(0.0962)	0.1335	0.0373	(0.0122)	0.0960	0.0838	(0.0588)	(0.0463)	(0.1050)	(0.0317)	0.0366	0.0049
2003	(0.0966)	0.1387	0.0421	(0.0248)	0.1082	0.0834	(0.0310)	(0.1124)	(0.1434)	(0.0320)	0.0732	0.0412
2004	(0.0739)	0.1219	0.0481	(0.0160)	0.1287	0.1128	(0.0096)	(0.1877)	(0.1974)	(0.0217)	0.0577	0.0360
2005	(0.0598)	0.1064	0.0467	0.0012	0.1001	0.1013	(0.0048)	(0.1691)	(0.1739)	(0.0356)	0.0155	(0.0201)
2006	(0.0453)	0.0963	0.0509	0.0085	0.1086	0.1171	0.0197	(0.2910)	(0.2713)	(0.0470)	(0.0199)	(0.0669)
2007	(0.0258)	0.0881	0.0624	0.0075	0.1023	0.1097	0.0363	(0.2945)	(0.2583)	(0.0464)	(0.0129)	(0.0593)
2008	(0.0501)	0.0932	0.0431	0.0136	0.0554	0.0690	(0.0249)	(0.1377)	(0.1626)	(0.0826)	(0.0172)	(0.0999)
2009	(0.1216)	0.1579	0.0363	(0.0500)	0.1007	0.0507	(0.0979)	0.1662	0.0684	(0.0529)	(0.0008)	(0.0537)
2010	(0.1082)	0.1521	0.0439	(0.0476)	0.1240	0.0764	(0.0801)	0.0942	0.0141	(0.0557)	0.0330	(0.0226)
2011	(0.1132)	0.1346	0.0215	(0.0446)	0.1553	0.1108	(0.0801)	0.0942	0.0141	(0.0720)	0.0662	(0.0058)
2012	(0.1132)	0.1346	0.0215	(0.0446)	0.1553	0.1108	(0.0801)	0.0942	0.0141	(0.0672)	0.0317	(0.0355)
2013	(0.1132)	0.1346	0.0215	(0.0446)	0.1553	0.1108	(0.0801)	0.0942	0.0141	#DIV/0!	#DIV/0!	#DIV/0!

	Infla.rate,HA	g_Y*	g_A*	Infla.rate,HA	g_Y*	g_A*	Infla.rate,HA	g_Y*	g_A*	Infla.rate,HA	g_Y*	g_A*
	10. Japan			10. Netherlands			4. Latvia			11. Pakistan		
1990	0.0755	0.0629	0.0472	0.0560	0.0417	0.0272				0.0925	0.0516	0.0180
1991	0.0748	0.0588	0.0441	0.0495	0.0398	0.0252				0.0884	0.0665	0.0319
1992	0.0612	0.0440	0.0341	0.0439	0.0376	0.0247				0.1064	0.0855	0.0484
1993	0.0451	0.0358	0.0294	0.0408	0.0328	0.0210				0.1254	0.0898	0.0508
1994	0.0374	0.0320	0.0269	0.0525	0.0358	0.0250				0.1019	0.0816	0.0468
1995	0.0339	0.0311	0.0265	0.0533	0.0354	0.0226	0.1221	0.0100	0.0193	0.1073	0.0726	0.0387
1996	0.0306	0.0294	0.0252	0.0514	0.0362	0.0235	0.1071	0.0234	0.0295	0.1282	0.0829	0.0470
1997	0.0330	0.0285	0.0242	0.0570	0.0369	0.0248	0.0757	0.0347	0.0371	0.1347	0.0799	0.0414
1998	0.0251	0.0171	0.0144	0.0751	0.0445	0.0271	0.0813	0.0488	0.0528	0.0944	0.0745	0.0418
1999	0.0235	0.0122	0.0092	0.0451	0.0338	0.0235	0.0755	0.0459	0.0466	0.1059	0.0594	0.0280
2000	0.0242	0.0153	0.0123	0.0487	0.0291	0.0194	0.0580	0.0470	0.0498	0.1135	0.0769	0.0450
2001	0.0263	0.0099	0.0076	0.0562	0.0315	0.0248	0.0508	0.0579	0.0559	0.1906	0.0533	0.0554
2002	0.0190	0.0027	0.0012	0.0414	0.0261	0.0175	0.0555	0.0570	0.0592	0.0952	0.0527	0.0293
2003	0.0134	0.0016	0.0005	0.0372	0.0240	0.0159	0.0581	0.0670	0.0678	0.0711	0.0358	0.0155
2004	0.0226	0.0031	0.0019	0.0374	0.0184	0.0109	0.0488	0.0915	0.0867	0.0873	0.0419	0.0213
2005	0.0222	0.0020	0.0011	0.0479	0.0259	0.0163	0.0496	0.0939	0.0939	0.1337	0.0621	0.0379
2006	0.0333	0.0010	0.0008	0.0549	0.0218	0.0150	0.0494	0.1228	0.1155	0.1599	0.0853	0.0566
2007	0.0231	0.0015	0.0010	0.0659	0.0277	0.0194	0.0506	0.1312	0.1236	0.1337	0.0864	0.0584
2008	0.0304	0.0045	0.0037	0.0685	0.0397	0.0290	0.0504	0.0982	0.0930	0.2056	0.0840	0.0521
2009	0.0308	0.0062	0.0055	0.0419	0.0321	0.0246	0.0594	0.0074	0.0107	0.2011	0.0533	0.0276
2010	0.0273	0.0093	0.0085	0.0415	0.0257	0.0190	0.0403	0.0253	0.0271	0.1052	0.0249	0.0054
2011	0.0317	0.0089	0.0081	0.0497	0.0209	0.0149	0.0331	0.0257	0.0234	3.8861	(0.0029)	(0.0151)
2012	0.0303	0.0089	0.0078	0.0466	0.0197	0.0146	0.0320	0.0251	0.0228	1.8734	(0.0153)	(0.0216)
2013	0.0300	0.0088	0.0078	0.0518	0.0188	0.0159	0.0310	0.0245	0.0222	#DIV/0!	#DIV/0!	#DIV/0!

Appendix 1, *HEU*

Table A12 Deficit & Balance of Payments to Y and, endogenous inflation rate, $HA_{r(i)}$, the growth rate of Y, g_Y^*, and endogenous rate of tech progress, g_A^*. by country, 1990-2013

	Δd	s_{PRI}-i_{PRI}	bop	Δd	s_{PRI}-i_{PRI}	bop	Δd	s_{PRI}-i_{PRI}	bop	Δd	s_{PRI}-i_{PRI}	bop
	11. Korea			11. Portugal			5. Poland			12. Saudi Arabia		
1990	(0.0075)	(0.0065)	(0.0140)	(0.0527)	(0.0869)	(0.1396)	(0.0513)	0.1325	0.0811	(0.0283)	0.1586	0.1303
1991	(0.0179)	(0.0166)	(0.0345)	(0.0684)	(0.0784)	(0.1467)	(0.0816)	0.0601	(0.0216)	(0.0302)	0.0542	0.0240
1992	(0.0053)	(0.0123)	(0.0176)	(0.0262)	(0.1116)	(0.1378)	(0.0443)	0.0612	0.0169	(0.0241)	0.0661	0.0420
1993	0.0068	(0.0078)	(0.0010)	(0.0892)	(0.0513)	(0.1406)	(0.0354)	0.0461	0.0107	(0.0350)	0.0533	0.0183
1994	0.0034	(0.0181)	(0.0147)	(0.0567)	(0.0658)	(0.1225)	(0.0246)	0.0358	0.0112	(0.0321)	0.1252	0.0931
1995	0.0030	(0.3156)	(0.3127)	(0.0566)	(0.0522)	(0.1088)	(0.0194)	0.0439	0.0245	(0.0323)	0.1571	0.1248
1996	0.0011	(0.0455)	(0.0444)	(0.0254)	(0.0843)	(0.1097)	(0.0214)	0.0049	(0.0165)	(0.0348)	0.1847	0.1499
1997	(0.0002)	(0.0132)	(0.0134)	(0.0234)	(0.0965)	(0.1199)	(0.0186)	(0.0268)	(0.0454)	(0.0306)	0.1769	0.1463
1998	(0.0329)	0.1684	0.1355	(0.0145)	(0.1255)	(0.1399)	(0.0132)	(0.0427)	(0.0559)	(0.0366)	0.0820	0.0454
1999	(0.0349)	0.1008	0.0659	(0.0311)	(0.0833)	(0.1144)	(0.0031)	(0.0652)	(0.0683)	(0.0810)	0.2239	0.1429
2000	0.0514	(0.0238)	0.0276	(0.0153)	(0.1071)	(0.1223)	0.0147	(0.0889)	(0.0742)	(0.0357)	0.2493	0.2136
2001	0.0318	(0.0081)	0.0237	(0.0273)	(0.0853)	(0.1126)	(0.0446)	0.0023	(0.0424)	(0.0436)	0.2299	0.1864
2002	0.0420	(0.0243)	0.0177	(0.0208)	(0.0726)	(0.0934)	(0.0524)	0.0124	(0.0400)	(0.0322)	0.2332	0.2010
2003	0.0197	0.0075	0.0272	(0.0212)	(0.0525)	(0.0737)	(0.0515)	0.0204	(0.0311)	0.0497	0.1986	0.2483
2004	0.0011	0.0502	0.0514	(0.0250)	(0.0628)	(0.0878)	(0.0550)	0.0278	(0.0272)	0.1169	0.1798	0.2967
2005	0.0106	0.0197	0.0303	(0.0567)	(0.0398)	(0.0965)	(0.0400)	0.0314	(0.0086)	0.1966	0.1580	0.3546
2006	0.0132	0.0046	0.0178	(0.0430)	(0.0549)	(0.0980)	(0.0406)	0.0198	(0.0209)	0.2207	0.1208	0.3415
2007	0.0261	(0.0070)	0.0190	(0.0294)	(0.0605)	(0.0899)	(0.0173)	(0.0146)	(0.0319)	0.1272	0.1678	0.2950
2008	0.0184	(0.0265)	(0.0081)	(0.0425)	(0.0707)	(0.1132)	(0.0357)	(0.0084)	(0.0441)	(0.0091)	0.3412	0.3320
2009	0.0002	0.0464	0.0466	(0.1032)	0.0200	(0.0832)	(0.0638)	0.0646	0.0008	(0.0601)	0.1857	0.1256
2010	0.0186	0.0118	0.0303	(0.0930)	0.0064	(0.0866)	(0.0595)	0.0508	(0.0086)	(0.0591)	0.2587	0.1997
2011	0.0193	0.0064	0.0258	(0.0441)	(0.0051)	(0.0491)	(0.0595)	0.0508	(0.0086)	(0.0531)	0.3660	0.3129
2012	0.0193	0.0064	0.0258	(0.0441)	(0.0051)	(0.0491)	(0.0595)	0.0508	(0.0086)	(0.0570)	0.3725	0.3154
2013	0.0193	0.0064	0.0258	(0.0441)	(0.0051)	(0.0491)	(0.0595)	0.0508	(0.0086)	#DIV/0!	#DIV/0!	#DIV/0!

	Infla.rate,HA	g_Y*	g_A*	Infla.rate,HA	g_Y*	g_A*	Infla.rate,HA	g_Y*	g_A*	Infla.rate,HA	g_Y*	g_A*
	11. Korea			11. Portugal			5. Poland			12. Saudi Arabia		
1990	0.1471	0.1343	0.0901	0.0630	0.0684	0.0641	0.1770	0.0719	0.0488	0.0584	0.0489	0.0137
1991	0.1437	0.1402	0.0944	0.0870	0.0627	0.0554	0.0873	0.0514	0.0431	0.0201	0.0824	0.0158
1992	0.1381	0.1311	0.0869	0.0784	0.0647	0.0563	0.1070	0.0440	0.0368	0.0889	0.0723	0.0424
1993	0.1202	0.1114	0.0747	0.0835	0.0546	0.0441	0.1375	0.0469	0.0397	0.0781	0.0728	0.0451
1994	0.1171	0.1126	0.0768	0.0816	0.0529	0.0393	0.1504	0.0647	0.0567	0.1100	0.0634	0.0304
1995	0.1056	0.1999	0.1444	0.0613	0.0590	0.0407	0.1943	0.0564	0.0499	0.0086	0.0519	0.0024
1996	0.0961	0.1011	0.0736	0.0707	0.0555	0.0449	0.2370	0.0631	0.0559	0.0210	0.0520	0.0043
1997	0.0892	0.0857	0.0623	0.0661	0.0596	0.0488	0.2234	0.0824	0.0739	0.0159	0.0536	0.0034
1998	0.0754	0.0352	0.0239	0.0711	0.0626	0.0496	0.1873	0.0911	0.0827	0.0346	0.0532	0.0213
1999	0.0989	0.0527	0.0349	0.0208	0.0364	0.0280	0.1770	0.0881	0.0795	0.0505	0.0484	0.0158
2000	0.0888	0.0611	0.0431	0.0186	0.0331	0.0145	0.1771	0.0820	0.0734	0.0621	0.0452	0.0129
2001	0.0739	0.0562	0.0416	0.0344	0.0295	0.0243	0.1911	0.0513	0.0452	0.0185	0.0443	0.0046
2002	0.0786	0.0604	0.0445	0.0221	0.0280	0.0147	0.2284	0.0360	0.0308	0.0140	0.0500	0.0035
2003	0.0898	0.0615	0.0437	0.0411	0.0206	0.0190	0.2005	0.0358	0.0313	0.0280	0.0555	0.0057
2004	0.1123	0.0620	0.0411	0.0354	0.0222	0.0151	0.1645	0.0444	0.0395	0.0736	0.0626	0.0114
2005	0.0846	0.0581	0.0413	0.0349	0.0272	0.0205	0.1485	0.0383	0.0346	0.1654	0.0707	0.0183
2006	0.0707	0.0562	0.0411	0.0345	0.0281	0.0214	0.1333	0.0493	0.0447	0.2167	0.0749	0.0252
2007	0.0921	0.0645	0.0446	0.0337	0.0285	0.0229	0.1079	0.0881	0.0803	0.2516	0.0932	0.0386
2008	0.0802	0.0672	0.0482	0.0411	0.0288	0.0232	0.0939	0.0834	0.0765	0.3317	0.1033	0.0419
2009	0.0753	0.0495	0.0346	0.0399	0.0211	0.0166	0.0885	0.0567	0.0522	0.1466	0.0948	0.0532
2010	0.1004	0.0634	0.0420	0.0412	0.0211	0.0165	0.0832	0.0572	0.0527	0.1975	0.1008	0.0501
2011	0.0926	0.0613	0.0415	0.0358	0.0151	0.0119	0.0743	0.0544	0.0494	0.2615	0.0918	0.0376
2012	0.0926	0.0569	0.0417	0.0353	0.0054	0.0041	0.0679	0.0516	0.0469	0.2502	0.0900	0.0360
2013	0.0864	0.0539	0.0394	0.0384	0.0053	0.0044	0.0625	0.0491	0.0446	#DIV/0!	#DIV/0!	#DIV/0!

Table A13 Deficit & Balance of Payments to Y and, endogenous inflation rate, $HA_{r(i)}$, the growth rate of Y, g_Y^*, and endogenous rate of tech progress, g_A^*. by country, 1990-2013

	Δd	s_{PRI}-i_{PRI}	bop	Δd	s_{PRI}-i_{PRI}	bop	Δd	s_{PRI}-i_{PRI}	bop	Δd	s_{PRI}-i_{PRI}	bop
	12. Malaysia			12. Slovak			6. Romania			13. Algeria		
1990	(0.0321)	0.0075	(0.0245)							(0.0401)	0.0210	(0.0190)
1991	(0.0217)	(0.0749)	(0.0966)							(0.0322)	0.0942	0.0620
1992	(0.0090)	(0.0340)	(0.0430)							(0.0414)	0.0639	0.0225
1993	0.0023	(0.0567)	(0.0544)							(0.0514)	0.0357	(0.0157)
1994	0.0251	(0.0964)	(0.0713)							(0.0451)	(0.0161)	(0.0612)
1995	0.0088	(0.0990)	(0.0902)	(0.0288)	0.0529	0.0242	(0.0343)	(0.0308)	(0.0651)	(0.0157)	(0.0304)	(0.0461)
1996	0.0075	(0.0418)	(0.0342)	(0.0146)	(0.1048)	(0.1195)	(0.0473)	(0.0518)	(0.0992)	(0.0111)	0.0911	0.0800
1997	0.0248	(0.0718)	(0.0469)	(0.0445)	(0.0635)	(0.1080)	(0.0438)	(0.0364)	(0.0802)	(0.0280)	0.1249	0.0969
1998	(0.0187)	0.1940	0.1753	(0.0409)	(0.0803)	(0.1211)	(0.0322)	(0.0555)	(0.0877)	(0.0397)	0.0382	(0.0015)
1999	(0.0339)	0.2285	0.1946	(0.0354)	(0.0141)	(0.0495)	(0.0272)	(0.0255)	(0.0526)	(0.0038)	0.0635	0.0597
2000	(0.0350)	0.1609	0.1259	(0.0329)	0.0049	(0.0279)	(0.0170)	(0.0459)	(0.0629)	0.1078	0.1292	0.2370
2001	(0.0336)	0.1433	0.1097	(0.0027)	(0.0882)	(0.0909)	(0.0179)	(0.0692)	(0.0871)	0.0485	0.1145	0.1630
2002	(0.0223)	0.1370	0.1146	(0.0034)	(0.0775)	(0.0809)	0.0034	(0.0664)	(0.0630)	0.0129	0.0968	0.1097
2003	(0.0278)	0.1790	0.1512	(0.0015)	(0.0192)	(0.0207)	(0.0338)	(0.0487)	(0.0825)	0.0612	0.0985	0.1597
2004	(0.0289)	0.1894	0.1605	(0.0013)	(0.0290)	(0.0303)	(0.0126)	(0.0892)	(0.1018)	0.0590	0.1011	0.1601
2005	(0.0301)	0.2213	0.1913	(0.0013)	(0.0502)	(0.0515)	0.0013	(0.1123)	(0.1109)	0.1488	0.1082	0.2570
2006	(0.0254)	0.2299	0.2045	(0.0015)	(0.0415)	(0.0430)	0.0063	(0.1384)	(0.1321)	0.1530	0.1453	0.2983
2007	(0.0239)	0.2120	0.1882	(0.0010)	(0.0106)	(0.0115)	0.0112	(0.1639)	(0.1527)	0.0685	0.1778	0.2463
2008	(0.0278)	0.2345	0.2068	(0.0011)	(0.0242)	(0.0253)	(0.0189)	(0.1244)	(0.1433)	0.1037	0.1097	0.2134
2009	(0.0455)	0.2453	0.1998	(0.0953)	0.0899	(0.0054)	(0.0637)	(0.0031)	(0.0668)	(0.0534)	0.0470	(0.0064)
2010	(0.0481)	0.1991	0.1510	(0.0874)	0.0857	(0.0017)	(0.0399)	(0.0194)	(0.0593)	(0.0508)	0.1285	0.0777
2011	(0.0481)	0.1991	0.1510	(0.0626)	0.0691	0.0065	(0.0399)	(0.0194)	(0.0593)	(0.0537)	0.1700	0.1163
2012	(0.0481)	0.1991	0.1510				(0.0399)	(0.0194)	(0.0593)	#DIV/0!	#DIV/0!	#DIV/0!
2013	(0.0481)	0.1991	0.1510				(0.0399)	(0.0194)	(0.0593)	#DIV/0!	#DIV/0!	#DIV/0!

	Infla.rate,HA	g_Y*	g_A*	Infla.rate,HA	g_Y*	g_A*	Infla.rate,HA	g_Y*	g_A*	Infla.rate,HA	g_Y*	g_A*
	12. Malaysia			12. Slovak			6. Romania			13. Algeria		
1990	0.1518	0.1522	0.0944							0.0531	0.0776	0.0390
1991	0.1323	0.1685	0.1069							0.1209	0.1057	0.0584
1992	0.1355	0.1556	0.0910							0.1072	0.1033	0.0601
1993	0.1248	0.1532	0.0872							0.0851	0.0926	0.0551
1994	0.1156	0.1521	0.0852							0.0930	0.1106	0.0707
1995	0.1321	0.1676	0.0933	0.0633	0.0486	0.0406	0.0288	0.0413	0.0433	0.1129	0.1184	0.0782
1996	0.1321	0.1528	0.0773	0.0444	0.0813	0.0720	0.0507	0.0532	0.0551	0.1437	0.0909	0.0556
1997	0.1222	0.1475	0.0736	0.0502	0.0822	0.0714	0.1135	0.0584	0.0592	0.1337	0.0782	0.0471
1998	0.1111	0.0871	0.0338	0.0414	0.0779	0.0691	0.1452	0.0661	0.0657	0.0985	0.0928	0.0576
1999	0.0926	0.0719	0.0272	0.0512	0.0654	0.0577	0.1447	0.0582	0.0596	0.1240	0.0860	0.0555
2000	0.1012	0.0884	0.0383	0.0523	0.0590	0.0519	0.2620	0.0731	0.0700	0.2278	0.0828	0.0432
2001	0.0784	0.0742	0.0340	0.0456	0.0715	0.0641	0.2580	0.0951	0.0903	0.1075	0.1059	0.0339
2002	0.0819	0.0747	0.0345	0.0456	0.0684	0.0616	0.2406	0.0966	0.0911	0.1684	0.1051	0.0632
2003	0.0862	0.0691	0.0311	0.0488	0.0523	0.0469	0.2213	0.0989	0.0933	0.1959	0.1054	0.0586
2004	0.0960	0.0722	0.0328	0.0531	0.0596	0.0531	0.1977	0.0968	0.0914	0.2162	0.1206	0.0637
2005	0.0940	0.0639	0.0281	0.0556	0.0689	0.0610	0.1774	0.0960	0.0903	0.2793	0.1209	0.0527
2006	0.0987	0.0633	0.0276	0.0547	0.0653	0.0580	0.1536	0.1178	0.1104	0.2822	0.1125	0.0446
2007	0.1088	0.0711	0.0324	0.0762	0.0668	0.0565	0.1332	0.1386	0.1283	0.2617	0.1277	0.0518
2008	0.1103	0.0648	0.0298	0.0660	0.0669	0.0573	0.1229	0.1338	0.1236	0.2578	0.1404	0.0573
2009	0.0638	0.0427	0.0175	0.0079	0.0091	0.0065	0.1032	0.0876	0.0816	0.1376	0.1406	0.0752
2010	0.0867	0.0632	0.0313	0.0095	0.0105	0.0092	0.0821	0.0864	0.0820	0.2599	0.1333	0.0339
2011	0.1081	0.0566	0.0381	0.0067	0.0132	0.0072	0.0680	0.0812	0.0731	0.1373	0.1038	0.0526
2012	0.1011	0.0536	0.0361	0.0116	0.0109	0.0079	0.0601	0.0751	0.0676	#DIV/0!	#DIV/0!	#DIV/0!
2013	0.0950	0.0508	0.0342	#VALUE!	#VALUE!	#VALUE!	0.0539	0.0698	0.0629	#DIV/0!	#DIV/0!	#DIV/0!

Appendix 1, *HEU*

Table A14 Deficit & Balance of Payments to Y and, endogenous inflation rate, $HA_{r(i)}$, the growth rate of Y, g_Y^*, and endogenous rate of tech progress, g_A^*. by country, 1990-2013

	Δd	s_{PRI}-i_{PRI}	bop	Δd	s_{PRI}-i_{PRI}	bop	Δd	s_{PRI}-i_{PRI}	bop	Δd	s_{PRI}-i_{PRI}	bop
	13. Philippines			13. Slovenia			7. Russia			14. Egypt		
1990	(0.0384)	(0.0317)	(0.0700)							(0.0635)	(0.0775)	(0.1411)
1991	(0.0227)	(0.0037)	(0.0265)							(0.0105)	(0.0774)	(0.0879)
1992	(0.0128)	(0.0217)	(0.0345)							(0.0386)	(0.0053)	(0.0439)
1993	(0.0165)	(0.0509)	(0.0674)							0.0189	(0.0797)	(0.0607)
1994	0.0119	(0.0534)	(0.0415)							0.0037	(0.0710)	(0.0673)
1995	0.0062	(0.0602)	(0.0540)	(0.0030)	0.0268	0.0237	(0.0540)	0.0914	0.0373	0.0100	(0.0769)	(0.0670)
1996	0.0030	(0.0520)	(0.0490)	0.0007	0.0244	0.0250	(0.0817)	0.1282	0.0465	(0.0214)	(0.0439)	(0.0653)
1997	0.0006	(0.0597)	(0.0591)	(0.0150)	0.0091	(0.0059)	(0.0713)	0.0955	0.0242	(0.0224)	(0.0473)	(0.0698)
1998	(0.0178)	0.0037	(0.0141)	(0.0078)	(0.0062)	(0.0140)	(0.0548)	0.1304	0.0756	(0.0100)	(0.0955)	(0.1055)
1999	(0.0356)	0.0879	0.0523	(0.0083)	(0.0355)	(0.0438)	(0.0130)	0.2026	0.1896	(0.0008)	(0.0910)	(0.0917)
2000	(0.0382)	0.1153	0.0772	(0.0129)	(0.0256)	(0.0385)	0.0386	0.1839	0.2225	(0.0136)	(0.0599)	(0.0735)
2001	(0.0379)	0.0717	0.0338	(0.0112)	0.0044	(0.0069)	0.0303	0.1099	0.1402	(0.0613)	0.0074	(0.0539)
2002	(0.0503)	0.1062	0.0559	(0.0090)	0.0160	0.0069	0.0770	0.0434	0.1204	(0.0749)	0.0266	(0.0484)
2003	(0.0432)	0.0559	0.0127	(0.0144)	0.0032	(0.0112)	0.0209	0.1047	0.1257	(0.0646)	0.0359	(0.0287)
2004	(0.0356)	0.0735	0.0378	(0.0161)	(0.0113)	(0.0274)	0.0643	0.0717	0.1360	(0.0623)	0.0472	(0.0151)
2005	(0.0249)	0.0624	0.0374	(0.0130)	(0.0012)	(0.0142)	0.0722	0.0799	0.1521	(0.0619)	0.0367	(0.0252)
2006	(0.0099)	0.0801	0.0702	(0.0068)	(0.0120)	(0.0188)	0.1007	0.0411	0.1419	(0.0853)	0.0673	(0.0180)
2007	(0.0017)	0.0846	0.0829	0.0304	(0.0736)	(0.0432)	0.0801	0.0168	0.0969	(0.0572)	0.0064	(0.0509)
2008	(0.0091)	0.0994	0.0903	0.0114	(0.0694)	(0.0580)	0.0595	0.0417	0.1012	(0.0707)	0.0085	(0.0622)
2009	(0.0114)	0.1473	0.1359	(0.0378)	0.0386	0.0008	(0.0507)	0.1319	0.0812	(0.0729)	(0.0009)	(0.0738)
2010	(0.0229)	0.1885	0.1656	(0.0409)	0.0342	(0.0068)	(0.0161)	0.1061	0.0900	(0.0860)	0.0278	(0.0582)
2011	(0.0229)	0.1885	0.1656	(0.0554)	0.0534	(0.0020)	0.0445	0.0444	0.0889	#DIV/0!	#DIV/0!	#DIV/0!
2012	(0.0229)	0.1885	0.1656				0.0281	0.0659	0.0941	#DIV/0!	#DIV/0!	#DIV/0!
2013	(0.0229)	0.1885	0.1656				0.0000	0.0802	0.0802	#DIV/0!	#DIV/0!	#DIV/0!

	Infla.rate,HA	g_Y*	g_A*	Infla.rate,HA	g_Y*	g_A*	Infla.rate,HA	g_Y*	g_A*	Infla.rate,HA	g_Y*	g_A*
	13. Philippines			13. Slovenia			7. Russia			14. Egypt		
1990	0.0865	0.1073	0.0747							0.1017	0.1356	0.1010
1991	0.0677	0.0939	0.0508							0.1008	0.0970	0.0661
1992	0.0767	0.0748	0.0427							0.0919	0.0810	0.0531
1993	0.1050	0.0705	0.0421							0.0917	0.0874	0.0584
1994	0.0904	0.0640	0.0363							0.0990	0.0801	0.0511
1995	0.0895	0.0841	0.0641	0.0392	0.0331	0.0247	0.0506	0.0928	0.0907	0.0392	0.1073	0.0251
1996	0.0727	0.0946	0.0629	0.0474	0.0368	0.0300	0.0540	0.0908	0.0884	0.1236	0.0639	0.0375
1997	0.1248	0.1366	0.0965	0.0596	0.0589	0.0493	0.0355	0.0712	0.0759	0.0972	0.0813	0.0541
1998	0.0827	0.1088	0.0613	0.0645	0.0639	0.0548	0.0343	0.0321	0.0337	0.0539	0.1062	0.0253
1999	0.1101	0.0783	0.0469	0.0608	0.0724	0.0628	0.1515	0.0360	0.0365	0.1075	0.0777	0.0490
2000	0.1544	0.0824	0.0468	0.0618	0.0704	0.0616	0.6171	0.0808	0.0636	0.1048	0.0652	0.0384
2001	0.1635	0.1044	0.0623	0.0654	0.0617	0.0529	0.4439	0.1011	0.0846	0.0099	0.0809	0.0047
2002	0.1758	0.0984	0.0552	0.0724	0.0608	0.0513	0.3534	0.0814	0.0717	0.0887	0.0526	0.0306
2003	0.1867	0.1200	0.0675	0.0711	0.0672	0.0567	0.3536	0.0856	0.0744	0.0796	0.0468	0.0258
2004	0.2020	0.1146	0.0598	0.0784	0.0770	0.0636	0.3640	0.0854	0.0731	0.0765	0.0488	0.0279
2005	0.1945	0.1119	0.0579	0.0766	0.0711	0.0577	0.3737	0.0799	0.0671	0.0807	0.0553	0.0335
2006	0.1715	0.0911	0.0465	0.0834	0.0751	0.0597	0.3588	0.0902	0.0741	0.0767	0.0605	0.0385
2007	0.1806	0.0895	0.0437	0.1782	0.1284	0.0971	0.3089	0.1127	0.0921	0.0923	0.0754	0.0512
2008	0.1871	0.0886	0.0426	0.1359	0.1202	0.0905	0.3046	0.1163	0.0932	0.0934	0.0855	0.0602
2009	0.1497	0.0611	0.0275	0.0620	0.0597	0.0484	0.1716	0.0581	0.0503	0.1362	0.0682	0.0422
2010	(0.0115)	0.0161	(0.0014)	0.0484	0.0506	0.0412	0.3036	0.0839	0.0641	0.1171	0.0699	0.0452
2011	0.1031	0.0101	0.0083	0.0436	0.0349	0.0270	0.2081	0.0610	0.0509	#DIV/0!	#DIV/0!	#DIV/0!
2012	0.1016	0.0100	0.0082	0.0396	0.0302	0.0229	0.3085	0.0839	0.0632	#DIV/0!	#DIV/0!	#DIV/0!
2013	0.1001	0.0099	0.0082	0.0453	0.0278	0.0252	0.0000	(1.0000)	1.5390	#DIV/0!	#DIV/0!	#DIV/0!

Table A15 Deficit & Balance of Payments to Y and, endogenous inflation rate, $HA_{r(i)}$, the growth rate of Y, g_Y^*, and endogenous rate of tech progress, g_A^*. by country, 1990-2013

	Δd	s_{PRI}-i_{PRI}	bop	Δd	s_{PRI}-i_{PRI}	bop	Δd	s_{PRI}-i_{PRI}	bop	Δd	s_{PRI}-i_{PRI}	bop
	14. Singapore			14. Spain			8. Turkey			15. Kenya		
1990	0.1086	(0.0012)	0.1074	(0.0376)	(0.0105)	(0.0481)	(0.0341)	(0.0137)	(0.0478)	(0.0476)	(0.0682)	(0.1158)
1991	0.1140	0.0247	0.1386	(0.0360)	(0.0107)	(0.0467)	(0.0565)	0.0264	(0.0302)	(0.0561)	(0.0212)	(0.0773)
1992	0.1297	0.0118	0.1415	(0.0480)	0.0033	(0.0447)	(0.0462)	0.0145	(0.0318)	(0.0144)	(0.0371)	(0.0516)
1993	0.1550	(0.0635)	0.0915	(0.0778)	0.0613	(0.0165)	(0.0253)	(0.0352)	(0.0605)	(0.0497)	0.0217	(0.0280)
1994	0.1363	0.0556	0.1919	(0.0872)	0.0686	(0.0186)	(0.0317)	0.0422	0.0104	(0.0649)	0.0358	(0.0291)
1995	0.1301	0.0513	0.1814	(0.0545)	0.0545	0.0000	(0.0215)	(0.0281)	(0.0495)	(0.0147)	(0.0983)	(0.1130)
1996	0.1438	0.0166	0.1604	(0.0571)	0.0631	0.0060	(0.0238)	(0.0461)	(0.0699)	0.0101	(0.0776)	(0.0676)
1997	0.0924	0.0693	0.1617	(0.0256)	0.0353	0.0097	(0.0477)	(0.0168)	(0.0645)	(0.0196)	(0.0686)	(0.0883)
1998	0.1446	0.0851	0.2297	(0.0102)	0.0110	0.0008	(0.0387)	0.0515	0.0129	(0.0069)	(0.0750)	(0.0819)
1999	0.1146	0.0727	0.1873	(0.0160)	(0.0034)	(0.0194)	(0.0507)	0.0524	0.0017	(0.0028)	(0.0694)	(0.0722)
2000	0.1006	0.0285	0.1291	0.0082	(0.0439)	(0.0357)	(0.0292)	(0.0040)	(0.0333)	0.0086	(0.1105)	(0.1019)
2001	(0.0151)	0.1681	0.1530	0.0150	(0.0431)	(0.0281)	(0.0466)	0.0924	0.0458	0.0222	(0.1645)	(0.1422)
2002	(0.0051)	0.1545	0.1493	0.0206	(0.0454)	(0.0247)	(0.0452)	0.0634	0.0182	0.0222	(0.1102)	(0.0880)
2003	0.0685	0.1829	0.2513	0.0182	(0.0456)	(0.0273)	(0.0854)	0.0738	(0.0116)	(0.0244)	(0.0501)	(0.0745)
2004	0.0660	0.1321	0.1981	0.0194	(0.0648)	(0.0454)	(0.0524)	0.0232	(0.0293)	(0.0163)	(0.0797)	(0.0960)
2005	0.0868	0.1545	0.2413	0.0363	(0.0956)	(0.0593)	(0.0428)	0.0040	(0.0388)	0.0166	(0.1241)	(0.1075)
2006	0.0760	0.1956	0.2717	0.0494	(0.1213)	(0.0719)	(0.0264)	(0.0282)	(0.0545)	(0.0220)	(0.1005)	(0.1226)
2007	0.1272	0.1730	0.3001	0.0492	(0.1249)	(0.0757)	(0.0198)	(0.0376)	(0.0573)	(0.0183)	(0.0949)	(0.1132)
2008	0.0580	0.1171	0.1751	(0.0226)	(0.0425)	(0.0651)	(0.0271)	(0.0220)	(0.0491)	(0.0320)	(0.1112)	(0.1432)
2009	(0.0157)	0.2390	0.2233	(0.0938)	0.0734	(0.0204)	(0.0467)	0.0344	(0.0123)	(0.0452)	(0.0855)	(0.1307)
2010	0.0773	0.1792	0.2565	(0.0838)	0.0591	(0.0246)	(0.0427)	(0.0190)	(0.0617)	(0.0567)	(0.0690)	(0.1257)
2011	0.0773	0.1792	0.2565	(0.0966)	0.0882	(0.0085)	(0.0361)	0.0360	(0.0001)	(0.0429)	(0.1212)	(0.1640)
2012	0.0773	0.1792	0.2565				(0.0331)	0.0330	(0.0001)	(0.0453)	(0.1363)	(0.1816)
2013	0.0773	0.1792	0.2565							#DIV/0!	#DIV/0!	#DIV/0!

	Infla.rate,HA	g_Y*	g_A*	Infla.rate,HA	g_Y*	g_A*	Infla.rate,HA	g_Y*	g_A*	Infla.rate,HA	g_Y*	g_A*
	14. Singapore			14. Spain			8. Turkey			15. Kenya		
1990	0.1781	0.1344	0.0665	0.0524	0.0663	0.0570	0.1478	0.0926	0.0954	0.0977	0.0806	0.1074
1991	0.1551	0.1246	0.0525	0.0513	0.0628	0.0545	0.1334	0.1172	0.0844	0.0210	0.1141	0.0302
1992	0.1715	0.1221	0.0567	0.0510	0.0547	0.0476	0.1739	0.1374	0.1015	0.0928	0.0555	0.0575
1993	0.1620	0.1330	0.0651	0.0491	0.0411	0.0348	0.1821	0.1498	0.1165	0.0195	0.1210	0.0223
1994	0.1549	0.1017	0.0424	0.0488	0.0401	0.0336	0.2310	0.1075	0.0801	0.0522	0.1009	0.0507
1995	0.2523	0.1536	0.0679	0.0517	0.0481	0.0404	0.2471	0.1333	0.1042	0.2123	0.0550	0.1140
1996	0.1941	0.1478	0.0583	0.0520	0.0468	0.0394	0.2381	0.1628	0.1339	0.1086	0.0468	0.0140
1997	0.1932	0.1483	0.0556	0.0543	0.0478	0.0406	0.2327	0.1466	0.1194	0.1484	0.0505	0.0169
1998	0.1367	0.1060	0.0335	0.0542	0.0519	0.0440	0.3418	0.1291	0.0981	0.0801	0.0411	0.0062
1999	0.1258	0.0996	0.0376	0.0427	0.0508	0.0425	0.3430	0.0996	0.0724	0.0513	0.0306	0.0029
2000	0.1156	0.1023	0.0448	0.0416	0.0562	0.0460	0.2800	0.1121	0.0857	0.1857	0.0558	0.0207
2001	0.0894	0.0718	0.0357	0.0386	0.0586	0.0411	0.9961	0.0191	0.0514	0.2584	0.0643	0.0283
2002	0.0820	0.0621	0.0345	0.0384	0.0602	0.0396	0.2880	0.0839	0.0622	(0.0119)	0.0263	(0.0005)
2003	0.0813	0.0388	0.0205	0.0393	0.0627	0.0401	0.3066	0.0828	0.0604	(0.0576)	0.0242	(0.0023)
2004	0.0887	0.0596	0.0294	0.0359	0.0648	0.0423	0.2652	0.0953	0.0719	0.1830	0.0537	0.0188
2005	0.0895	0.0581	0.0240	0.0363	0.0681	0.0458	0.2297	0.0955	0.0724	0.2050	0.0661	0.0277
2006	0.1010	0.0645	0.0229	0.0382	0.0717	0.0500	0.1873	0.1066	0.0828	0.2292	0.0753	0.0346
2007	0.1001	0.0701	0.0195	0.0365	0.0711	0.0494	0.1772	0.0938	0.0710	0.1071	0.1301	0.0900
2008	0.0884	0.0834	0.0300	0.0313	0.0616	0.0430	0.1408	0.0939	0.0723	0.0900	0.1397	0.0986
2009	0.0703	0.0624	0.0207	0.0244	0.0415	0.0270	0.1465	0.0429	0.0258	0.0794	0.1267	0.0872
2010	0.0929	0.0637	0.0227	0.0229	0.0362	0.0241	0.1657	0.0756	0.0536	0.0695	0.1149	0.0765
2011	0.1297	0.0571	0.0311	0.0232	0.0312	0.0217	0.1239	0.0554	0.0377	0.0651	0.1338	0.0935
2012	0.1216	0.0540	0.0294	0.0231	0.0258	0.0186	0.1084	0.0686	0.0498	0.0593	0.1273	0.0873
2013	0.1146	0.0513	0.0279	0.0280	0.0240	0.0218	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

Table A16 Deficit & Balance of Payments to Y and, endogenous inflation rate, $HA_{r(i)}$, the growth rate of Y, g_Y^*, and endogenous rate of tech progress, g_A^*. by country, 1990-2013

	Δd	s_{PRI}-i_{PRI}	bop	Δd	s_{PRI}-i_{PRI}	bop	Δd	s_{PRI}-i_{PRI}	bop	Δd	s_{PRI}-i_{PRI}	bop
	15. Sri Lanka			Taiwan			9. Ukraine			16. Morocco		
1990	(0.0850)	(0.0233)	(0.1083)	(0.0171)	0.0641	0.0470				(0.0249)	0.0205	(0.0044)
1991	(0.1039)	(0.0290)	(0.1329)	(0.0174)	0.0598	0.0424				(0.0233)	0.0115	(0.0118)
1992	(0.0592)	(0.0628)	(0.1220)	(0.0195)	0.0372	0.0176				(0.0154)	0.0030	(0.0124)
1993	(0.0706)	(0.0475)	(0.1180)	(0.0195)	0.0361	0.0166	(0.0111)	0.0111	0.0000	(0.0290)	0.0118	(0.0173)
1994	(0.0939)	(0.0516)	(0.1455)	(0.0210)	0.0381	0.0170	(0.0088)	(0.0282)	(0.0370)	(0.0355)	0.0183	(0.0171)
1995	(0.0908)	(0.0353)	(0.1262)	(0.0193)	0.0358	0.0165	(0.0714)	0.0204	(0.0510)	(0.0488)	0.0106	(0.0382)
1996	(0.0857)	(0.0285)	(0.1142)	(0.0205)	0.0559	0.0354	(0.0545)	0.0123	(0.0423)	(0.0330)	0.0340	0.0010
1997	(0.0681)	(0.1074)	(0.1755)	(0.0151)	0.0374	0.0223	(0.0416)	(0.0071)	(0.0488)	(0.0077)	0.0048	(0.0029)
1998	(0.0761)	(0.0004)	(0.0765)	(0.0129)	0.0242	0.0112	(0.0325)	(0.0152)	(0.0476)	(0.0212)	0.0172	(0.0040)
1999	(0.0653)	(0.0392)	(0.1044)	(0.0134)	0.0405	0.0271	(0.0225)	0.0540	0.0315	(0.0243)	0.0199	(0.0044)
2000	(0.0933)	(0.0449)	(0.1382)	(0.0445)	0.0679	0.0235	(0.0089)	0.0317	0.0229	(0.0587)	0.0447	(0.0140)
2001	(0.1038)	0.0157	(0.0881)	(0.0683)	0.1272	0.0589	(0.0147)	0.0131	(0.0016)	0.0113	0.0364	0.0477
2002	(0.0819)	(0.0068)	(0.0886)	(0.0306)	0.1082	0.0776	0.0049	0.0280	0.0330	0.0124	0.0291	0.0414
2003	(0.0762)	(0.0008)	(0.0771)	(0.0246)	0.1006	0.0760	(0.0029)	0.0187	0.0158	0.0100	0.0273	0.0372
2004	(0.0815)	(0.0275)	(0.1090)	(0.0266)	0.0664	0.0399	(0.0293)	0.1037	0.0744	0.0064	0.0147	0.0210
2005	(0.0775)	(0.0353)	(0.1128)	(0.0032)	0.0510	0.0477	(0.0191)	0.0159	(0.0033)	0.0001	0.0242	0.0243
2006	(0.0765)	(0.0611)	(0.1376)	(0.0023)	0.0684	0.0661	(0.0074)	(0.0421)	(0.0494)	(0.0012)	0.0315	0.0303
2007	(0.0725)	(0.0550)	(0.1274)	(0.0024)	0.0884	0.0860	(0.0128)	(0.0558)	(0.0686)	0.0078	(0.0093)	(0.0015)
2008	(0.0730)	(0.1055)	(0.1785)	(0.0091)	0.0623	0.0531	(0.0115)	(0.0874)	(0.0989)	0.0104	(0.0683)	(0.0580)
2009	(0.1142)	0.0292	(0.0850)	(0.0394)	0.1329	0.0935	(0.0398)	(0.0019)	(0.0417)	0.0051	(0.0612)	(0.0561)
2010	(0.1101)	(0.0057)	(0.1158)	(0.0296)	0.1060	0.0764	(0.0646)	0.0285	(0.0361)	0.0051	(0.0562)	(0.0511)
2011	(0.1101)	(0.0057)	(0.1158)	(0.0296)	0.1060	0.0764	(0.0159)	(0.0599)	(0.0758)	0.0031	(0.1072)	(0.1041)
2012	(0.1101)	(0.0057)	(0.1158)	(0.0296)	0.1060	0.0764	(0.0219)	0.2611	0.2392	0.0006	(0.0620)	(0.0614)
2013	(0.1101)	(0.0057)	(0.1158)	(0.0296)	0.1060	0.0764	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

	Infla.rate,HA	g_Y*	g_A*	Infla.rate,HA	g_Y*	g_A*	Infla.rate,HA	g_Y*	g_A*	Infla.rate,HA	g_Y*	g_A*
	15. Sri Lanka			Taiwan			9. Ukraine			16. Morocco		
1990	0.4345	0.1673	0.1372	0.0548	0.0411	0.0244				0.0264	0.0368	0.0138
1991	0.3348	0.1520	0.1161	0.0556	0.0443	0.0254				0.0148	0.0255	0.0051
1992	0.2024	0.1400	0.1149	0.0598	0.0516	0.0309				0.0023	0.0198	0.0006
1993	0.1476	0.1353	0.1085	0.0649	0.0543	0.0326	1.1092	0.9630	0.0164	0.0106	0.0222	0.0033
1994	0.0938	0.1634	0.0887	0.0619	0.0532	0.0326	0.6639	0.3185	0.1145	0.0017	0.0196	0.0004
1995	0.1168	0.1177	0.0942	0.0640	0.0543	0.0335	0.8742	0.3421	0.1738	0.0250	0.0198	0.0064
1996	0.1066	0.1066	0.0845	0.0642	0.0466	0.0324	0.5598	0.2373	0.1510	(0.0245)	0.0125	(0.0035)
1997	0.0805	0.1499	0.1257	0.0588	0.0513	0.0324	0.4310	0.2076	0.1318	0.0085	0.0203	0.0020
1998	0.0776	0.0930	0.0796	0.0591	0.0540	0.0347	0.1247	0.0634	0.0781	(0.0691)	0.1130	(0.0609)
1999	0.0685	0.0986	0.0842	0.0604	0.0506	0.0317	0.1386	0.0572	0.0602	0.0622	0.0525	0.0327
2000	0.0704	0.1010	0.0851	0.0627	0.0522	0.0326	0.1751	0.0773	0.0763	0.0569	0.0483	0.0302
2001	0.0768	0.0709	0.0563	0.0459	0.0328	0.0232	0.1411	0.0839	0.0794	0.0707	0.0392	0.0271
2002	0.0768	0.0736	0.0583	0.0532	0.0319	0.0217	0.1609	0.0684	0.0677	0.0646	0.0429	0.0272
2003	0.0745	0.0684	0.0528	0.0553	0.0331	0.0224	0.1564	0.0780	0.0757	0.0687	0.0472	0.0310
2004	0.0731	0.0846	0.0674	0.0614	0.0432	0.0302	0.2812	0.0795	0.0689	0.0691	0.0510	0.0345
2005	0.0659	0.0932	0.0756	0.0590	0.0400	0.0283	0.1515	0.0866	0.0831	0.0644	0.0453	0.0301
2006	0.0710	0.1002	0.0813	0.0674	0.0403	0.0260	0.1258	0.1015	0.0971	0.0681	0.0470	0.0314
2007	0.0692	0.0999	0.0810	0.0794	0.0390	0.0249	0.1289	0.1170	0.1095	0.0687	0.0553	0.0385
2008	0.0995	0.1074	0.0838	0.0557	0.0370	0.0259	0.1129	0.1171	0.1104	0.0747	0.0807	0.0585
2009	0.0645	0.0810	0.0644	0.0455	0.0246	0.0168	0.1313	0.0525	0.0501	0.0700	0.0779	0.0554
2010	0.0628	0.0967	0.0793	0.0764	0.0382	0.0258	0.1387	0.0517	0.0500	0.0516	0.0740	0.0533
2011	0.0596	0.0852	0.0771	0.0766	0.0366	0.0259	0.1328	0.0769	0.0735	0.0566	0.0801	0.0553
2012	0.0525	0.0785	0.0711	0.0734	0.0353	0.0250	0.3149	(0.1692)	(0.1319)	0.0711	0.0935	0.0612
2013	0.0470	0.0728	0.0659	0.0704	0.0341	0.0241	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

Table A17 Deficit & Balance of Payments to Y and, endogenous inflation rate, $HA_{r(i)}$, the growth rate of Y, g_Y^*, and endogenous rate of tech progress, g_A^*. by country, 1990-2013

	Δd	s_{PRI}-i_{PRI}	bop	Δd	s_{PRI}-i_{PRI}	bop	Δd	s_{PRI}-i_{PRI}	bop	Δd	s_{PRI}-i_{PRI}	bop
	16. Thailand			17. Vietnam			G	PRI	TOTAL	17. Nigeria		
1990	0.0545	(0.1520)	(0.0975)	(0.0306)	(0.1363)	(0.1669)	18. South Africa					
1991	0.0445	(0.1336)	(0.0891)	(0.0261)	(0.0900)	(0.1161)	(0.0401)	0.0636	0.0235			
1992	0.0276	(0.0953)	(0.0678)	(0.0198)	(0.0617)	(0.0815)	(0.0468)	0.0725	0.0256			
1993	0.0195	(0.0827)	(0.0632)	(0.0478)	(0.0919)	(0.1398)	(0.0789)	0.0986	0.0197			
1994	0.0310	(0.1019)	(0.0709)	(0.0157)	(0.1173)	(0.1331)	(0.0739)	0.0921	0.0182			
1995	0.0370	(0.1331)	(0.0961)	(0.0054)	(0.0976)	(0.1030)	(0.0892)	0.0949	0.0058	0.0006	(0.0045)	(0.0039)
1996	0.0110	(0.1100)	(0.0990)	(0.0019)	(0.1256)	(0.1275)	(0.0476)	0.0340	(0.0136)	0.0146	(0.0421)	(0.0275)
1997	(0.0038)	(0.0103)	(0.0141)	(0.0175)	(0.0838)	(0.1013)	(0.0514)	0.0443	(0.0070)	(0.0019)	(0.0351)	(0.0370)
1998	(0.0289)	0.1576	0.1288	(0.0013)	(0.0919)	(0.0932)	(0.0342)	0.0230	(0.0112)	(0.0514)	(0.1217)	(0.1732)
1999	(0.0342)	0.1354	0.1012	(0.0016)	(0.0408)	(0.0424)	(0.0285)	0.0150	(0.0135)	(0.0954)	0.3242	0.2288
2000	(0.0223)	0.0941	0.0718	(0.0285)	(0.0110)	(0.0395)	(0.0179)	0.0199	0.0021	(0.0231)	0.3897	0.3665
2001	(0.0244)	0.0735	0.0491	0.0132	(0.0499)	(0.0367)	(0.0224)	0.0287	0.0063	(0.0425)	0.0651	0.0226
2002	(0.0143)	0.0658	0.0515	(0.0152)	(0.0531)	(0.0684)	(0.0098)	0.0197	0.0099	(0.0066)	0.0415	0.0349
2003	0.0041	0.0458	0.0499	(0.0356)	(0.0656)	(0.1011)	(0.0096)	0.0244	0.0148	0.0304	(0.0362)	(0.0058)
2004	(0.0063)	0.0345	0.0282	(0.0367)	(0.0593)	(0.0960)	(0.0285)	0.0231	(0.0054)	(0.0727)	0.1608	0.0880
2005	(0.0079)	(0.0323)	(0.0403)	(0.0265)	(0.0365)	(0.0631)	(0.0241)	(0.0024)	(0.0265)	(0.1017)	0.2037	0.1019
2006	(0.0131)	0.0075	(0.0056)	(0.0194)	(0.0493)	(0.0687)	(0.0020)	(0.0254)	(0.0275)	(0.1660)	0.4088	0.2428
2007	(0.0146)	0.0637	0.0491	(0.0164)	(0.1773)	(0.1938)	0.0058	(0.0527)	(0.0469)	(0.1999)	0.2598	0.0599
2008	(0.0172)	0.0048	(0.0124)	(0.0164)	(0.1736)	(0.1901)	0.0164	(0.0847)	(0.0683)	(0.2052)	0.3504	0.1451
2009	(0.0067)	0.0758	0.0692	(0.0123)	(0.1251)	(0.1374)	(0.0071)	(0.0628)	(0.0699)	(0.1557)	0.1382	(0.0175)
2010	(0.0124)	0.0451	0.0327	(0.0156)	(0.1245)	(0.1401)	(0.0549)	0.0203	(0.0346)	(0.0962)	0.2161	0.1199
2011	(0.0124)	0.0451	0.0327	(0.0156)	(0.1245)	(0.1401)	(0.0312)	0.0069	(0.0243)	(0.1822)	0.3317	0.1496
2012	(0.0124)	0.0451	0.0327	(0.0156)	(0.1245)	(0.1401)	(0.0466)	0.0149	(0.0317)	(0.2117)	0.3613	0.1496
2013	(0.0124)	0.0451	0.0327	(0.0156)	(0.1245)	(0.1401)	(0.0352)	(0.0233)	(0.0585)	#DIV/0!	#DIV/0!	#DIV/0!

	Infla.rate,HA	g_Y*	g_A*	Infla.rate,HA	g_Y*	g_A*	Infla.rate,HA	g_Y*	g_A*	Infla.rate,HA	g_Y*	g_A*
	16. Thailand			17. Vietnam			18. South Africa			17. Nigeria		
1990	0.2608	0.2308	0.1656	0.4717	0.1220	0.0705	(0.0107)	0.0655	(0.0060)			
1991	0.2125	0.2059	0.1437	0.4209	0.1161	0.0722	0.0379	0.0410	0.0122			
1992	0.1857	0.1795	0.1242	0.2329	0.1300	0.0913	0.0549	0.0377	0.0142			
1993	0.1509	0.1512	0.1074	0.1668	0.1662	0.1249	0.0681	0.0494	0.0252			
1994	0.1397	0.1497	0.1033	0.1391	0.1517	0.1150	0.0754	0.0588	0.0330			
1995	0.1152	0.1430	0.0969	0.1851	0.1812	0.1438	0.0756	0.0794	0.0479	0.1619	0.0619	0.0374
1996	0.0947	0.1256	0.0855	0.1236	0.1705	0.1323	0.0772	0.0694	0.0422	0.2226	0.0525	0.0193
1997	0.0639	0.0866	0.0468	0.1432	0.1600	0.1179	0.0946	0.0596	0.0427	0.1983	0.0659	0.0243
1998	0.1138	0.0665	0.0426	0.1464	0.1523	0.1085	0.0830	0.0647	0.0436	0.4370	0.0446	0.0106
1999	0.0978	0.0655	0.0424	0.1372	0.1339	0.0928	0.0779	0.0581	0.0383	0.2998	0.0405	0.0103
2000	0.0970	0.0761	0.0483	0.1329	0.1346	0.0910	0.0829	0.0578	0.0408	1.2018	0.0583	0.0112
2001	0.0855	0.0759	0.0476	0.1256	0.1314	0.0866	0.0745	0.0588	0.0375	0.1627	0.0600	0.0305
2002	0.0813	0.0745	0.0452	0.1135	0.1336	0.0886	0.0819	0.0598	0.0416	0.1663	0.0428	0.0148
2003	0.0803	0.0751	0.0450	0.1020	0.1344	0.0905	0.0776	0.0628	0.0414	0.2870	0.0665	0.0344
2004	0.0813	0.0805	0.0493	0.1012	0.1322	0.0881	0.0810	0.0724	0.0516	0.0968	0.0342	0.0072
2005	0.0779	0.0925	0.0601	0.1157	0.1221	0.0886	0.0829	0.0673	0.0468	(0.9440)	0.0100	(0.0144)
2006	0.0806	0.0847	0.0552	0.1044	0.1247	0.0826	0.0859	0.0749	0.0539	0.4559	0.0347	0.0056
2007	0.0834	0.0727	0.0467	0.0937	0.1522	0.1053	0.0799	0.0915	0.0693	3.4716	(0.0225)	(0.0417)
2008	0.0758	0.0798	0.0540	0.0892	0.1462	0.1040	0.0740	0.0961	0.0740	(0.0016)	0.0290	0.0017
2009	0.0659	0.0528	0.0352	0.0848	0.1252	0.0875	0.0687	0.0668	0.0486	0.3641	0.0686	0.0371
2010	0.0733	0.0672	0.0448	0.1055	0.1461	0.0960	0.0670	0.0674	0.0506	0.1791	0.0776	0.0462
2011	0.0740	0.0621	0.0454	0.0962	0.1253	0.0899	0.0613	0.0930	0.0523	1.0344	0.1910	0.0931
2012	0.0689	0.0584	0.0428	0.0832	0.1114	0.0799	0.0674	0.0871	0.0502	0.6844	0.1629	0.0769
2013	0.0644	0.0552	0.0404	0.0733	0.1002	0.0719	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

2. Figures

***Geometric* measurements clarifying the essence of Phillips unemployment**

This section of part 1 of Appendix 1 is composed of the following 15 figures for 68 countries, 1990-2012, consistently marching with the KEWT database series, 8.14 and 9.15.

Here is the list of these 15 figures at a glance.

Figure A1-1 Endogenous Phillips curve/line that uses endogenous inflation rate and endogenous or external rate of employment (1)

Figure A1-2 Endogenous Phillips curve/line that uses endogenous inflation rate and endogenous or external rate of employment (2)

Figure A1-3 Growth rate of employment in equilibrium and endogenous/external in inflation rate (1)

Figure A1-4 Growth rate of employment in equilibrium and endogenous/external in inflation rate (2)

Figure A1- 5 Two basic functions of the growth rate of population/employees by sector: the US, Japan, Germany, and Russia 2007 (1)

Figure A1-6 Two basic functions of the growth rate of population/employees by sector: Sweden, UK, China, and India 2007 (2)

Figure A1-7 Function of $r^*(n)$ that suggests the relationship between the rate of unemployment and the inflation rate (1)

Figure A1-8 Function of $r^*(n)$ that suggests the relationship between the rate of unemployment and the inflation rate (2)

Figure A1-9 Comparisons of various inflation rates, endogenous and external, by area 1990-2007

Figure A1-10 The rate of change in the relative share of capital by country

Figure A1-11 The of change in the relative share of capital versus the wage growth ratio of external to endogenous

Figure A1-12 The external rate of unemployment and, the inflation rate as 10 year debt yield less the real rate of return, and the real rate of return by sector (1)

Figure A1-13 The external rate of unemployment and, the inflation rate as 10 year debt yield less the real rate of return, and the real rate of return by sector (2)

Figure A1-14 Endogenous rates of (un)employment in equilibrium and the private sector/government sector in the rate of (un)employment (1)

Figure A1-15 Endogenous rates of (un)employment in equilibrium and the private sector/government sector in the rate of (un)employment (2)

Endogenous Phillips (1)

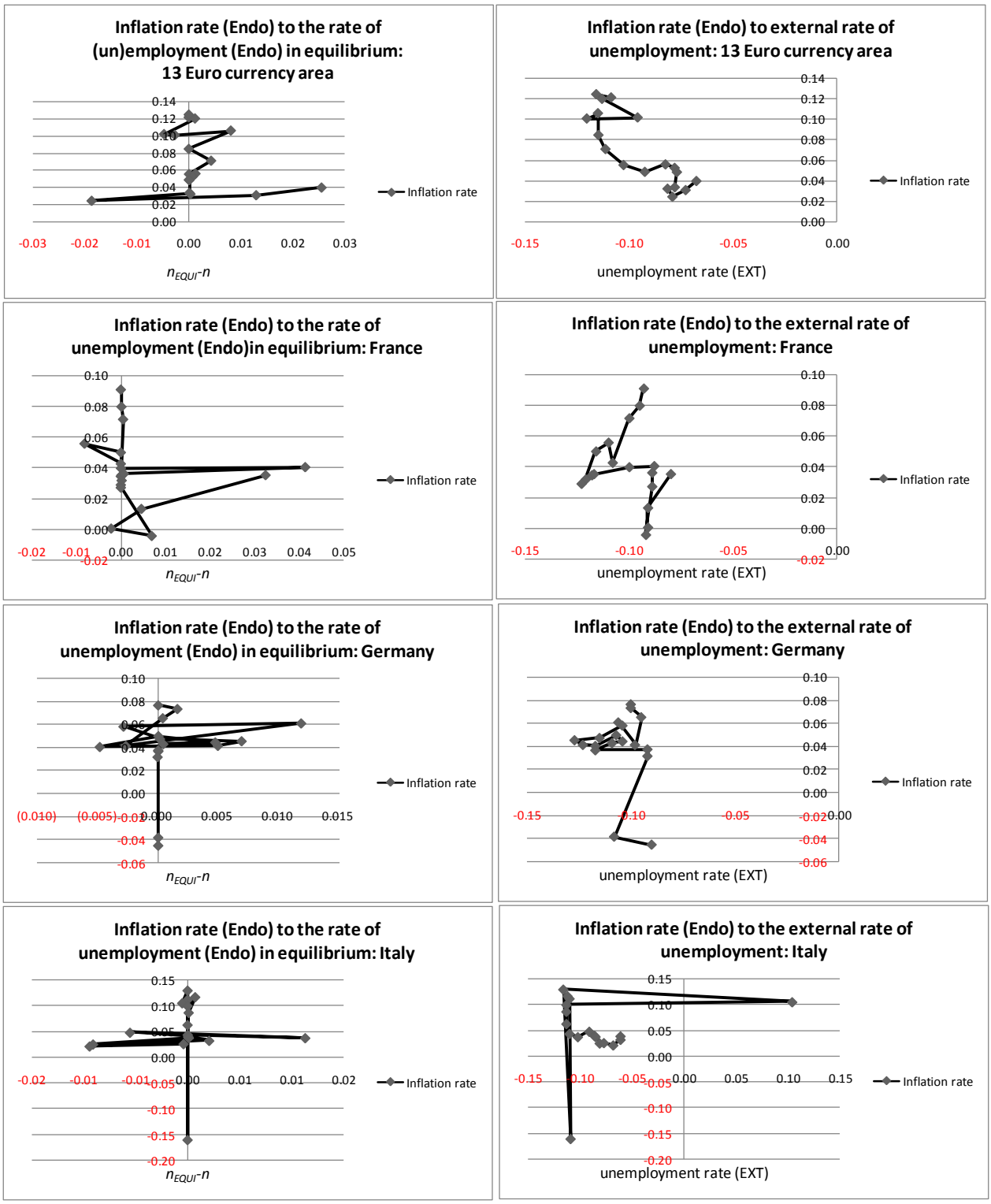


Figure A1-1 Endogenous Phillips curve/line that uses endogenous inflation rate and endogenous or external rate of employment (1)

Appendix 1, *HEU*

Endogenous Phillips (2)

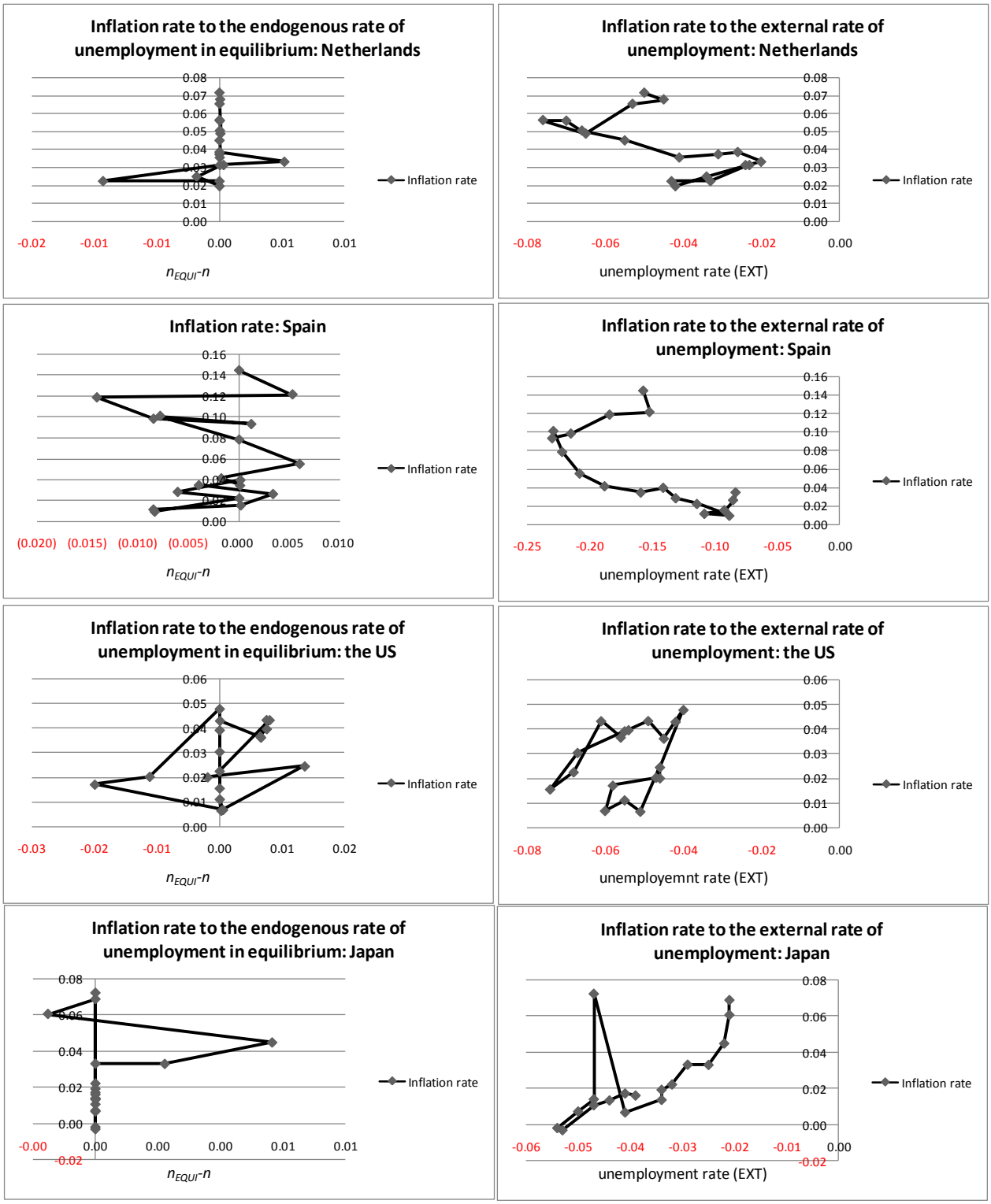


Figure A1-2 Endogenous Phillips curve/line that uses endogenous inflation rate and endogenous or external rate of employment (2)

Endogenous Phillips (3)

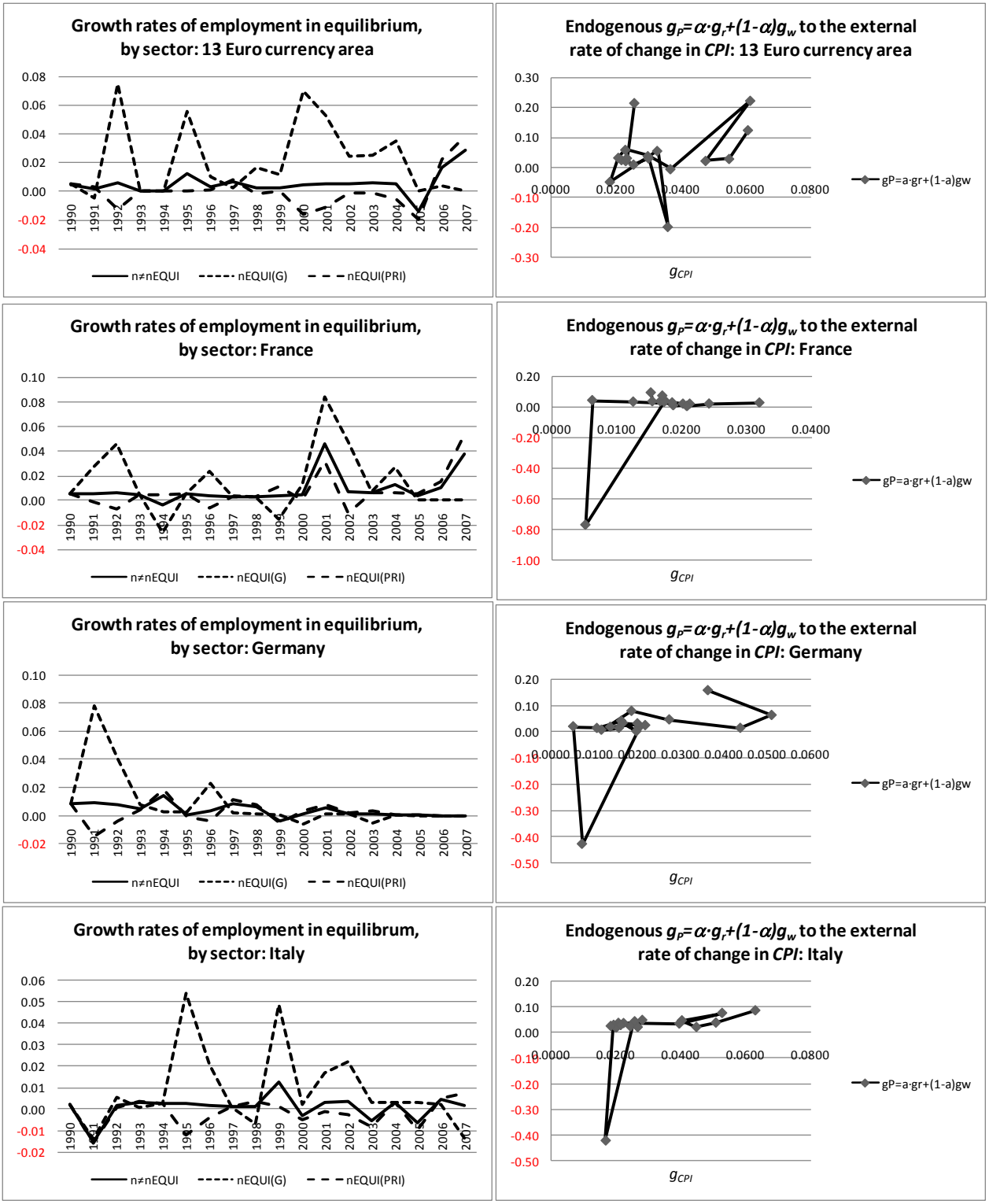


Figure A1-3 Growth rate of employment in equilibrium and endogenous/external in inflation rate (1)

Appendix 1, *HEU*

Endogenous Phillips (4)

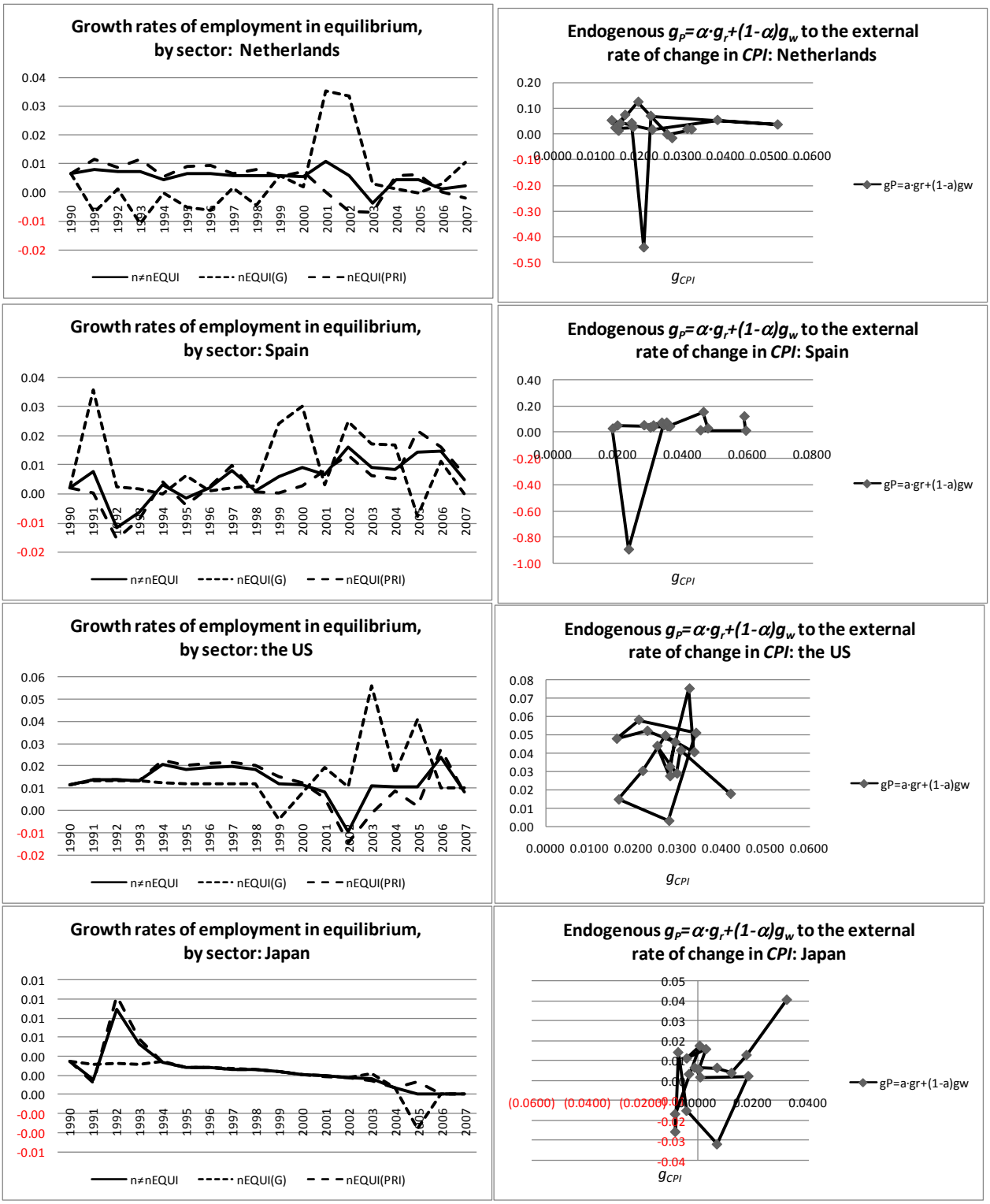


Figure A1-4 Growth rate of employment in equilibrium and endogenous/external in inflation rate (2)

Endogenous Phillips (5)

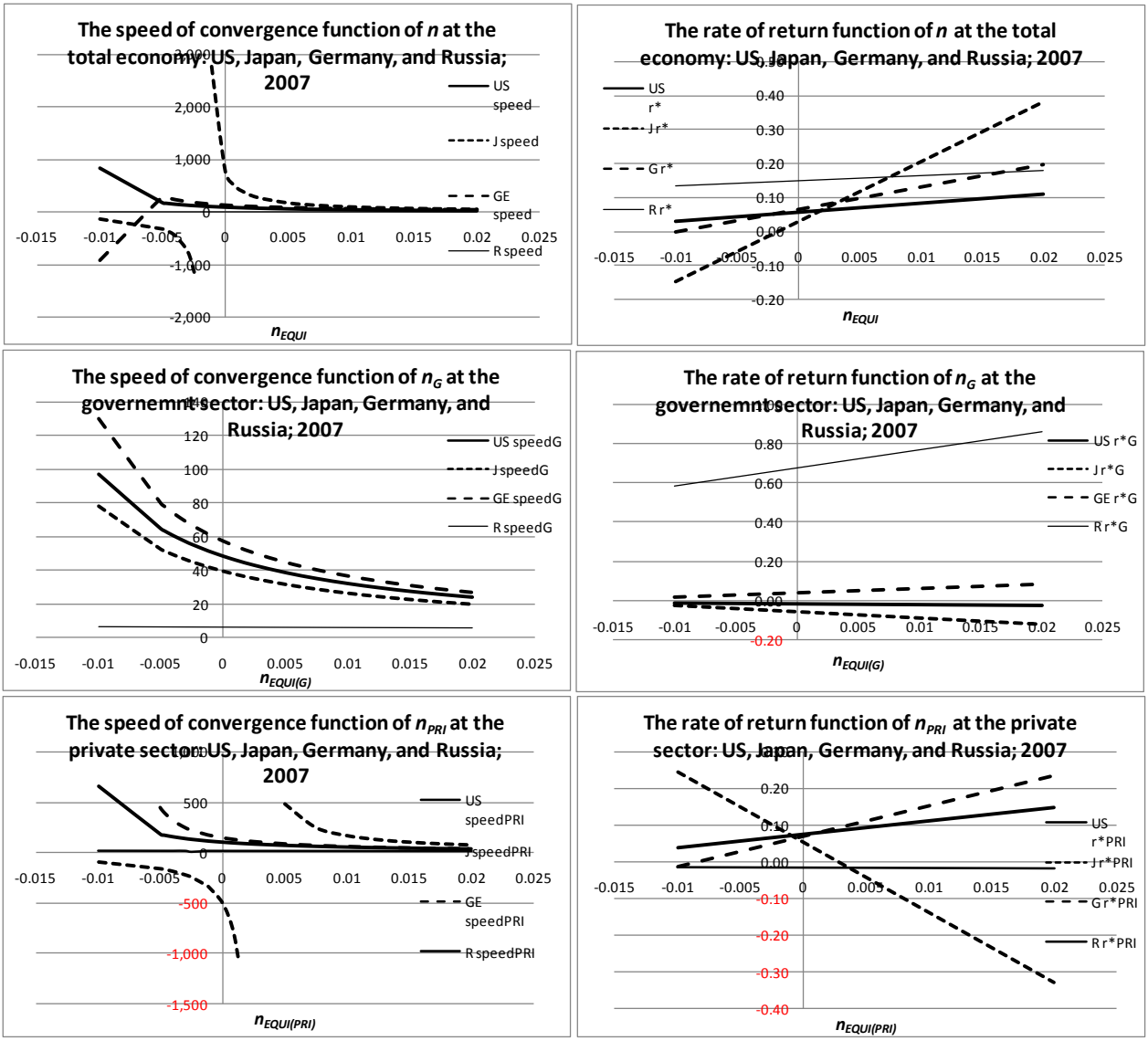


Figure A1-5 Two basic functions of the growth rate of population/employees by sector: the US, Japan, Germany, and Russia 2007 (1)

Appendix 1, *HEU*

Endogenous Phillips (6)

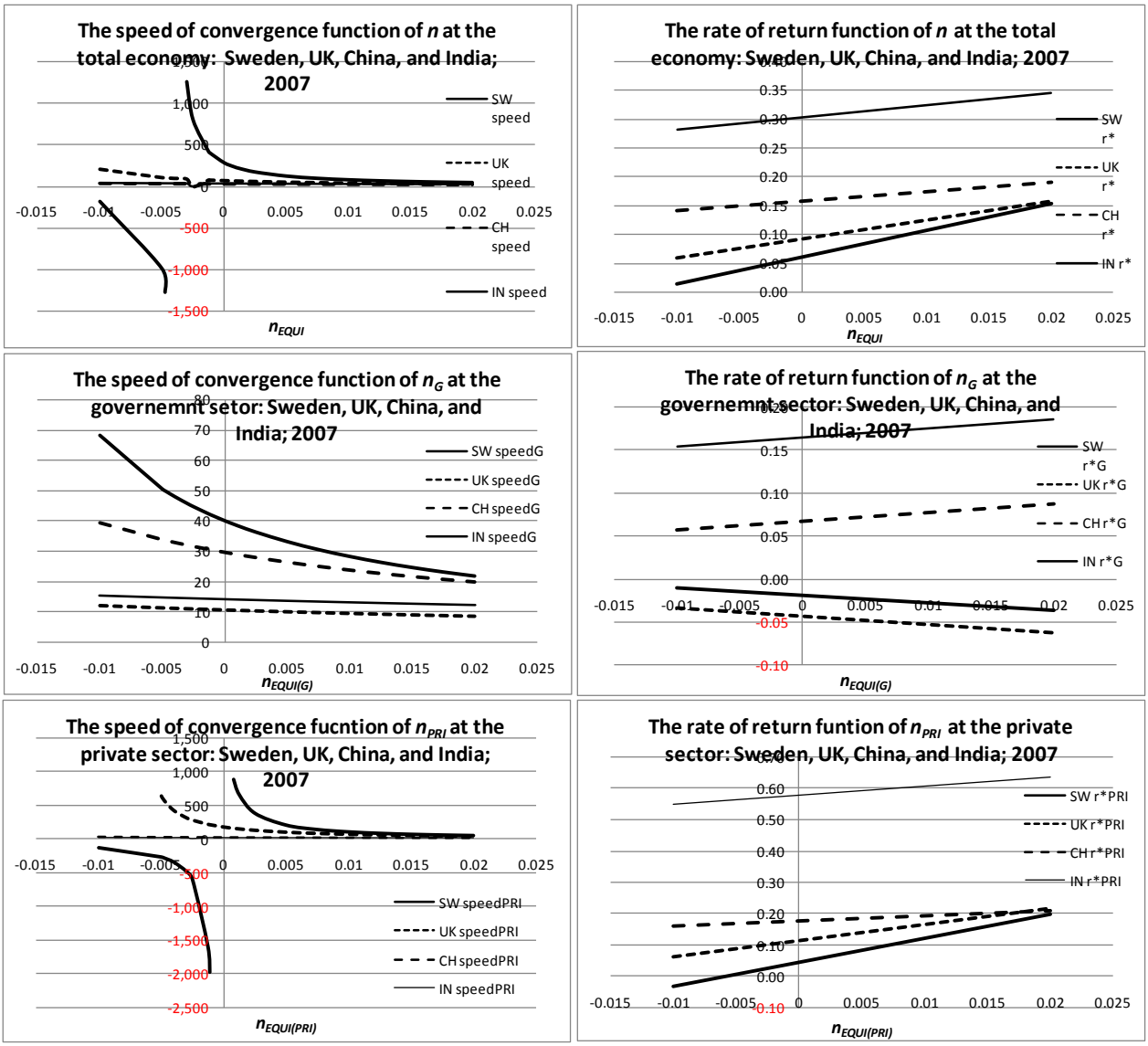


Figure A1-6 Two basic functions of the growth rate of population/employees by sector: Sweden, UK, China, and India 2007 (2)

Endogenous Phillips (7)

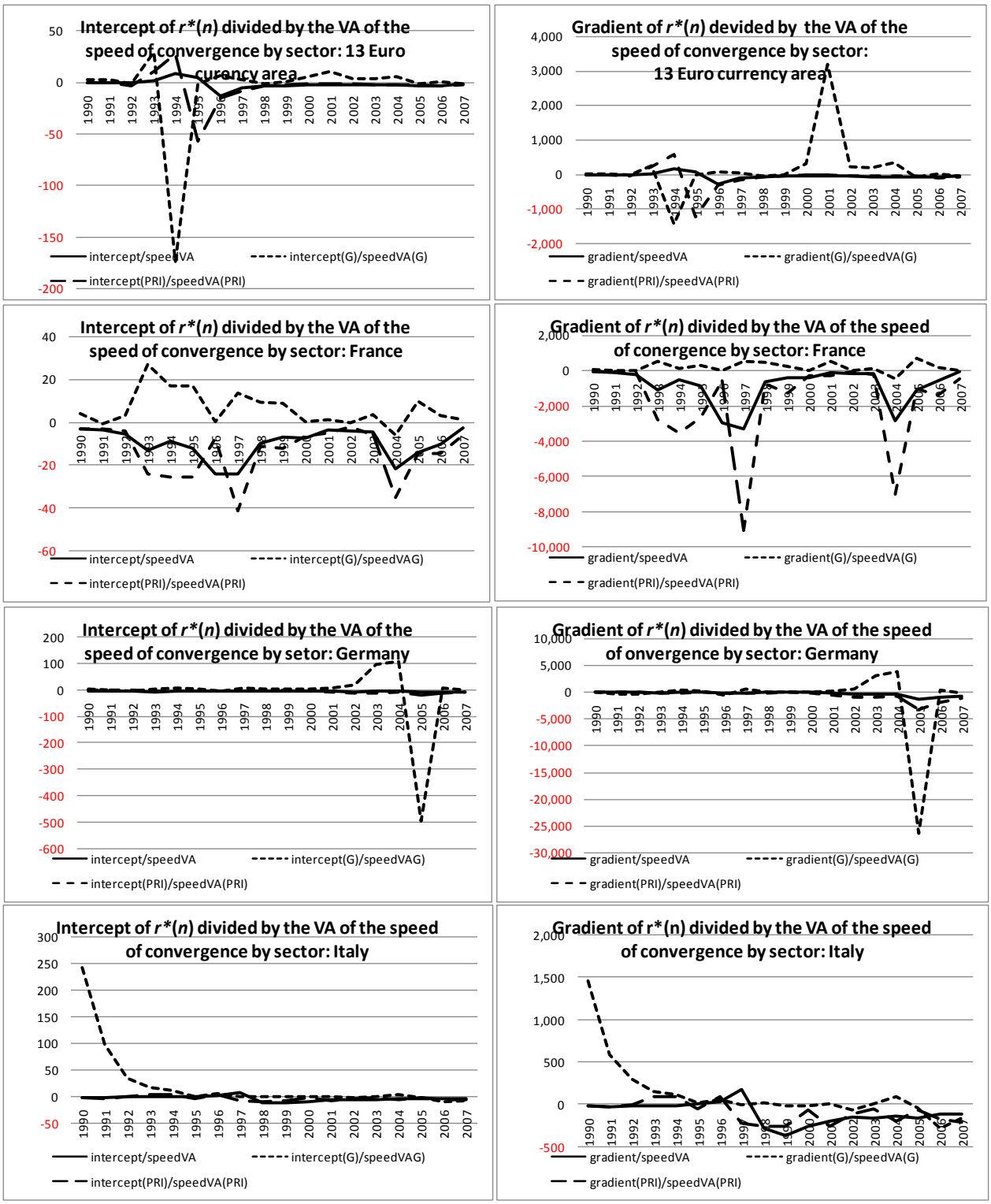


Figure A1-7 Function of $r^*(n)$ that suggests the relationship between the rate of unemployment and the inflation rate (1)

Appendix 1, *HEU*

Endogenous Phillips (8)

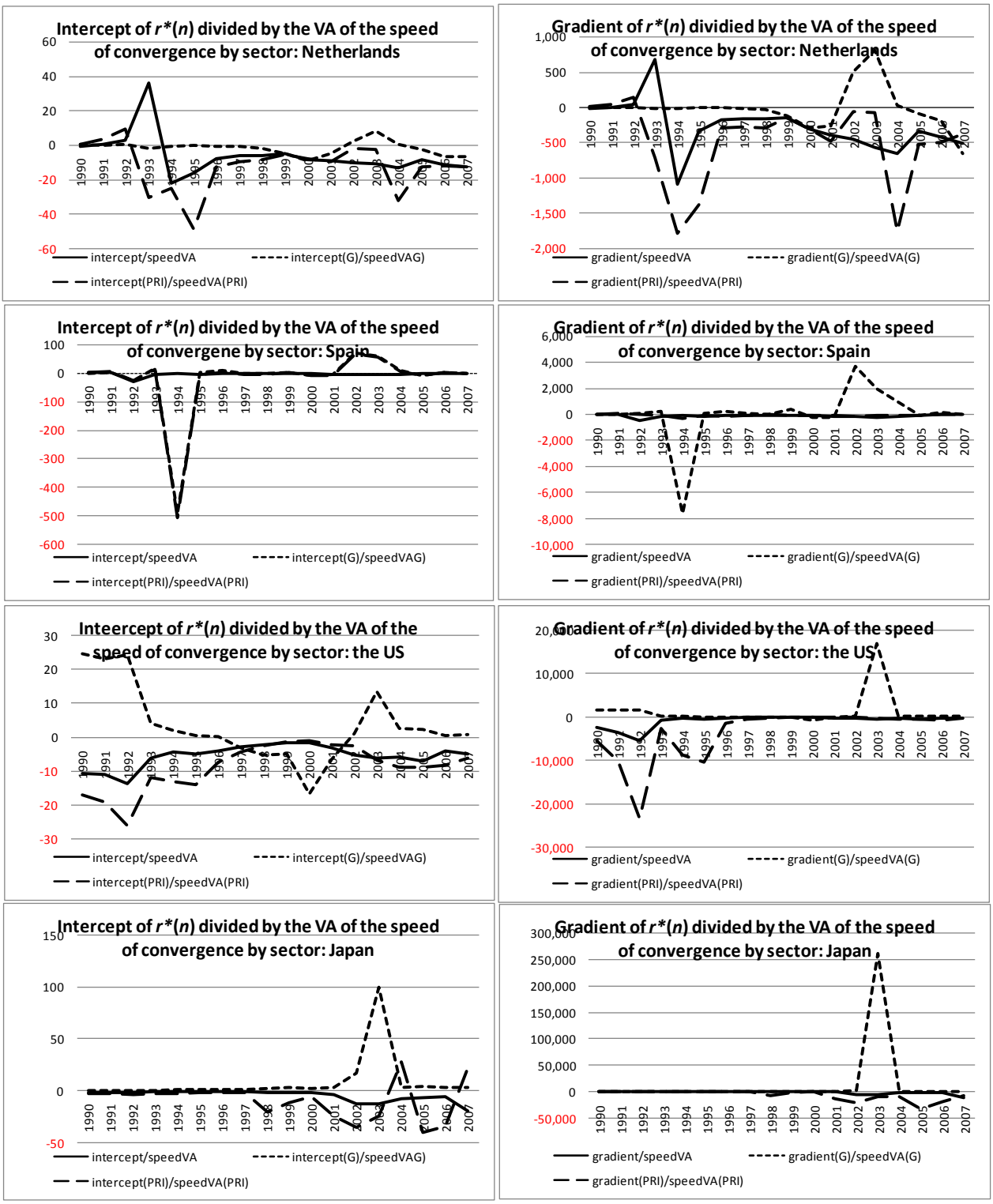
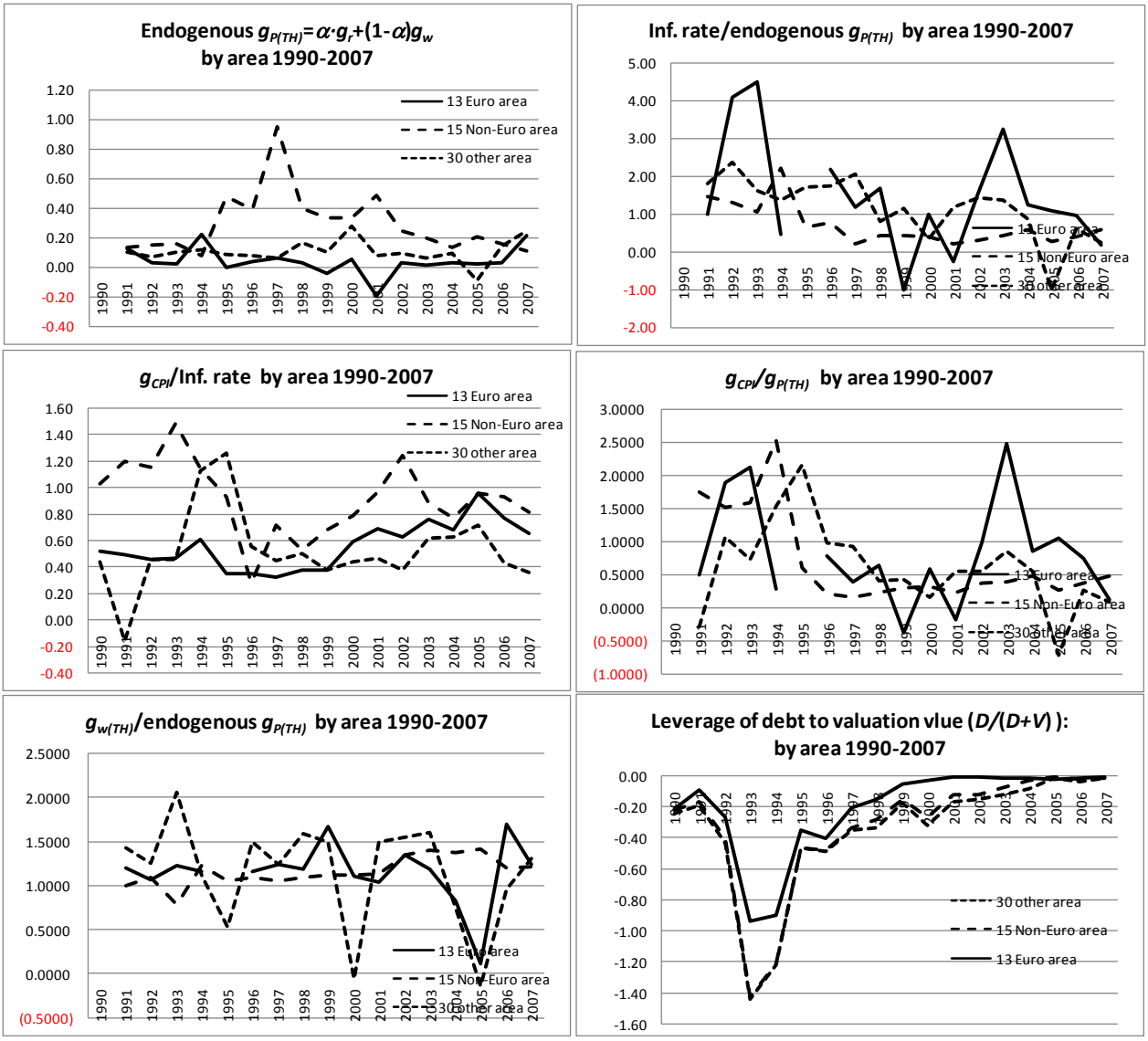


Figure A1-8 Function of $r^*(n)$ that suggests the relationship between the rate of unemployment and the inflation rate (2)

Endogenous Inflation (1)



Note: For external inflation rate, the rate of change in consumers' price index, g_{CPI},was taken. For endogenous infltion rates, one is the weighted average of the theoretical wage rate and the rate of return , $g_P = \alpha \cdot g_r + (1-\alpha)g_w$, and the other is 10 year debt yield less the real rate of return at convergence, $Inf.rate = r_{DEBT} - (r^* - r^*_{HA})$.

Data source: KEWT 3.09 of fifty-eight countries by sector, 1990-2007, whose ten original data come from *International Financial Statistics Yearbook*, IMF.

Figure A1-9 Comparisons of various inflation rates, endogenous and external, by area 1990-2007

Appendix 1, *HEU*

Endogenous Inflation (2)

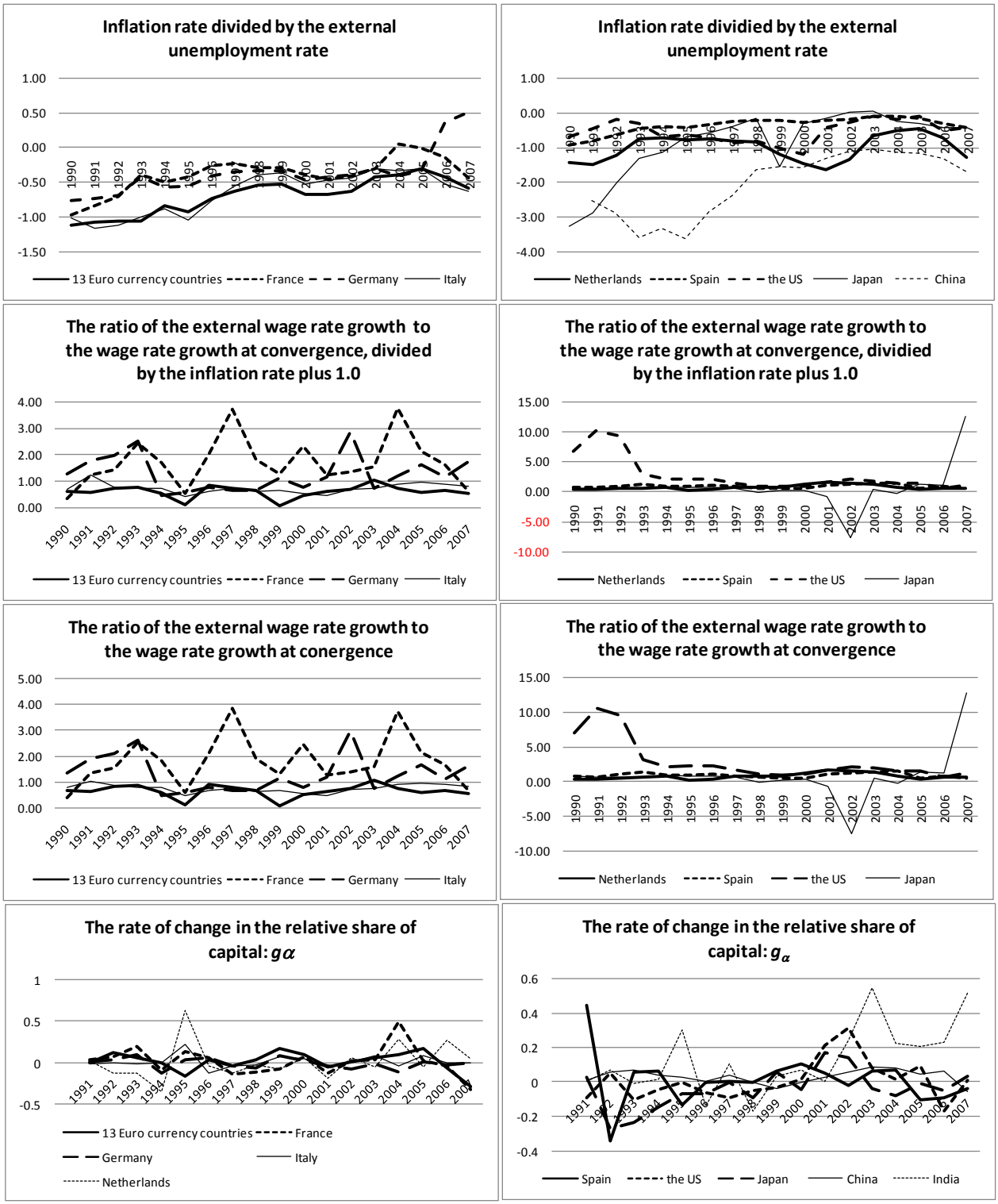


Figure A1-10 The rate of change in the relative share of capital by country

Endogenous Inflation (3)

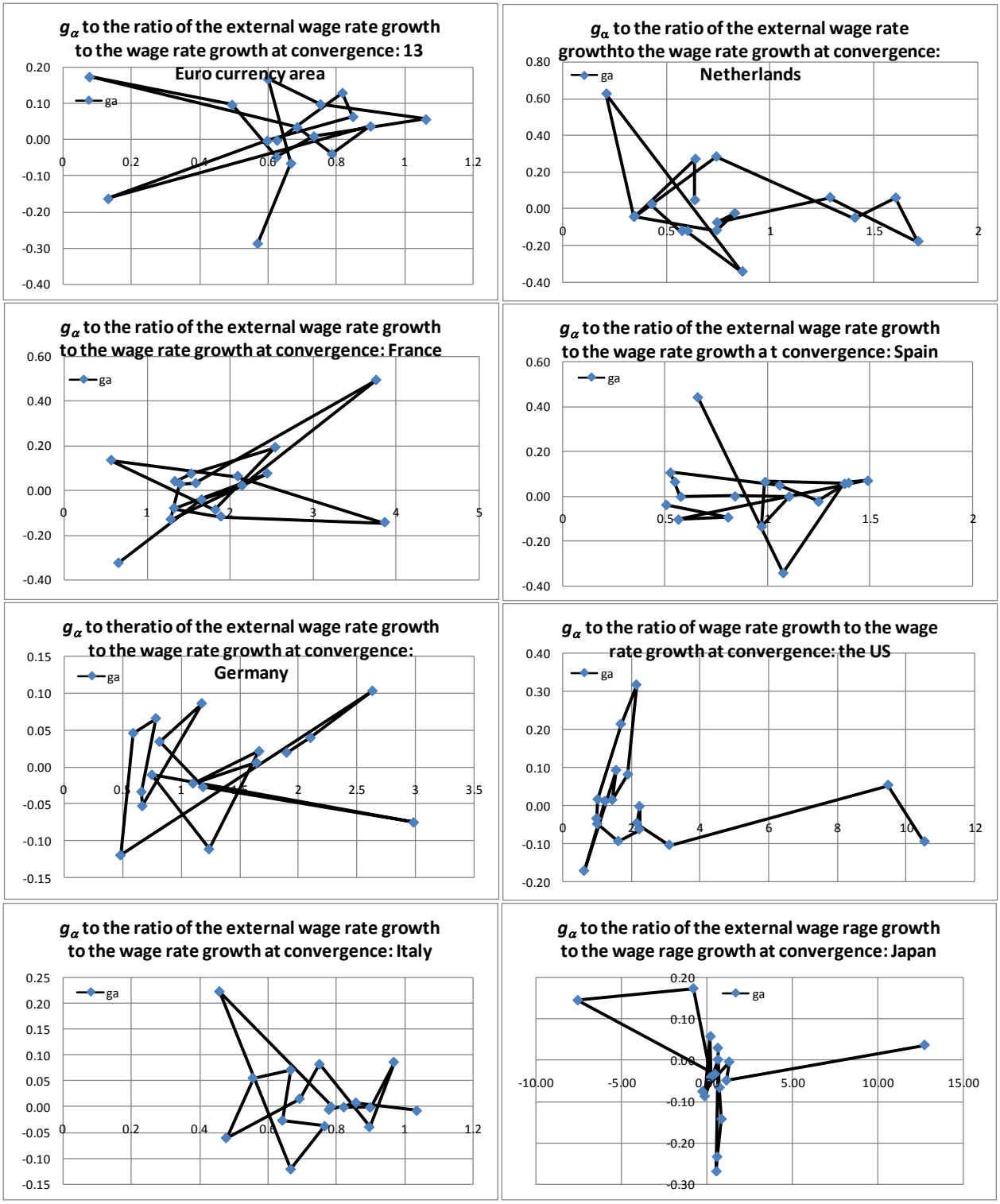


Figure A1-11 The of change in the relative share of capital versus the wage growth ratio of external to endogenous

Appendix 1, *HEU*

Growth rate of Employment in Equilibrium (1)

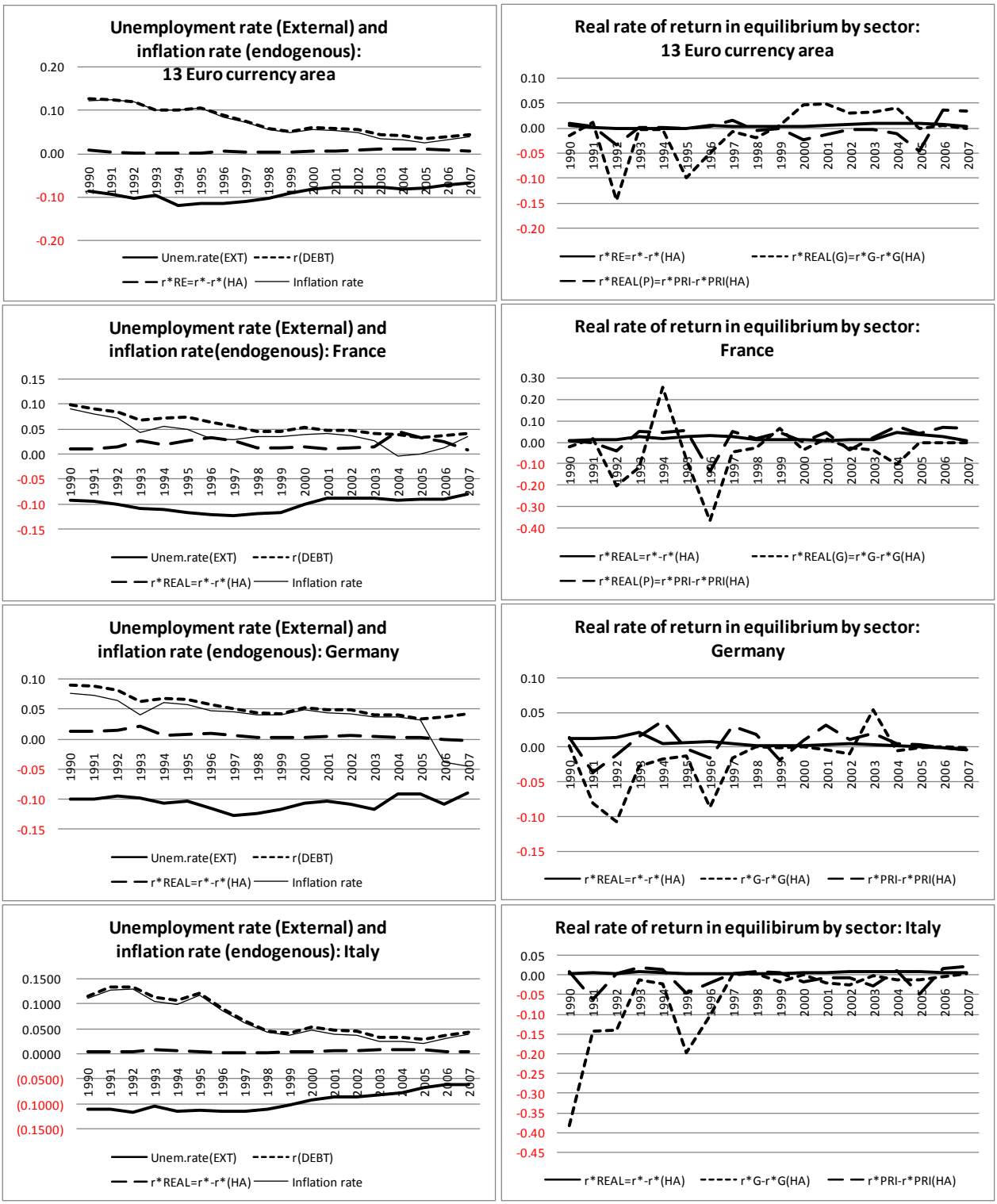


Figure A1-12 The external rate of unemployment and, the inflation rate as 10 year debt yield less the real rate of return, and the real rate of return by sector (1)

Growth rate of Employment in Equilibrium (2)

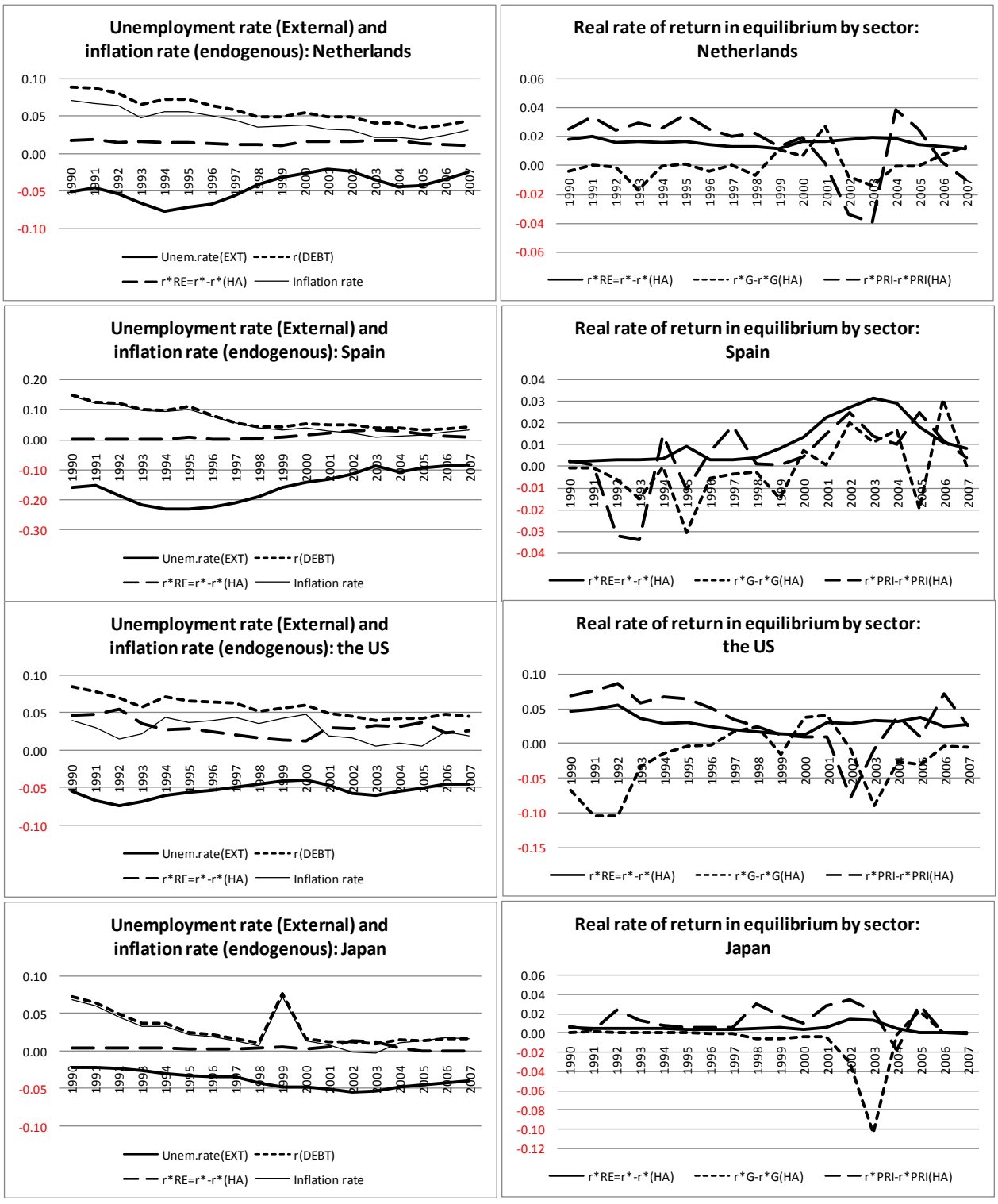


Figure A1-13 The external rate of unemployment and, the inflation rate as 10 year debt yield less the real rate of return, and the real rate of return by sector (2)

Appendix 1, *HEU*

Growth Rate of Employment in Equilibrium (3)

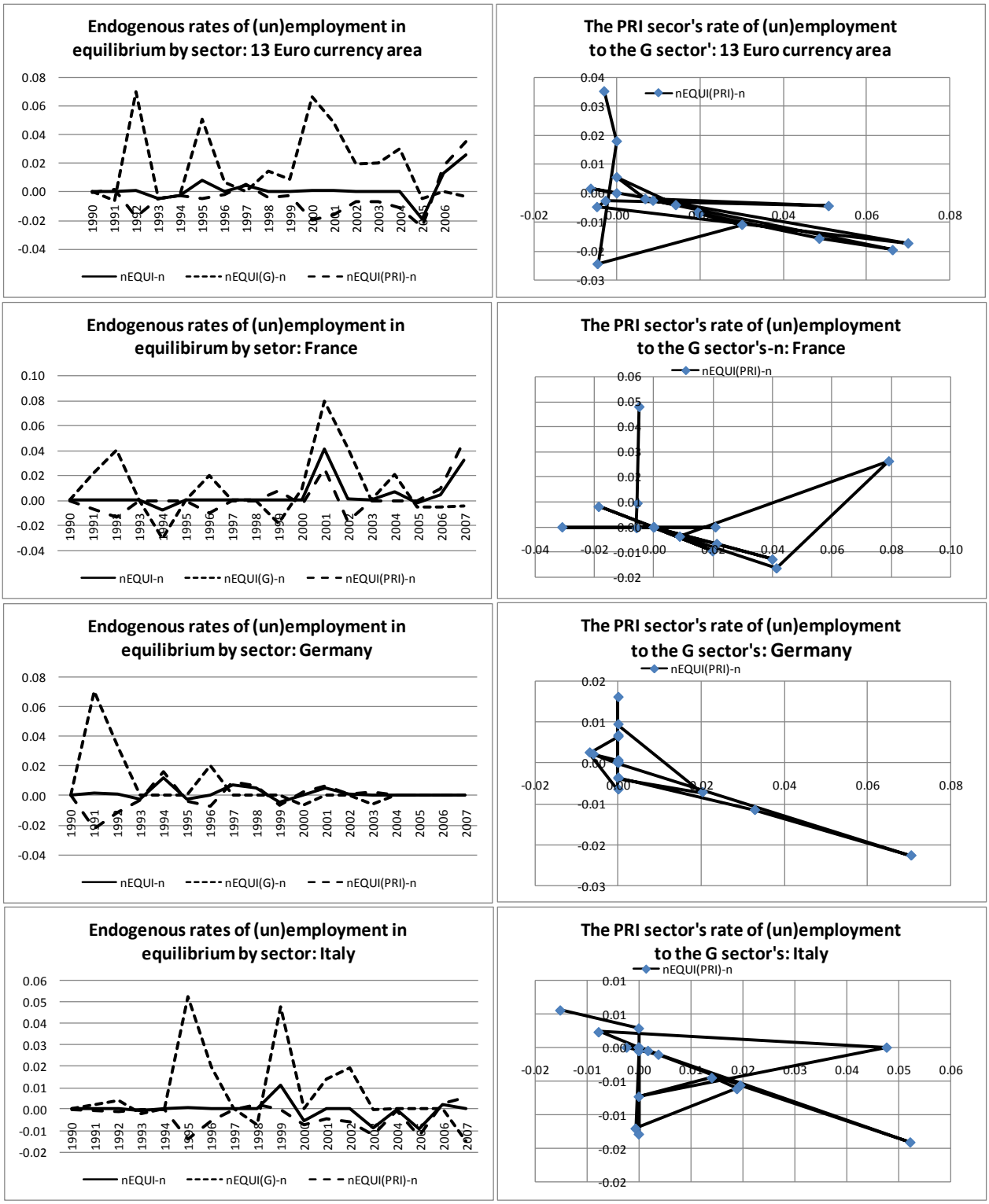


Figure A1-14 Endogenous rates of (un)employment in equilibrium and the private sector/government sector in the rate of (un)employment (1)

Growth Rate of Employment in Equilibrium (4)

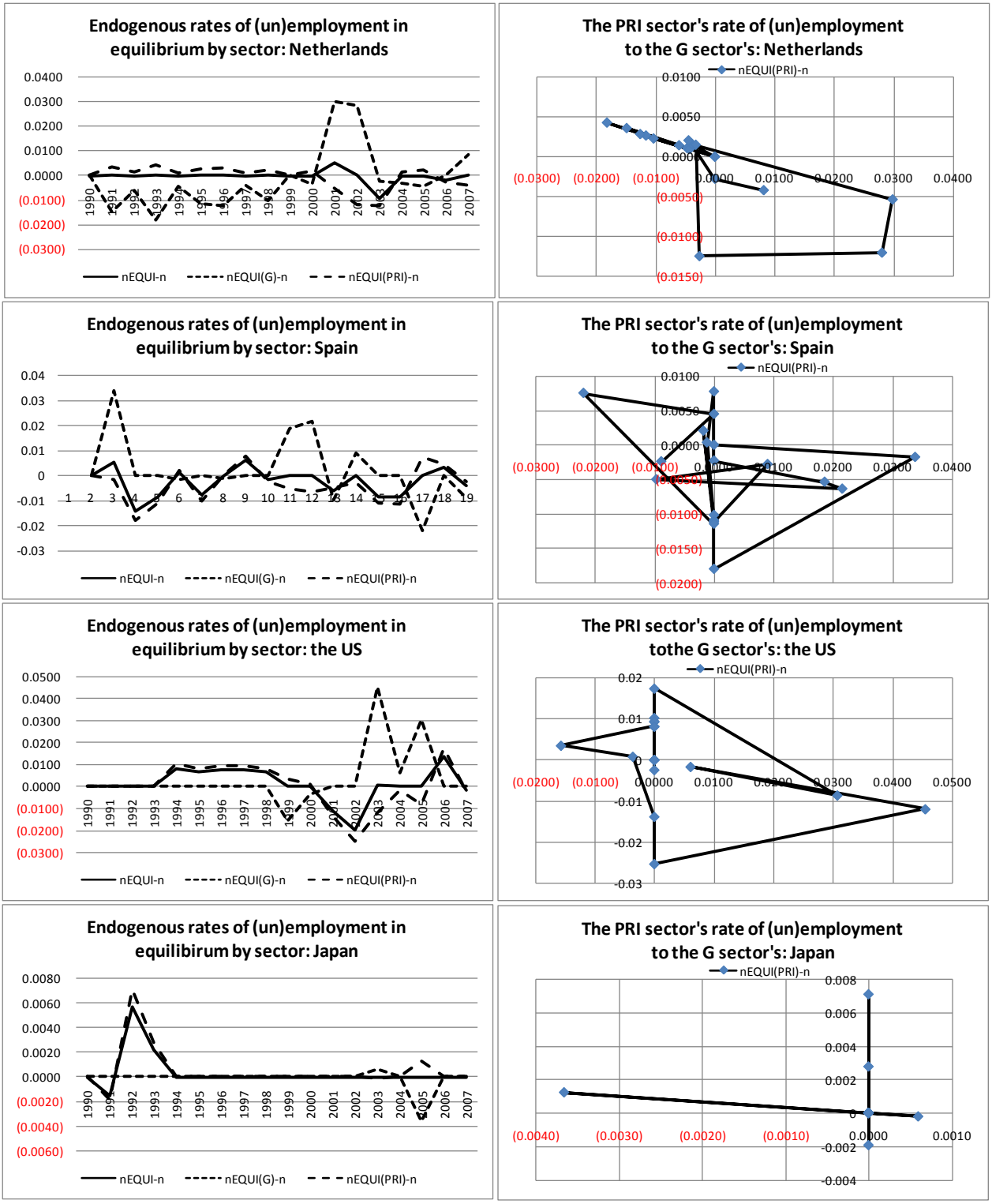


Figure A1-15 Endogenous rates of (un)employment in equilibrium and the private sector/government sector in the rate of (un)employment (2)

3. Notations

Equations endogenously connected with inflation rate, returns, and growth

3.1 Four basic equations at convergence

The rate of return at convergence:

$$r^* = \alpha\left(\frac{i\,(1-\beta^*)(1+n)+n(1-\alpha)}{i\cdot\beta^*(1-\alpha)}\right) \qquad (1)$$

where $r^* = \frac{\alpha}{\Omega^*}$ and $\Omega^* = \left(\frac{i\cdot\beta^*(1-\alpha)}{i\,(1-\beta^*)(1+n)+n(1-\alpha)}\right)$.

The horizontal asymptote (HA) of the rate of returns:

$$r^*_{HA} = \frac{\alpha(1-\beta^*)(1+n)}{\beta^*(1-\alpha)} \qquad (2)$$

The real rate of return:

$$r^*_{REAL} = r^* - r^*_{HA} = n\left(\frac{\alpha}{i\cdot\beta^*}\right) = \frac{\alpha\cdot n}{\beta^*\cdot i}. \quad [1] \qquad (3)$$

The HA is used so as to match the fact that the lower limit of the nominal interest rate is zero when an inflation rate is formulated endogenously.

For an endogenous inflation (+)/deflation (−) rate:

$$Inf.rate = Nominal\ rate - r^*_{REAL}$$

$$\text{and,}\quad \text{def.}rate = r^*_{REAL} - Nominal\ rate \qquad (4)$$

where 10 year debt yield, r_{DEBT}, is used for the market nominal rate.

3.2 The inflation/deflation rate, the rate of return, and the growth rate of output

The growth rate of output at convergence:

$$g^*_Y = \frac{i(1-\beta^*)(1+n)}{1-\alpha} + n \qquad (5)$$

where $g^*_A = i(1-\beta^*)$ and $g^*_y = i(1-\beta^*)/(1-\alpha)$ hold.

The relationship between the growth rate of output and the rate of return each convergence:

$$g^*_Y = \left(\frac{i\cdot\beta^*}{\alpha}\right)r^* \quad \text{or} \quad r^* = \left(\frac{\alpha}{i\cdot\beta^*}\right)g^*_Y, \text{ or } \left(\frac{\alpha}{i\cdot\beta^*}\right) = \frac{r^*}{g^*_Y} \qquad (6)$$

Then, using Eq. (3) above, Eq. (4) is expressed as

---

[1] If $x = r^*_{HA}/r^*$, $x = \frac{\alpha\cdot i\left((1-\beta^*)(1+n)\right)}{\alpha(i(1-\beta^*)(1+n)+n(1-\alpha))}$ and $r^*_{REAL} = (1-x)r^*$. This equation is consistent with Eq. 6, yet is not simplified enough.

$$Inf.rate = r_{DEBT} - n\left(\frac{r^*}{g_Y^*}\right) \qquad (7)$$

Or, Eq. (4) is expressed as

$$Def.rate = n\left(\frac{r^*}{g_Y^*}\right) - r_{DEBT} \qquad (8)$$

For Eq. (7), assuming that r_{DEBT} is fixed, the higher $n\left(\frac{r^*}{g_Y^*}\right)$ the lower the inflation rate is. This indicates that the growth rate of population *n* and the rate of return should be high and the growth rate of output at convergence should be low if the inflation rate should be lowered. And, the lower the r_{DEBT} the lower the inflation rate is.

For Eq. (8), assuming that r_{DEBT} is fixed, the lower $n\left(\frac{r^*}{g_Y^*}\right)$ the lower the deflation rate is. This indicates that the growth rate of population *n* and the rate of return should be low and the growth rate of output at convergence should be high if the deflation rate should be lowered. And, the higher the r_{DEBT} the lower the deflation rate is.

If a desired inflation/deflation rate is set zero:

$$r_{DEBT} = n\left(\frac{r^*}{g_Y^*}\right) \text{ or, } \quad n \cdot r^* = r_{DEBT} \cdot g_Y^* \qquad (9)$$

Eq. (8) does not use expected rates but r_{DEBT} of the financial/market assets and *n*, r^*, and g_Y^* of the real assets, where r_{DEBT} and *n* are given externally.

Part 2: The background of Phillips unemployment

Part 2 is composed of the following nine figures/illustrations, which clarify the underlying background of Phillips unemployment, from the aspect of geometrical measurement.

Here is the list of nine figures at a glance.

Figure A2-1 Hyperbola $r^*(i)$ and endogenous inflation/deflation expressed by HA

Figure A2-2 Phillips curve is expressed by linear, due to hyperbola $r^*(i)$ and $n(i)=i(n)$

Figure A2-3 Explanatories for $speed(i)$and $speed(n)$, $i(n)$ and $n(i)$, and $r^*(i)$ and $r^*(n)$

Figure A2-4 Two fundamental functions of the ratio of investment to output in equilibrium, inherent in the endogenous I-S diagram

Figure A2-5 Two fundamental functions of the ratio of investment to output in equilibrium, inherent in the endogenous Phillips curve

Figure A2-6 Endogenous Phillips' line versus external Phillips' curve: the inflation rate to the rate of unemployment

Figure A2-7 Endogenous Phillips' line versus external Phillips' curve: the inflation rate to the rate of unemployment

Figure A2-8 Effective range of equilibrium versus risky range to close disequilibrium for $i = I/Y$

Figure A2-9 Curvature most useful for policy-makers and decision-makers

The above nine figures/illustrations show hyperbola measurements, which are each short-cut of endogenous equations. The essence of the Phillip's curve and/or line is completely supported and reinforced by these figures. When statistics data are used, the Phillips curve is estimated while when endogenous data are used, the Phillips line is measured accurately.

If statistics data = endogenous data hold, as in the *EES*, the Phillips curve is always shown by lines. The mechanics is the same regardless of which data are used. We are much obliged to Phillips on this discovery and accordingly, Phillip's tests of practice machine actually manufactured by Langley family, as shown in the literature.

The substance of the machine is now scientifically fulfilled by the method of the *EES* and its hyperbola topology in the two-dimensional plane.

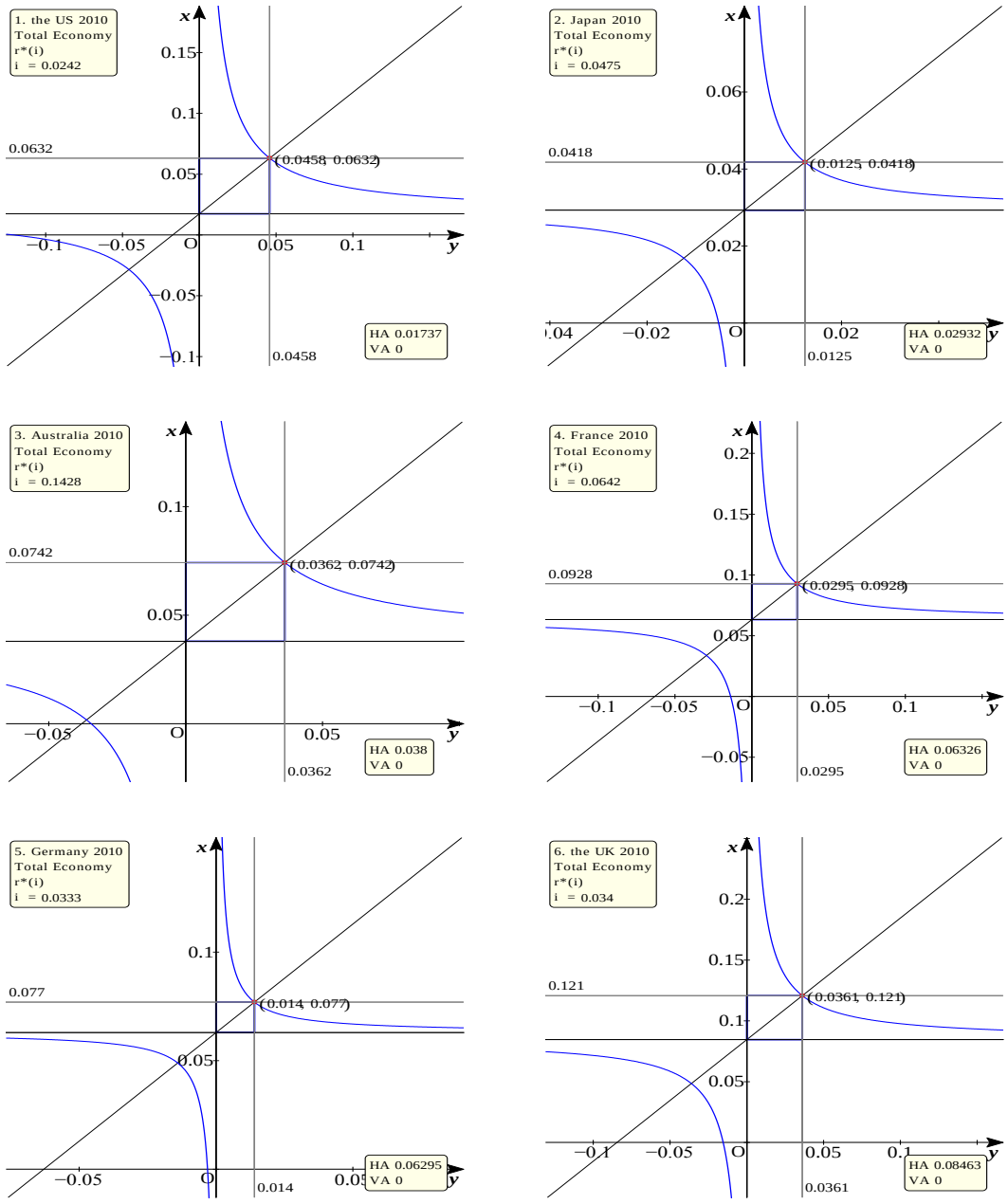


Figure 3-1 r*(i) by country 2010

Source: the *EES*, p.506, 2013.

Figure A2-1 Hyperbola $r^*(i)$ and endogenous inflation/deflation expressed by HA

Appendix 1, *HEU*

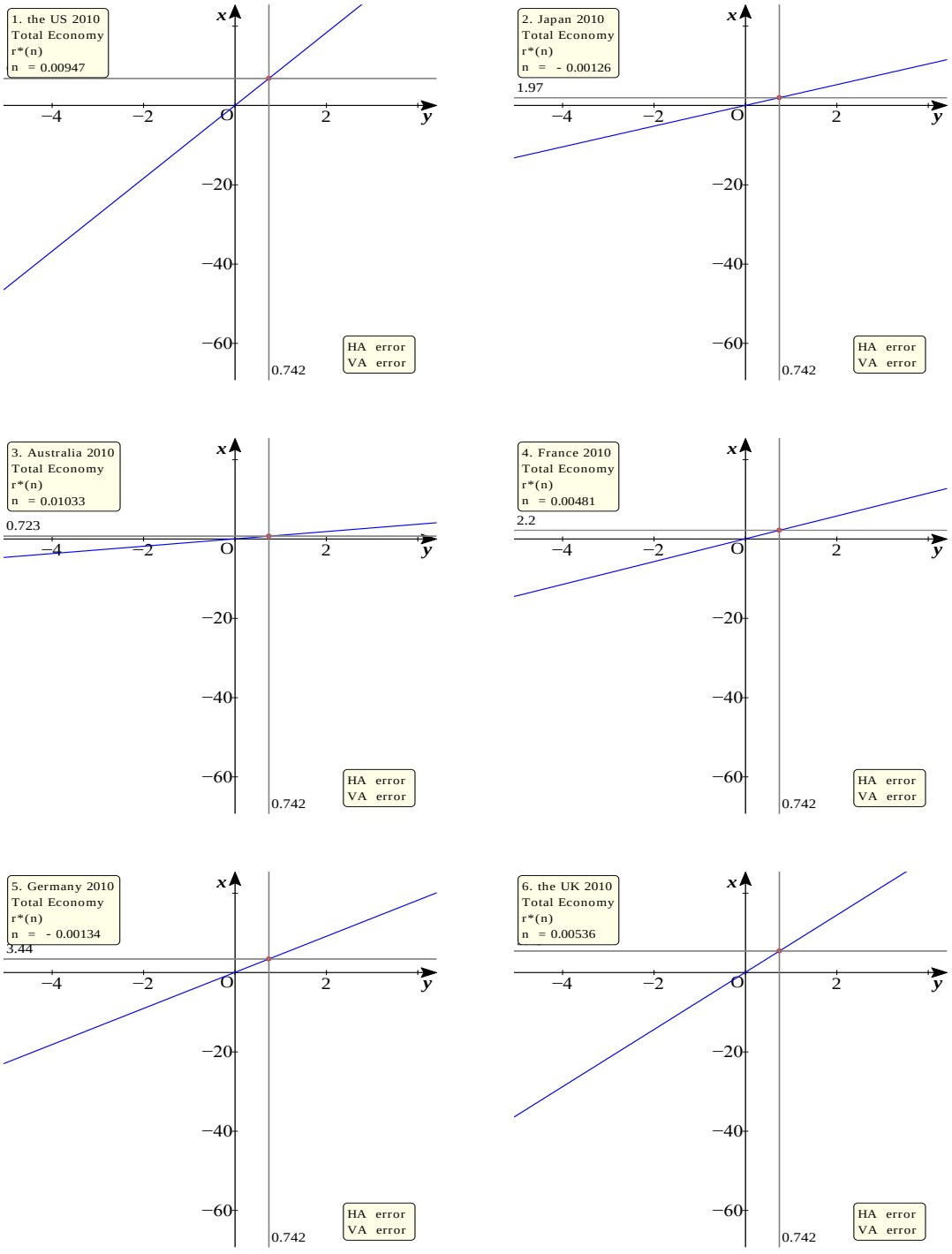
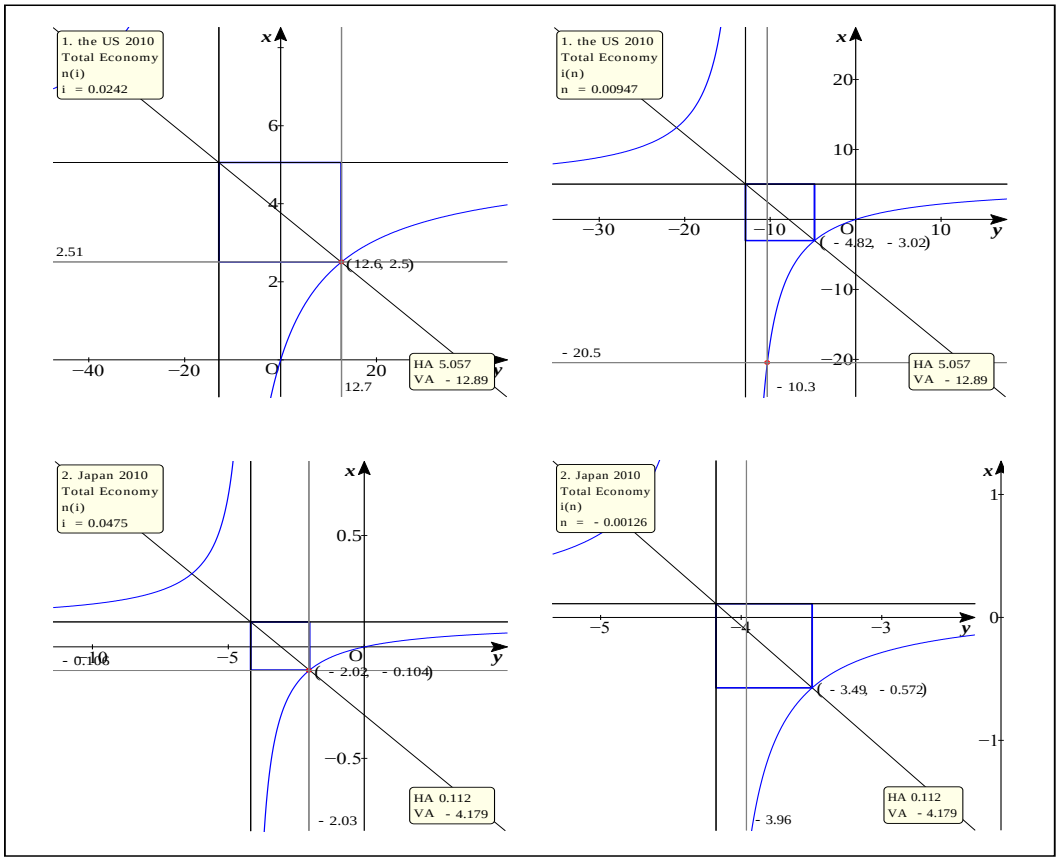


Figure 3-1 r*(n) by country 2010

Source: the *EES*, p.516, 2013.

Figure A2-2 Phillips curve is expressed by linear, due to hyperbola $r^*(i)$ and $n(i)=i(n)$



BOX B-1 Cases when each of elements, a, b, c, d, is zero (the EES, 478, 2013)

i) a=0, the linear type: $y = \frac{cx+d}{b}$ or $y = \frac{c}{b}x + \frac{d}{b}$. To $r^*(n)$.

ii) b=0: $y = \frac{cx+d}{ax}$ and $y = \frac{c}{a} + \frac{d}{ax}$. To $r^*(i)$; $\beta^*(i)$.

iii) c=0 and d=1: $y = \frac{1}{ax+b}$. To $speed(i)$ and $speed(n)$.

iv) d=0: $y = \frac{cx}{ax+b}$ and $y = \frac{c}{a} + \frac{-\frac{b \cdot c}{a}}{ax+b}$. To $n(i)$ or $i(n)$; $\Omega^*(i)$ and $\Omega^*(n)$; $\Omega^*(\beta^*)$.

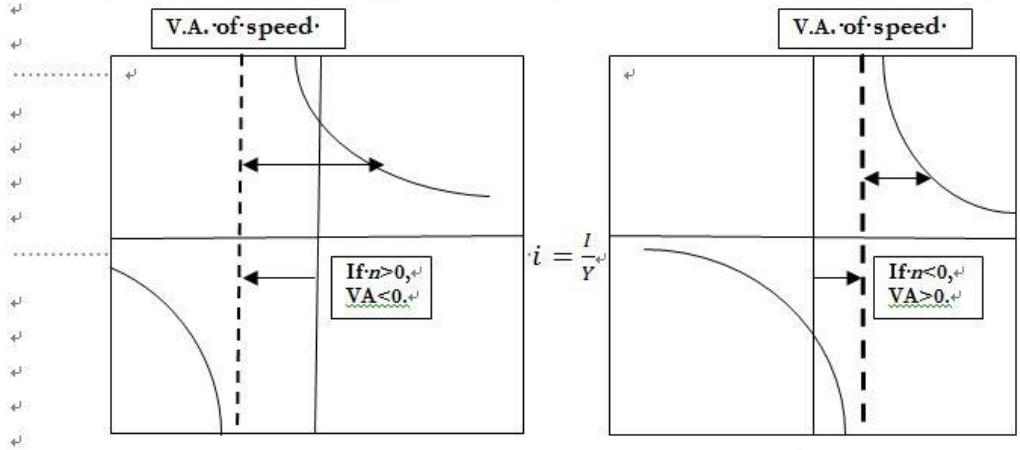
v) c=0: $y = \frac{d}{ax+b}$. To $\Omega^*(n)$.

vi) No zero, the standard type: $y = \frac{cx+d}{ax+b}$ and $y = \frac{c}{a} + \frac{d-\frac{b \cdot c}{a}}{ax+b}$. To $\beta^*(n)$; $\alpha(i)$ and $\alpha(n)$.

Figure A2-3 Explanatories for $speed(i)$and $speed(n)$, $i(n)$ and $n(i)$, and $r^*(i)$ and $r^*(n)$

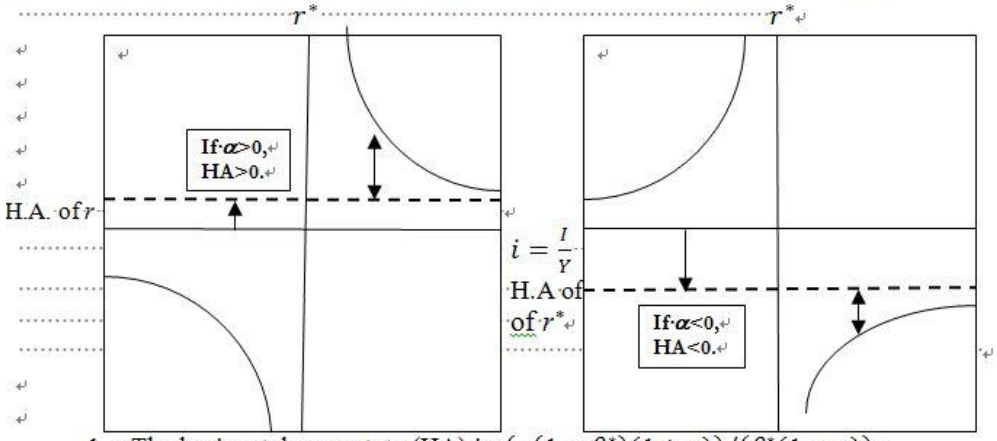
Appendix 1, *HEU*

1. The speed of convergence function of the ratio of investment to output: $i = I/Y$



1. On the vertical asymptote (VA), the speed of convergence, $1/\lambda^*$, is infinite.
2. The horizontal asymptote (HA) is $1/\lambda^* = 0$ and, the curvature=1.
3. The curve is reversed if $(1-\beta^*)(1-\delta_0) < 0$, which rarely occurs.

2. The rate of return function of the ratio of investment to output: $i = I/Y$



1. The horizontal asymptote (HA) is: $(\alpha(1-\beta^*)(1+n))/(\beta^*(1-\alpha))$.
2. The first quadrant on the LHS shows inflation with diminishing returns.
3. The second quadrant on the RHS shows real deflation with increasing returns.
4. If the sum of $r^*(i)$ and its H.A. are plus, these are normal; if these are minus, it implies that 'falling into the trap of liquidity. H.A=0 implies a base of inflation/deflation.
5. The curve is reversed under $a \cdot f = \alpha \cdot n \cdot \beta^*(1-\alpha)^2 < 0$; from the first to second quadrant. This occurs often at the government sector, where its relative share of capital turns to minus due to huge deficits or a minus saving.

Note: Two parts of figures above show related equations, where parameters except for $i = I/Y$ or n are fixed. These figures hold by sector and at the total economy; T=G+PRI.

Figure A2-4 Two fundamental functions of the ratio of investment to output in equilibrium, inherent in the endogenous I-S diagram

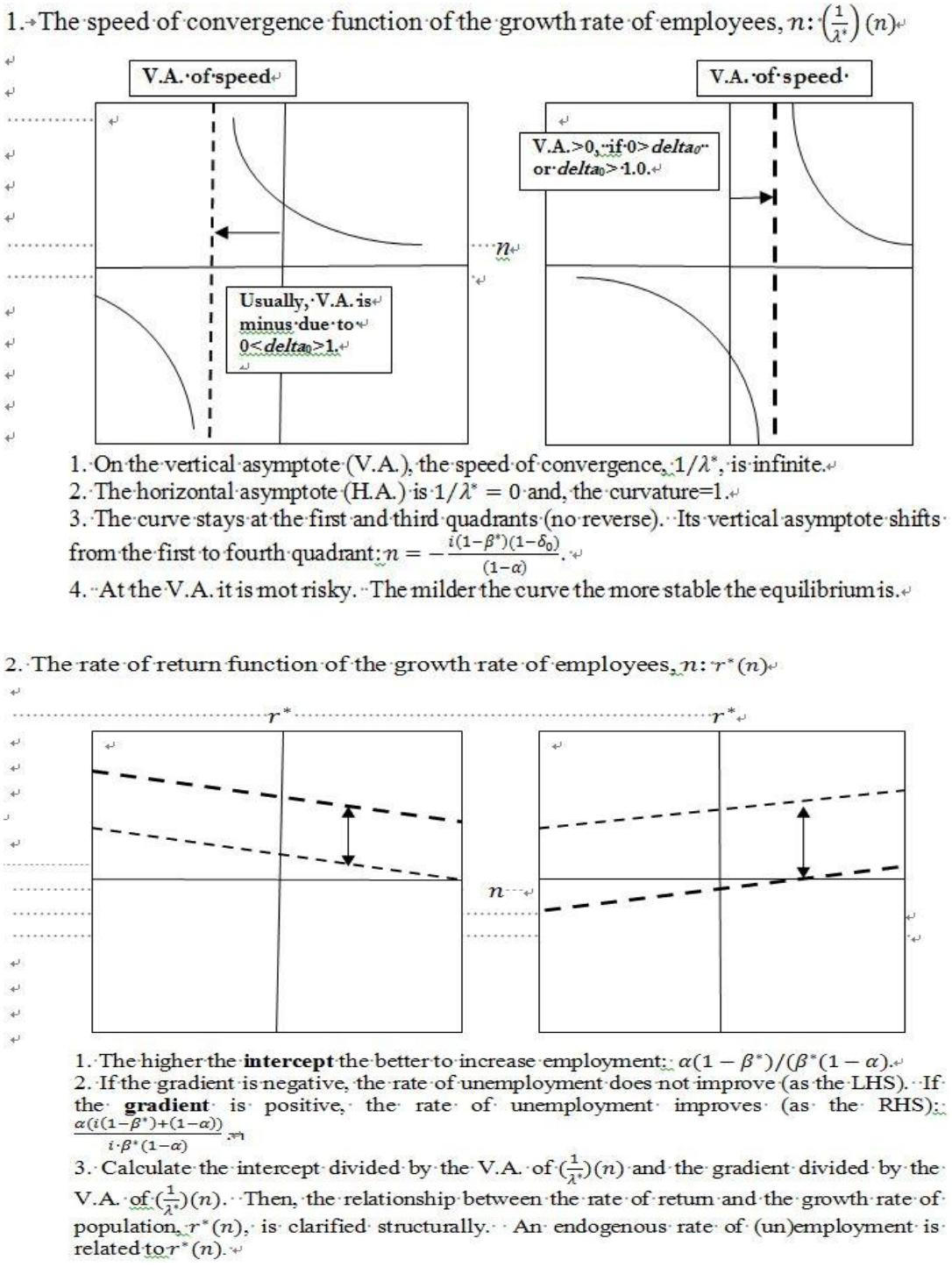


Figure A2-5 Two fundamental functions of the ratio of investment to output in equilibrium, inherent in the endogenous Phillips curve

Appendix 1, *HEU*

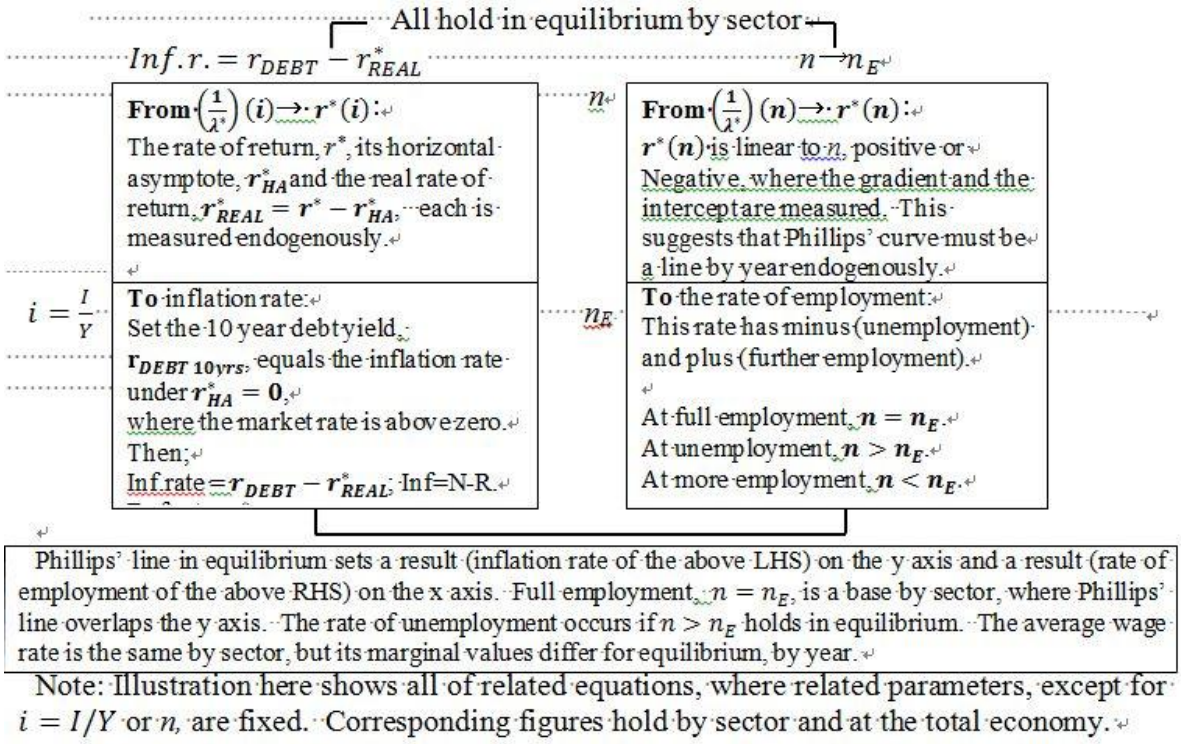


Figure A2-6 Endogenous Phillips' line versus external Phillips' curve: the inflation rate to the rate of unemployment

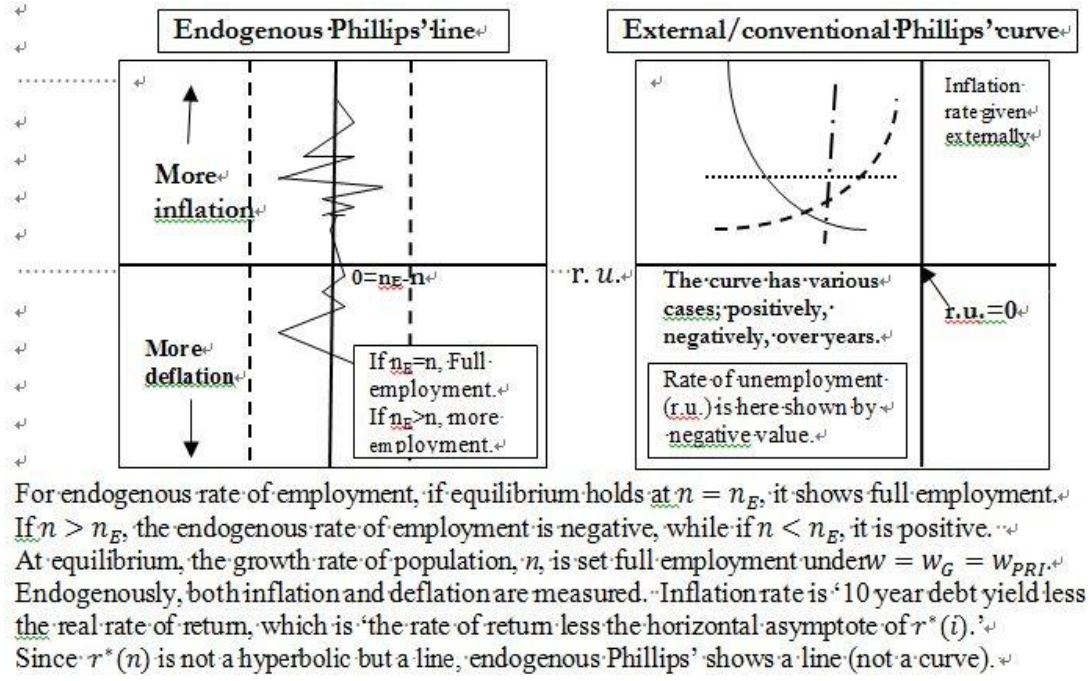
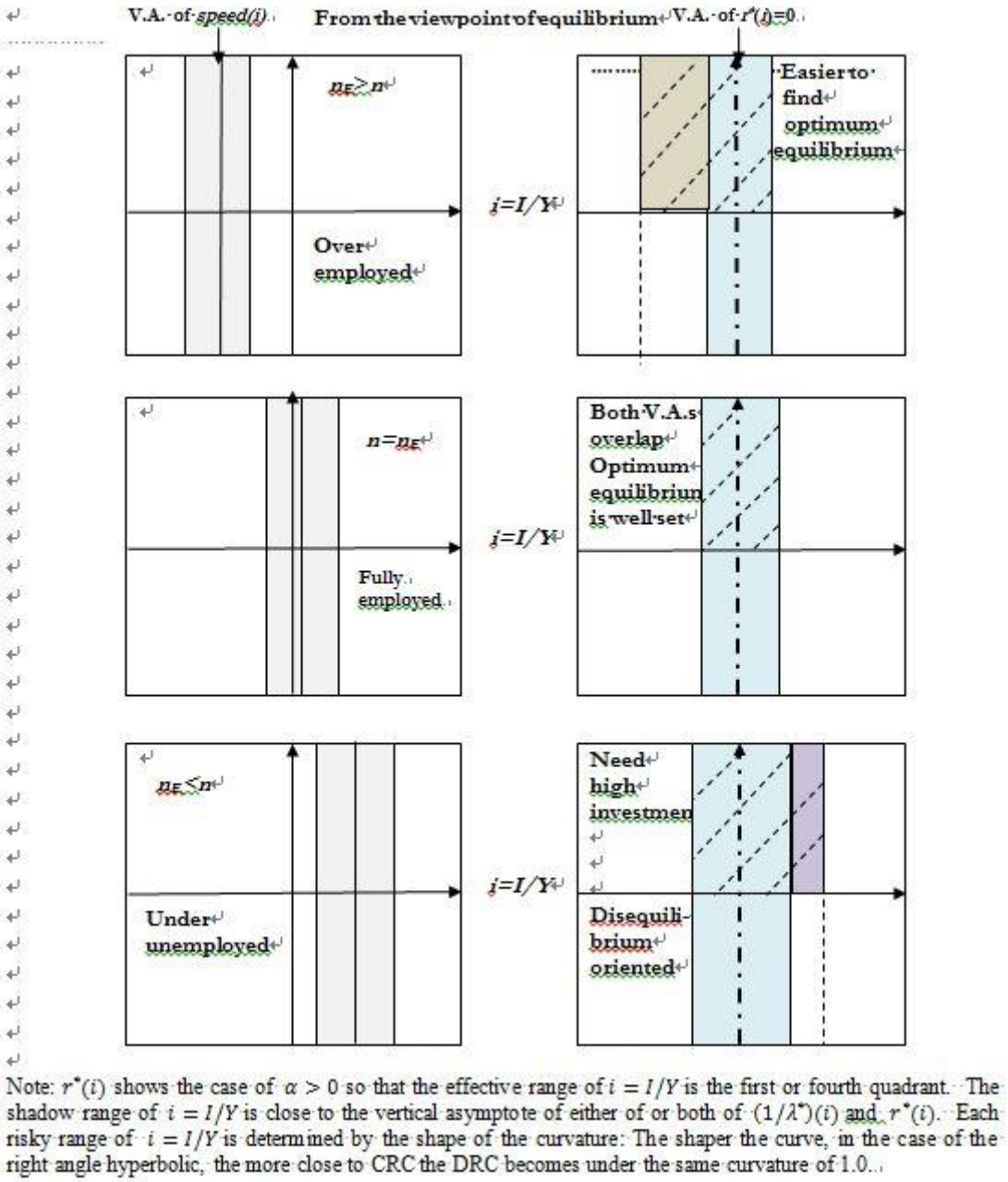


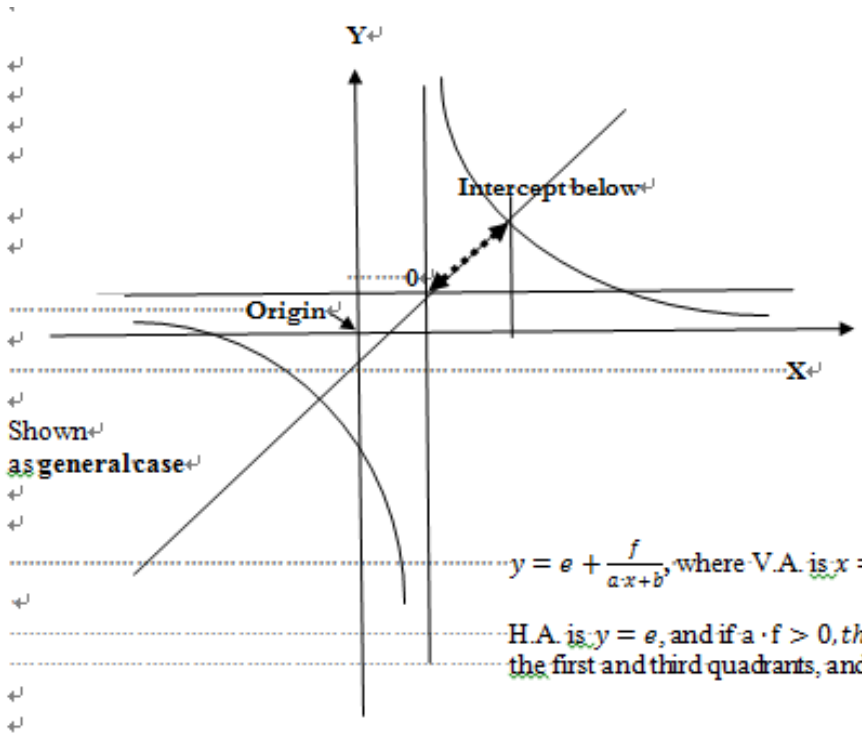
Figure A2-7 Endogenous Phillips' line versus external Phillips' curve: the inflation rate to the rate of unemployment



Note: $r^*(i)$ shows the case of $\alpha > 0$ so that the effective range of $i = I/Y$ is the first or fourth quadrant. The shadow range of $i = I/Y$ is close to the vertical asymptote of either of or both of $(1/\lambda^*)(i)$ and $r^*(i)$. Each risky range of $i = I/Y$ is determined by the shape of the curvature: The shaper the curve, in the case of the right angle hyperbolic, the more close to CRC the DRC becomes under the same curvature of 1.0.

Figure A2-8 Effective range of equilibrium versus risky range to close disequilibrium for $i = I/Y$

Appendix 1, *HEU*



Note: This figure is important as a preliminary step into an endogenous Phillips' curve/line.
Two functions, $(1/\lambda^*)(i)$ and $r^*(i)$, each constitutes a right angle hyperbolic, whose curvature is 1.0.
Nevertheless, each shape differs by 'the length of the arrow, ◄···►'. The longer the arrow, the more diminishing.
The author is grateful to the advice of Yoshiomi Furuta, Prof. of mathematics.

Case of the hyperbolic, $(\frac{1}{\lambda^*})(i)$: The V.A. is $-b/a$, where $b = (1-\alpha)n$ and $a = (1-\beta^*)(1-\delta_0)$. The curvature is the same 1.0 at any point of $i = I/Y$ yet, the shape differs significantly by the magnitude of $\sqrt{c/a}$, where $\frac{c}{a} = \frac{\alpha(1-\beta^*)(1+n)}{\beta^*(1-\alpha)}$. Because it is required to shorten the distance between the V.A. and the root square $\sqrt{c/a}$; $\sqrt{c/a} - b/a$, where $c = \alpha(1-\beta^*)(1+n)$. When $\sqrt{c/a}$ is lowered, the shape becomes sharpened approaching CRC.

Figure A2-9 Curvature most useful for policy-makers and decision-makers