

Common Macro Factors and Currency Premia

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Internet Appendix

[This appendix contains additional results and information that is referred to in the main text but is not intended for publication. It will be made available online for interested readers.]

Table A.1 In-Sample Analysis: Other Published Studies

The table reports OLS estimates for carry and momentum excess returns obtained from other published studies. In *Panel A* the dependent variable is the currency excess returns of the carry trade strategy (net excess returns) from Lustig et al. (2011).¹ *Panel B* reports results for currency excess returns of the carry trade strategy (equation 2 for K=1,2) of Bakshi and Panayotov (2013). NW represents Newey and West (1987) heteroskedasticity and autocorrelation consistent *t-statistics*, constructed with the optimal number of lags chosen following Andrews (1991). B denotes the bootstrap *p-values* based on 10,000 bootstrap iterations. The data span the period 1985:07-2012:03.

Panel A: Carry Trades (Lustig et al. (2011))															
	<i>cons</i>	$\hat{g}_{2,t}$	$\hat{g}_{2,t-3}$	$\hat{h}_{3,t}$	$\hat{h}_{7,t}$	\bar{R}^2		<i>cons</i>	$\hat{g}_{2,t}$	$\hat{g}_{2,t-3}$	\hat{h}_4	\hat{h}_5	\hat{h}_6	\hat{h}_7	\bar{R}^2
<i>All Countries</i>															
(a)	0.38	0.67	-0.53			0.04		0.26	0.93	-0.79					0.07
NW	2.70	3.84	-3.74			15.84		1.69	3.24	-2.94					15.94
B	0.01	0.00	0.00			0.00		0.09	0.00	0.00					0.00
(b)	0.37			0.33		0.01		0.27			0.42	0.12	0.28	-0.16	0.02
NW	2.41			1.88		3.72		1.60			1.53	0.72	1.96	-1.07	7.66
B	0.01			0.05		0.05		0.10			0.10	0.51	0.05	0.29	0.10
(c)	0.38	0.62	-0.52	0.09	-0.01	0.04		0.27	0.86	-0.72	0.10	0.06	0.22	-0.19	0.07
NW	2.70	3.19	-3.90	0.47	-0.10	15.42		1.74	3.61	-2.56	0.40	0.43	1.45	-1.24	22.51
B	0.01	0.00	0.00	0.64	0.92	0.00		0.09	0.00	0.00	0.67	0.72	0.13	0.22	0.00
Panel B: Carry Trades (Bakshi and Panayotov (2013))															
<i>Carry 1</i>												<i>Carry 2</i>			
(a)	0.18	0.64	-0.45			0.04		0.15	0.53	-0.40					0.08
NW	1.26	2.69	-3.28			12.48		1.48	3.47	-2.77					16.23
B	0.21	0.00	0.00			0.00		0.14	0.00	0.00					0.00
(b)	0.18			0.40	-0.25	0.03		0.14			-0.20	0.06	0.12		0.01
NW	1.27			1.81	-1.93	7.31		1.28			-1.76	0.60	1.38		4.39
B	0.21			0.02	0.07	0.03		0.16			0.10	0.60	0.13		0.22
(c)	0.16	0.51	-0.44	0.22	-0.27	0.05		0.15	0.49	-0.35	-0.08	0.04	0.10		0.08
NW	1.21	1.96	-3.62	0.86	-2.06	15.45		1.43	3.25	-2.33	-0.75	0.35	1.06		20.06
B	0.25	0.05	0.01	0.33	0.05	0.00		0.14	0.00	0.02	0.50	0.78	0.25		0.00

¹ <http://web.mit.edu/adrien/www/Data.html>

Table A.2 In-sample analysis: Different Subsamples – Carry Trades

The table reports OLS estimates for the carry trade strategy of different subsamples. The dependent variable is the currency excess return (ψ^{HML}) based on the carry trade strategy that goes long (short) a basket of currencies with highest (lowest) forward discounts, or the exchange rate component (Δs^{HML}) of the strategy. NW represents Newey and West (1987) heteroskedasticity and autocorrelation consistent *t-statistics*, constructed with the optimal number of lags chosen following Andrews (1991). B denotes the bootstrap *p-values* based on 10,000 bootstrap iterations. The data span the period 1985:07-2012:03.

Panel A: 1985:07-1992:12											
	<i>cons</i>	\hat{g}_2	\hat{h}_5	\hat{h}_6	R^2		<i>cons</i>	\hat{g}_2	\hat{h}_5	\hat{h}_6	R^2
<i>All Countries</i>						<i>Developed Countries</i>					
ψ^{HML}	1.30	1.67			0.05		1.31	1.46			0.03
NW	3.43	2.63			5.86		3.06	1.97			3.69
B	0.02	0.02			0.02		0.03	0.06			0.05
ψ^{HML}	1.33	1.82	0.06	0.24	0.04		1.45	1.75	0.22	0.33	0.02
NW	4.03	2.95	0.25	1.05	5.86		3.64	2.51	0.79	1.33	5.67
B	0.02	0.01	0.86	0.31	0.02		0.02	0.03	0.58	0.25	0.06
Δs^{HML}	-0.42	-1.64			0.05		-0.74	-1.54			0.04
NW	-1.15	-2.44			5.37		-1.72	-1.97			3.91
B	0.44	0.02			0.02		0.18	0.05			0.05
Δs^{HML}	-0.52	-1.85	-0.17	-0.20	0.04		-0.92	-1.84	-0.28	-0.27	0.03
NW	-1.62	-2.87	-0.65	-0.87	6.76		-2.31	-2.53	-1.02	-1.12	5.35
B	0.38	0.02	0.66	0.48	0.08		0.13	0.03	0.47	0.34	0.14
Panel B: 1992:12-2012:03											
<i>All Countries</i>						<i>Developed Countries</i>					
ψ^{HML}	0.31	0.48			0.04		0.04	0.58			0.04
NW	1.40	2.08			5.29		0.17	1.89			3.28
B	0.10	0.02			0.02		0.85	0.07			0.07
ψ^{HML}	0.33	0.51	0.25	0.33	0.06		0.07	0.61	0.30	0.38	0.06
NW	1.82	3.20	1.45	2.01	12.59		0.29	2.05	1.14	2.66	9.49
B	0.07	0.02	0.12	0.03	0.01		0.78	0.06	0.31	0.03	0.02
Δs^{HML}	0.75	-0.48			0.04		0.23	-0.62			0.04
NW	3.72	-2.40			7.42		0.86	-2.04			4.14
B	0.00	0.01			0.01		0.32	0.04			0.04
Δs^{HML}	0.72	-0.49	-0.12	-0.26	0.04		0.20	-0.65	-0.28	-0.38	0.06
NW	4.09	-2.63	-0.77	-1.93	9.46		0.80	-2.19	-1.07	-2.61	10.17
B	0.00	0.01	0.43	0.10	0.02		0.41	0.05	0.35	0.03	0.02

Table A.3 In-sample analysis: Different Subsamples – Dollar Carry Trades

The table reports OLS estimates for the dollar carry trade strategy of different subsamples. The dependent variable is the currency excess return (ψ^{USD}) based on the carry trade strategy that goes long (short) a basket of currencies with highest (lowest) forward discounts, or the exchange rate component (Δs^{USD}) of the strategy. NW represents Newey and West (1987) heteroskedasticity and autocorrelation consistent *t-statistics*, constructed with the optimal number of lags chosen following Andrews (1991). B denotes the bootstrap *p-values* based on 10,000 bootstrap iterations. The data span the period 1985:07-2012:03.

Panel A: 1985:07-1992:12												
	cons	\hat{g}_3	\hat{h}_6	\hat{h}_7	\bar{R}^2		cons	\hat{g}_3	\hat{h}_4	\hat{h}_6	\hat{h}_7	\bar{R}^2
<i>All Countries</i>												
ψ^{USD}	0.07	-0.53	0.75	-0.50	0.04		-0.05	-0.48	-0.41	0.96	-0.69	0.04
NW	0.22	-1.49	2.15	-1.92	5.31		-0.12	-1.27	-0.87	2.15	-2.06	5.38
B	0.83	0.11	0.05	0.09	0.15		0.90	0.20	0.35	0.04	0.05	0.25
Δs^{USD}	0.07	-0.55	0.74	-0.48	0.04		-0.11	-0.50	-0.47	0.94	-0.68	0.05
NW	0.21	-1.46	2.10	-1.84	4.98		-0.25	-1.29	-1.01	2.12	-2.02	5.35
B	0.21	0.12	0.06	0.09	0.17		0.81	0.18	0.30	0.04	0.06	0.25
Panel B: 1992:12-2012:03												
<i>Developed Countries</i>												
ψ^{USD}	0.34	-0.16	0.31	-0.32	0.05		0.50	-0.22	0.25	0.34	-0.34	0.05
NW	3.10	-1.30	2.13	-2.32	15.47		3.58	-1.37	1.73	2.13	-2.28	14.69
B	0.01	0.37	0.02	0.03	0.00		0.01	0.29	0.12	0.03	0.04	0.01
Δs^{USD}	0.36	-0.22	0.29	-0.26	0.04		0.49	-0.21	0.23	0.34	-0.35	0.06
NW	3.29	-1.94	1.94	-1.97	11.25		3.45	-1.34	1.61	2.11	-2.34	15.24
B	0.00	0.25	0.04	0.06	0.01		0.00	0.32	0.15	0.04	0.03	0.00

Table A.4 In-sample analysis: Different Subsamples – Momentum

The table reports OLS estimates for the momentum strategy of different subsamples. The dependent variable is the currency excess return (ψ^{WML}) based on a carry trade strategy that goes long (short) a basket of currencies with highest (lowest) forward discounts, or the exchange rate component (Δs^{WML}) of the strategy. NW represents Newey and West (1987) heteroskedasticity and autocorrelation consistent *t-statistics*, constructed with the optimal number of lags chosen following Andrews (1991). B denotes the bootstrap *p-values* based on 10,000 bootstrap iterations. The data span the period 1985:07-2012:03.

Panel A: 1985:07-1992:12											
	<i>cons</i>	\hat{g}_1	\hat{h}_1	\hat{h}_4	\bar{R}^2		<i>cons</i>	\hat{g}_2	\hat{h}_7	\hat{h}_8	\bar{R}^2
<i>All Countries</i>											
ψ^{WML}	2.91	-2.70	-0.06	-0.64	0.04		-1.01	-1.63	-0.17	0.21	0.05
NW	2.61	-2.25	-0.13	-1.19	5.95		-2.12	-3.28	-0.88	0.61	6.17
B	0.01	0.01	0.92	0.29	0.11		0.08	0.03	0.41	0.53	0.10
Δs^{WML}	3.16	-2.44	-0.06	0.72	0.04		1.16	1.77	0.10	-0.21	0.06
NW	3.83	-2.81	-0.09	1.21	9.96		2.40	3.43	0.55	-0.66	7.61
B	0.00	0.03	0.93	0.22	0.02		0.03	0.01	0.64	0.52	0.05
Panel B: 1992:12-2012:03											
<i>All Countries</i>											
ψ^{WML}	0.44	-0.05	-0.25	0.26	0.01		0.23	-0.43	-0.19	0.32	0.04
NW	2.98	-0.22	-1.66	1.16	5.40		1.62	-2.40	-1.06	1.64	5.88
B	0.02	0.85	0.10	0.21	0.14		0.19	0.08	0.30	0.10	0.12
Δs^{WML}	0.38	0.44	0.12	-0.66	0.02		-0.22	0.45	0.20	-0.30	0.04
NW	1.67	1.52	0.88	-2.46	7.10		-1.53	2.52	1.16	-1.61	6.89
B	0.10	0.13	0.43	0.02	0.07		0.22	0.07	0.26	0.12	0.07

Table A.5 In-Sample Analysis: Longer Horizons

The table reports OLS estimates of long-horizon predictive regressions. In *Panel A* the dependent variable is the average log excess returns of different horizons (using forward contracts with maturities that are equal to the length of the horizon) obtained from Lustig et al. (2014). *Panel B* reports results for the cumulative payoffs of the corresponding dollar carry trade returns². NW represents Newey and West (1987) heteroskedasticity and autocorrelation consistent *t-statistics*, constructed with the optimal number of lags chosen following Andrews (1991), augmented by the length of the horizon. B denotes the bootstrap *p-values* based on 10,000 bootstrap iterations (under the null of no predictability) with number of lags equal to the length of the horizon plus one. The data span the period 1985:07-2010:06.

Panel A: Average log excess returns (Lustig et al., 2014)											
	<i>cons</i>	\hat{h}_1	\hat{h}_6	\hat{h}_7	\bar{R}^2		<i>cons</i>	\hat{h}_1	\hat{h}_6	\hat{h}_7	\bar{R}^2
<i>All Countries</i>										<i>Developed Countries</i>	
<i>1-month</i>	0.17	-0.36	0.42	-0.36	0.06		0.14	-0.43	0.47	-0.46	0.06
NW	1.18	-2.01	3.57	-2.89	21.26		0.82	-2.09	3.46	-3.52	22.97
B	0.75	0.96	0.00	0.54	0.00		0.76	0.97	0.00	0.52	0.00
<i>2-month</i>	0.16	-0.35	0.36	-0.32	0.08		0.13	-0.42	0.42	-0.40	0.09
NW	1.39	-2.02	4.21	-2.97	26.53		1.11	-2.23	4.43	-3.61	27.28
B	0.88	0.98	0.00	0.52	0.00		0.92	0.99	0.00	0.54	0.00
<i>3-month</i>	0.16	-0.32	0.39	-0.29	0.12		0.14	-0.39	0.45	-0.35	0.13
NW	1.41	-2.15	4.54	-2.14	30.41		1.21	-2.29	4.82	-2.67	29.36
B	0.97	0.96	0.00	0.54	0.00		0.97	0.98	0.00	0.56	0.00
<i>6-month</i>	0.17	-0.24	0.37	-0.16	0.15		0.15	-0.28	0.40	-0.18	0.15
NW	1.30	-1.91	3.69	-2.38	21.12		1.30	-1.77	3.97	-2.71	18.99
B	0.94	0.87	0.00	0.58	0.01		0.95	0.80	0.00	0.98	0.01
<i>12-month</i>	0.19	-0.13	0.30	-0.16	0.18		0.17	-0.13	0.33	-0.20	0.19
NW	1.01	-3.25	1.72	-2.30	19.58		0.91	-2.81	2.06	-2.60	19.12
B	0.99	0.79	0.00	0.59	0.01		0.98	0.74	0.00	0.96	0.01
Panel B: Dollar Carry Trades (Lustig et al., 2014)											
<i>All Countries</i>										<i>Developed Countries</i>	
<i>1-month</i>	0.23	-0.43	0.36	-0.41	0.06		0.47	-0.40	0.41	-0.41	0.05
NW	1.68	-2.32	3.39	-3.30	22.83		3.42	-2.09	3.47	-3.66	21.76
B	0.82	0.99	0.00	0.53	0.00		0.70	0.95	0.00	0.54	0.00
<i>2-month</i>	0.24	-0.42	0.34	-0.33	0.09		0.46	-0.40	0.34	-0.27	0.06
NW	2.16	-2.41	4.24	-3.46	30.58		4.10	-1.96	3.88	-2.64	17.56
B	0.93	0.97	0.00	0.54	0.00		0.87	0.98	0.01	0.52	0.00
<i>3-month</i>	0.22	-0.33	0.37	-0.28	0.11		0.37	-0.38	0.38	-0.23	0.09
NW	1.88	-1.97	4.17	-2.21	28.50		3.35	-2.57	4.53	-3.66	22.88
B	0.96	0.94	0.00	0.64	0.01		0.93	0.99	0.00	0.56	0.00
<i>6-month</i>	0.22	-0.24	0.35	-0.14	0.14		0.32	-0.30	0.35	-0.13	0.12
NW	1.81	-1.86	3.46	-2.57	19.69		2.69	-2.35	4.10	-2.98	16.75
B	0.96	0.89	0.00	0.96	0.00		0.94	0.92	0.00	0.95	0.01
<i>12-month</i>	0.22	-0.08	0.30	-0.16	0.17		0.35	-0.12	0.26	-0.14	0.14
NW	1.42	-2.65	1.87	-2.29	24.91		2.23	-3.23	2.30	-2.34	13.32
B	0.96	0.32	0.00	0.94	0.00		0.99	0.75	0.00	0.99	0.03

²The data is from Lustig et al. (2014).

Table A.6 In-Sample Analysis: Longer Horizons

The table reports OLS estimates of long-horizon predictive regressions. In *Panel A* the dependent variable is the cumulative payoff (ψ^{HML}) of a carry trade strategy over 3 to 36 months that goes long (short) a basket of currencies with highest (lowest) forward discounts. *Panel B* reports results for the cumulative returns of the momentum strategy for the corresponding horizons. NW represents Newey and West (1987) heteroskedasticity and autocorrelation consistent *t-statistics*, constructed with the optimal number of lags chosen following Andrews (1991), augmented by the length of the horizon. B denotes the bootstrap *p-values* based on 10,000 bootstrap iterations (under the null of no predictability) with number of lags equal to the length of the horizon plus one. The data span the period 1985:07-2012:03.

Panel A: Carry Trades							
	<i>cons</i>	\hat{g}_2	\hat{g}_3	\hat{h}_1	\hat{h}_5	\hat{h}_6	\hat{h}_7
<i>All Countries</i>							
<i>3-months</i>	1.06	1.22	-0.41	0.87	0.87	0.07	
NW	2.30	2.97	-1.22	1.85	1.85	13.46	
B	0.89	0.00	0.88	0.04	0.04	0.03	
<i>12-months</i>	4.29	2.04	-0.41	14.80	1.82	0.04	
NW	2.26	1.25	-1.22	2.39	1.87	10.99	
B	0.88	0.14	0.88	1.00	0.05	0.11	
<i>24-months</i>	4.29	2.04	-1.34	1.26	1.82	0.07	
NW	2.26	1.25	-1.07	0.43	1.87	4.63	
B	0.89	0.14	0.85	0.36	0.05	0.64	
<i>36-months</i>	14.80	6.05	-3.16	0.86	5.03	0.08	
NW	2.39	1.13	-1.65	0.19	1.99	9.19	
B	0.95	0.18	0.93	0.43	0.03	0.39	
Panel B: Momentum							
	<i>cons</i>		\hat{h}_1	\hat{h}_4		\bar{R}^2	
<i>All Countries</i>							
<i>3-months</i>	1.29		-0.49	0.29		0.01	
NW	3.42		-1.20	1.00		2.20	
B	0.58		0.87	0.20		0.39	
<i>12-months</i>	4.98		-2.23	1.06		0.06	
NW	3.73		-1.34	1.08		4.63	
B	1.00		0.90	0.15		0.19	
<i>24-months</i>	9.98		-2.53	2.88		0.08	
NW	3.98		-0.64	2.46		6.69	
B	1.00		0.70	0.03		0.17	
<i>36-months</i>	16.33		-0.11	-0.11		0.12	
NW	4.88		-0.02	-0.02		24.24	
B	1.00		0.51	0.51		0.00	

Table A.7 Out-of-Sample Analysis: Against the Mean

The table presents out-of sample R-squares (R_{oos}^2) as described in Campbell and Thompson (2008) ($R_{oos}^2 = 1 - \sum_{t=1}^{T-1} \frac{(\psi_{t+1}^i - \hat{\mu}_{t+1})^2}{(\psi_{t+1}^i - \mu_{t+1})^2}$), where $\hat{\mu}_{t+1}$ represents the one-step ahead conditional forecast from the model of interest and μ_{t+1} is the historical mean of the payoff. Thus, a positive R_{oos}^2 statistic means that the competing model outperforms the benchmark model because it has a lower mean square prediction error. *Panel A* reports results for currency excess returns and *Panel B* for exchange rate changes. The superscript *mean* represents the mean combined forecast and the superscript *weighted* the weighted counterpart. The in-sample period spans the first 271 observations (out of 321) that correspond to the period 1985.07-2007.12. *Panel C* shows results for exchange rate change when in-sample period spans the first 180 observations (out of 321) that correspond to the period 1985.07-2000.05.

Panel A: Currency Excess Returns							
	ψ^{HML}		ψ^{USD}		ψ^{WML}		
	R_{oos}^2	MSPEadj	R_{oos}^2	MSPEadj	R_{oos}^2	MSPEadj	
<i>All Countries</i>							
$C_1 = [\hat{g}_2]$	0.12	0.08					
$C'_1 = [\hat{g}_{1,2}]$					0.05	0.10	
$C'_2 = [\hat{h}_{3,6}]$					0.06	0.07	
$C_3 = [\hat{g}_{2,3} \hat{h}_{5,6}]$	0.17	0.05			0.07	0.05	
$C_{2,3}^{mean}$	0.16	0.06			0.08	0.06	
$C_{2,3}^{weighted}$	0.16	0.06			0.08	0.06	
$D_2 = [\hat{h}_{6,7}]$		0.06	0.02				0.05 0.02
$D_3 = [\hat{g}_3 \hat{h}_{6,7}]$		0.06	0.01				0.05 0.02
$D_{2,3}^{mean}$		0.06	0.01				0.05 0.01
$D_{2,3}^{weighted}$		0.06	0.01				0.06 0.01
$M_2 = [\hat{h}_{1,4}]$			0.00	0.14			
$M'_2 = [\hat{h}_{3,4,7,8}]$							0.06 0.07
$M_3 = [\hat{g}_3 h_4]$			0.00	0.22			
$M'_3 = [\hat{g}_2 h_8]$			0.00	0.22			0.05 0.14
$M_{2,3}^{mean}$			0.00	0.22			0.06 0.10
$M_{2,3}^{weighted}$			0.00	0.22			0.06 0.10

Table A.7 Out-of-sample analysis: Against the Mean (continued)

	Panel B: Exchange Rate Returns											
	ψ^{HML}		ψ^{USD}		ψ^{WML}		ψ^{HML}		ψ^{USD}		ψ^{WML}	
	R_{oos}^2	MSPEadj	R_{oos}^2	MSPEadj	R_{oos}^2	MSPEadj	R_{oos}^2	MSPEadj	R_{oos}^2	MSPEadj	R_{oos}^2	MSPEadj
<i>All Countries</i>										<i>Developed Countries</i>		
$C_1 = [\hat{g}_2]$	0.14	0.03					0.04	0.09				
$C'_1 = [\hat{g}_{1,2}]$												
$C_2 = [\hat{h}_{2,3,4,6}]$	0.03	0.17					0.06	0.08				
$C'_2 = [\hat{h}_{3,6}]$												
$C_3 = [\hat{g}_{2,3} \hat{h}_{5,6}]$	0.18	0.03					0.07	0.05				
$C'_3 = [\hat{g}_{2,3} \hat{h}_6]$							0.08	0.06				
$C_{1,3}^{mean}$	0.17	0.03					0.08	0.06				
$C_{1,3}^{weighted}$	0.17	0.03					0.08	0.06				
$D_2 = [\hat{h}_{6,7}]$			0.07	0.02					0.05	0.02		
$D_3 = [\hat{g}_3 \hat{h}_{6,7}]$			0.05	0.03					0.05	0.02		
$D_{2,3}^{mean}$			0.06	0.01					0.06	0.01		
$D_{2,3}^{weighted}$			0.06	0.01					0.06	0.01		
$M_1 = [\hat{g}_3]$					-0.00	0.28						
$M_2 = [\hat{h}_{1,4}]$					0.00	0.21						
$M_3 = [\hat{g}_3 \hat{h}_4]$					0.00	0.12						
$M'_1 = [\hat{g}_2]$									0.04	0.12		
$M'_2 = [\hat{h}_{3,4,7,8}]$									0.07	0.06		
$M'_3 = [\hat{g}_2 \hat{h}_8]$									0.06	0.12		
$M_{2,3}^{mean}$					0.00	0.21						
$M_{2,3}^{weighted}$					0.00	0.21						
$M_{2,3}^{mean}$									0.07	0.09		
$M_{2,3}^{weighted}$									0.07	0.09		

Table A.7 Out-of-sample analysis: Against the Mean (continued)

Panel C: Exchange Rate Returns (In-sample period: 1985.07-2000.05)										
	ψ^{HML}		ψ^{USD}		ψ^{WML}		ψ^{HML}		ψ^{USD}	
	R_{oos}^2	MSPEadj	R_{oos}^2	MSPEadj	R_{oos}^2	MSPEadj	R_{oos}^2	MSPEadj	R_{oos}^2	MSPEadj
<i>All Countries</i>					<i>Developed Countries</i>					
$C_1 = [\hat{g}_2]$	0.08	0.00					0.02	0.07		
$C_2 = [\hat{h}_{2,3,4,6}]$	0.01	0.08								
$C'_2 = [\hat{h}_{3,6}]$							0.03	0.08		
$C_3 = [\hat{g}_{2,3} \, h_{5,6}]$	0.09	0.01					0.03	0.04		
$C'_3 = [\hat{g}_{2,3} \, h_6]$							0.03	0.05		
$C_{1,3}^{mean}$	0.10	0.01					0.03	0.05		
$C_{1,3}^{weighted}$	0.10	0.01					0.03	0.05		
$D_2 = [\hat{h}_{6,7}]$			0.05	0.00					0.05	0.00
$D_3 = [\hat{g}_3 \, \hat{h}_{6,7}]$			0.05	0.01					0.05	0.00
$D_{2,3}^{mean}$			0.06	0.00					0.05	0.00
$D_{2,3}^{weighted}$			0.06	0.00					0.05	0.00
$M_1 = [\hat{g}_3]$					-0.00	0.28				
$M_2 = [\hat{h}_{1,4}]$					0.00	0.21				
$M_3 = [\hat{g}_3 \, \hat{h}_4]$					0.09	0.12				
$M'_1 = [\hat{g}_2]$									0.04	0.03
$M'_2 = [\hat{h}_{3,4,7,8}]$									0.04	0.04
$M'_3 = [\hat{g}_2 \, \hat{h}_8]$									0.04	0.04
$M_{2,3}^{mean}$					0.01	0.21				
$M_{2,3}^{weighted}$					0.01	0.21				
$M_{2,3}^{mean}$									0.05	0.03
$M_{2,3}^{weighted}$									0.05	0.03

Table A.8 In-Sample Analysis: Alternative Asset Classes

The table reports OLS estimates for value and momentum strategies of alternative asset classes. In *Panel A* the dependent variable is the long or short leg of a momentum strategy of equities (EQ), foreign exchange (FX), fixed income (FI) and commodities (CM). *Panel B* reports the corresponding results for the value strategy. NW represents Newey and West (1987) corrected for autocorrelation and heteroskedasticity *t-statistics* with the optimal number of lags following Andrews (1991) augmented by the length of the horizon. B denotes the bootstrap *p-values* based on 10,000 bootstrap iterations (under the null of no predictability) with number of lags equal to the length of the horizon plus one. The data is obtained from Asness et al. (2013) and span the period 1985:07-2012:03.

Panel A: Value portfolios																				
	<i>cons</i>	$\hat{g}_{1,t}$	$\hat{g}_{2,t}$	$\hat{g}_{3,t}$	$\hat{g}_{3,t-1}$	$\hat{h}_{4,t}$	$\hat{h}_{8,t}$	\bar{R}^2		<i>cons</i>	$\hat{g}_{1,t}$	\hat{g}_2	$\hat{g}_{3,t-2}$	$\hat{g}_{3,t-2}$	$\hat{h}_{3,t}$	$\hat{h}_{4,t}$	$\hat{h}_{6,t}$	$\hat{h}_{7,t}$	\bar{R}^2	
<i>EQ</i>																				
<i>Long</i>	0.60	0.77	0.55	0.81				0.06		0.40					-0.28	0.13	0.39	-0.28	0.05	
NW	2.24	2.21	2.28	3.32				11.84		3.45					-2.45	1.06	3.72	-2.06	18.78	
B	0.02	0.03	0.07	0.00				0.01		0.00					0.05	0.39	0.00	0.03	0.00	
<i>Short</i>	0.27	0.30	0.60	0.74				0.03		0.12					-0.56	0.33	0.49	-0.38	0.07	
NW	0.96	0.93	2.26	3.71				11.70		0.77					-3.54	1.64	3.06	-3.15	23.16	
B	0.32	0.34	0.02	0.00				0.01		0.43					0.00	0.12	0.00	0.01	0.00	
<i>FI</i>																				
<i>Long</i>	0.33	-0.15	-0.21		-0.14	0.17	-0.14	0.07		0.49	0.30	0.55	0.44				0.09	0.23	0.02	
NW	4.20	-2.01	-2.84		-2.04	1.87	-2.14	25.29		2.11	1.32	2.55	1.93				0.36	1.03	7.06	
B	0.00	0.07	0.01		0.09	0.04	0.12	0.00		0.04	0.29	0.04	0.08				0.73	0.36	0.22	
<i>Short</i>	0.22	-0.23	-0.38		-0.18			0.07		0.37	0.58	1.46	0.50				-0.72	0.53	0.12	
NW	1.93	-1.80	-4.14		-1.75			34.90		1.41	1.79	4.79	1.95				-3.03	1.94	28.28	
B	0.02	0.03	0.00		0.09			0.00		0.20	0.13	0.00	0.09				0.02	0.06	0.00	
Panel B: Momentum portfolios																				
<i>EQ</i>																				
<i>Long</i>	0.81	0.65	0.46	0.82				0.05		0.36					-0.43		0.41	-0.36	0.05	
NW	3.01	2.00	1.93	3.73				11.34		2.85					-2.92		-0.64	2.87	-2.46	17.95
B	0.00	0.04	0.10	0.00				0.01		0.02					0.01		0.54	0.01	0.03	0.00
<i>Short</i>	0.18	0.49	0.80					0.03		0.11					-0.31		-0.32	0.38	0.04	
NW	0.65		1.41	3.05				8.38		0.79					-2.00		-2.72	3.09	17.59	
B	0.50		0.13	0.01				0.02		0.41					0.08		0.05	0.00	0.00	
<i>FI</i>																				
<i>Long</i>	0.29	-0.20	-0.23		-0.16	0.19		0.05		0.97		0.16			1.07	-0.69	0.30	0.05		
NW	2.69	-1.70	-2.09		-1.99	1.49		16.07		3.55		0.66			2.94	-2.44	0.97	10.19		
B	0.00	0.05	0.03		0.08	0.06		0.00		0.00		0.59			0.01	0.06	0.29	0.04		
<i>Short</i>	0.34	-0.21	-0.26		-0.16	-0.16		0.09		0.06		0.64			0.53	-0.56	0.36	0.05		
NW	3.67	-2.20	-3.24		-2.37	-2.37		36.07		0.28		2.51			2.10	-3.14	1.66	13.30		
B	0.00	0.02	0.00		0.06	0.01		0.00		0.82		0.02			0.12	0.04	0.19	0.01		

Table B.1 U.S. Data

This table provides a detailed description of the U.S. monthly (start of month) data as well as the transformations applied to the series based on stationarity tests, detailed in Stock and Watson (2002a, b):
 lv = no transformation; Δ lv = first difference; ln = logarithm; Δ ln = first difference of logarithm. The data is available from DataStream and span the period 1985:7-2012:03.

Series Number	Mnemonics	Tranf	Description
Real Output			
1	870010061	Δ ln	US PROD OF TOTAL INDUSTRY VOLA
2	870010074	Δ ln	US PROD IN TOTAL MFG VOLA
3	870010065	Δ ln	US PROD OF TOTAL MFC CONSUMER GOODS VOLA
4	870010070	Δ ln	US PROD OF TOTAL MFC INTERMEDIATE GOODS VOLA
5	870010058	Δ ln	US PROD OF DWELLINGS CURN
6	60624012	ln	US PERSONAL INCOME (MONTHLY SERIES) (AR) CURA
7	60611444	Δ ln	US PERSONAL INCOME LESS TRANSFER PAYMENTS (BCI 51) CONA
Employment			
8	870012315	Δ ln	US EMPLOYEES: TOTAL (BUSINESS SURVEY)(DISC.) VOLA
9	870004508	Δ ln	US CIVILIAN EMPLOYMENT: ALL PERSONS(DISC.) VOLA
10	870011929	Δ ln	US CIVILIAN LABOUR FORCE: ALL PERSONS(DISC.) VOLA
11	870004623	Δ ln	US UNEMPLOYMENT RATE: SURVEY-BASED (ALL PERSONS)(DISC.) SADJ
12	870004581	Δ lv	US WEEKLY HOURS WORKED: MFG VOLA
13	870004585	Δ lv	US WEEKLY OVERTIME HOURS: MFG VOLA
14	60200425	Δ ln	US UNEMPLOYMENT RATE SADJ
15	64554480	Δ ln	US UNEMPLOYED (16 YRS & OVER) VOLA
16	60200205	Δ lv	US TOTAL CIVILIAN EMPLOYMENT VOLA
Consumption			
17	64110309	Δ ln	US CHAIN-TYPE PRICE INDEX FOR PERSONAL CONSMPTN.EXPENDITURE SADJ
18	60624032	Δ ln	US PERSONAL CONSUMPTION EXPENDITURES (AR) CURA
19	62244012	Δ ln	US PERSONAL CONSUMPTION EXPENDITURES - DURABLES (AR) CURA
20	64110362	Δ ln	US PERSONAL CONSUMPTION EXPENDITURES - LESS FOOD & ENERGY CURA
21	62244032	Δ ln	US PERSONAL CONSUMPTION EXPENDITURES - SERVICES (AR) CURA
22	62244022	Δ ln	US PERSONAL CONSUMPTION EXPENDITURES - NONDURABLES (AR) CURA

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Table B.1 U.S. Data (continued)

Series Number	Mnemonics	Tranf	Description
Housing Start			
23	64101515	ln	US HOUSING STARTED VOLN
24	64101504	ln	US HOUSING STARTED - MIDWEST (AR) VOLA
25	64101503	ln	US HOUSING STARTED - NORTHEAST (AR) VOLA
26	64101505	ln	US HOUSING STARTED - SOUTH (AR) VOLA
27	64101506	ln	US HOUSING STARTED - WEST (AR) VOLA
28	64101525	ln	US HOUSING AUTHORIZED VOLN
29	61110105	ln	US NEW PRIVATE HOUSING UNITS STARTED (AR) VOLA
30	61110405	ln	US NEW PRIVATE HOUSING UNITS AUTHORIZED BY BLDG.PERMIT (AR) VOLA
31	61105002	ln	US CONSTRUCTION EXPENDITURES - TOTAL (AR) CURA
32	64121950	ln	US EXISTING HOME SALES: SINGLE-FAMILY & CONDO (AR) VOLA
33	64101560	ln	US HOUSING COMPLETED - 1 UNIT VOLN
34	64101544	ln	US HOUSING COMPLETED - 1 UNIT (AR) VOLA
35	64110960	ln	US HOUSING COMPLETED - 2 TO 4 UNITS VOLN
36	64101564	ln	US HOUSING COMPLETED - 5 UNITS OR MORE VOLN
37	64101546	ln	US HOUSING COMPLETED - 5 UNITS OR MORE (AR) VOLA
38	64101566	ln	US HOUSING COMPLETED - MIDWEST VOLN
39	64101548	ln	US HOUSING COMPLETED - MIDWEST (AR) VOLA
40	64101565	ln	US HOUSING COMPLETED - NORTHEAST VOLN
41	64101547	ln	US HOUSING COMPLETED - NORTHEAST (AR) VOLA
42	64101567	ln	US HOUSING COMPLETED - SOUTH VOLN
43	64101549	ln	US HOUSING COMPLETED - SOUTH (AR) VOLA
44	64101568	ln	US HOUSING COMPLETED - WEST VOLN
45	64101550	ln	US HOUSING COMPLETED - WEST (AR) VOLA
46	64101516	ln	US HOUSING STARTED - 1 UNIT VOLN
47	64112140	ln	US HOUSING STARTED - 2 TO 4 UNITS VOLN
48	64101520	ln	US HOUSING STARTED - 5 UNITS OR MORE VOLN
49	64101502	ln	US HOUSING STARTED - 5 UNITS OR MORE (AR) VOLA
50	64101522	ln	US HOUSING STARTED - MIDWEST VOLN
51	64101521	ln	US HOUSING STARTED - NORTHEAST VOLN
52	64101523	ln	US HOUSING STARTED - SOUTH VOLN
53	64101524	ln	US HOUSING STARTED - WEST VOLN
54	64101552	ln	US HOUSING UNDER CONSTRUCTION - 1 UNIT (AR) VOLA
55	64101570	ln	US HOUSING UNDER CONSTRUCTION - 1 UNIT (EP) VOLN
56	64110944	ln	US HOUSING UNDER CONSTRUCTION - 2 TO 4 UNITS (EP) VOLN
57	64101554	ln	US HOUSING UNDER CONSTRUCTION - 5 UNITS OR MORE (AR) VOLA
58	64101574	ln	US HOUSING UNDER CONSTRUCTION - 5 UNITS OR MORE (EP) VOLN
59	64101556	ln	US HOUSING UNDER CONSTRUCTION - MIDWEST (AR) VOLA
60	64101576	ln	US HOUSING UNDER CONSTRUCTION - MIDWEST (EP) VOLN
61	64101555	ln	US HOUSING UNDER CONSTRUCTION - NORTHEAST (AR) VOLA
62	64101575	ln	US HOUSING UNDER CONSTRUCTION - NORTHEAST (EP) VOLN
63	64101557	ln	US HOUSING UNDER CONSTRUCTION - SOUTH (AR) VOLA
64	64101577	ln	US HOUSING UNDER CONSTRUCTION - SOUTH (EP) VOLN
65	64101558	ln	US HOUSING UNDER CONSTRUCTION - WEST (AR) VOLA
66	64101578	ln	US HOUSING UNDER CONSTRUCTION - WEST (EP) VOLN
67	64101569	ln	US HOUSING UNDER CONSTRUCTION AT END OF PERIOD (EP) VOLN
68	68233445	ln	US NEW PRIVATE HOUSING UNITS STARTED - 1 UNIT(AR) VOLA
69	61105225	ln	US NEW PRIVATELY OWNED HOUSING UNITS COMPLETED (AR) VOLA
70	61105235	ln	US NEW PRIVATELY OWNED HOUSING UNITS UNDER CONSTRUCTION (AR) VOLA

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Series Number	Mnemonics	Tranf	Description
Orders			
71	60201252	In	US ISM MANUFACTURERS SURVEY: NEW ORDERS INDEX SADJ
72	61518004	ΔIn	US NEW ORDERS OF CONSUMER GOODS & MATERIALS (BCI 8) CONA
Stock Price			
	DJIN		
73	DUS(PI)	ΔIn	DOW JONES INDUSTRIALS - PRICE INDEX
74	870004617	ΔIn	US SHARE PRICES: NYSE COMPOSITE NADJ
75	61401000	ΔIn	US DOW JONES INDUSTRIALS SHARE PRICE INDEX (EP) NADJ
76	DJUTILS(PI)	ΔIn	DOW JONES UTILITIES - PRICE INDEX
Exchange Rates			
77	640023985	ΔIn	SW SWISS FRANCS TO USD REAL INDEX VOLN
78	77000129	ΔIn	CN CANADIAN DOLLARS TO 1 U.S. DOLLAR (MONTHLY AVERAGE)
79	741120006	ΔIn	UK NATIONAL CURRENCY UNIT TO US \$ - MARKET RATE (EP)
80	741580006	ΔIn	JP NATIONAL CURRENCY UNIT TO US \$ - MARKET RATE (EP)
Interest Rates			
81	870004511	lv	US FEDERAL FUNDS RATE NADJ
82	870004512	lv	US PRIME RATE NADJ
83	870009005	lv	US YIELD 10-YEAR FED GVT SEC'S (COMPOSITE) NADJ
84	870009003	lv	US RATE 3-MONTH CDS NADJ
85	870009004	Δlv	US RATE 3-MONTH EURO-DOLLAR DEPOSITS NADJ
86	870009006	lv	US YIELD 10-YEAR FED GVT SEC'S NADJ
87	741110441	lv	US DISCOUNT RATE (EP)
88	741110450	lv	US TREASURY BILL RATE
89	741110465	lv	US 1-MONTH US \$ DEPOSITS, LONDON OFFER
90	741110468	Δlv	US 3-MONTH US \$ DEPOSITS, LONDON OFFER
91	741110471	lv	US 6-MONTH US \$ DEPOSITS, LONDON OFFER CURN
92	741110480	lv	US GOVT BOND YIELD - LONGTERM
93	741110483	lv	US GOVT BOND YIELD - MEDIUM TERM
Money and Credit Quantity Aggregates			
94	870004548	ΔIn	US MONETARY AGGREGATE M1 CURA
95	870004544	In	US MONETARY AGGREGATE M2 CURA
96	870004546	ΔIn	US MONETARY AGGREGATE M3 - PROXY CURA
97	741110057	ΔIn	US INTERNATIONAL RESERVES CURN
98	64125508	ΔIn	US COMMERCIAL BANK ASSETS - LOANS & LEASES IN BANK CREDIT CURA
99	64104036	ΔIn	US COMMERCIAL BANK ASSETS - COMMERCIAL & INDUSTRIAL LOANS CURA
100	440337331	lv	US COML BANK ASSETS-COMMERCIAL & INDL LOANS(BREAK ADJ,SAAR) SADJ
101	741110066	ΔIn	US FUND POSITION: SDR'S CURN

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Table B.1 U.S. Data (continued)

Series Number	Mnemonics	Tranf	Description
Price Indices			
102	870004479	Δln	US CPI ALL ITEMS SADJ
103	870004480	Δln	US CPI ALL ITEMS WAGE EARNERS NADJ
104	870006150	Δln	US CPI FOOD EXCL. RESTAURANTS NADJ
105	870006151	Δln	US CPI ENERGY NADJ
106	870006152	Δln	US CPI ALL ITEMS NON-FOOD NON-ENERGY NADJ
107	870004477	Δln	US CPI ALL ITEMS NEW YORK NADJ
108	64110656	Δln	US PPI - FINISHED GOODS SADJ
109	60823485	Δln	US PPI - FINISHED GOODS LESS FOODS & ENERGY (CORE) SADJ
110	64582033	Δln	US PPI - CONSUMER NONDURABLE GOODS LESS FOOD SADJ
111	64636479	Δln	US PPI - OTHER HOUSEHOLD DURABLE GOODS NADJ
112	64636770	Δln	US PPI - SPORTING & ATHLETIC GOODS NADJ
113	64636762	Δln	US PPI - TOYS, SPORTING GOODS, SMALL ARMS, ETC. NADJ
114	60823515	Δln	US PPI - CONSUMER NONDURABLE GOODS LESS FOOD & ENERGY SADJ
115	60823535	Δln	US PPI - INTERMEDIATE MATERIALS LESS ENERGY SADJ
116	64583023	Δln	US PPI - INTERMEDIATE MATERIALS LESS ENERGY NADJ
117	64581996	Δln	US PPI - CRUDE NONFOOD MATERIALS EXCEPT FUEL SADJ
118	64633584	Δln	US PPI-PORK PRODS,FRESH,FROZEN,OR PROCESSED, EXCEPT SAUSAGE NADJ
119	64582021	Δln	US PPI - MANUFACTURED ANIMAL FEEDS SADJ
120	870009105	Δln	US HOURLY EARN: MFG SADJ
121	870004515	Δln	US HOURLY EARN: MFG NADJ
122	870010200	Δln	US HOURLY EARN: PRIVATE SECTOR SADJ
123	870004629	Δln	US ITS IMPORTS C.I.F. TOTAL CURA
124	870004626	Δln	US ITS EXPORTS F.A.S. TOTAL CURA
125	870004632	Δlv	US ITS NET TRADE (F.A.S. - C.I.F.) CURA
126	870006320	lv	US MFG - CONFIDENCE INDICATOR SADJ
127	61070005	lv	US CAPACITY UTILIZATION RATE - ALL INDUSTRY SADJ

Table B.2 Global Data

This table provides a detailed description of the Global monthly (start of month) data as well as the transformations applied to the series based on stationarity tests, detailed in Stock and Watson (2002a, b): lv = no transformation; Δlv = first difference; ln = logarithm; Δln = first difference of logarithm. The data is available from DataStream and span the period 1985:7-2012:03.

Series Number	Mnemonics	Tranf	Description
Real Output			
1	CN2PTOTCD	Δln	CN GDP - INDUSTRIAL PRODUCTION CONN
2	JPPRODVTE	Δlv	JP LABOR PRODUCTIVITY INDEX - ALL INDUSTRIES SADJ
3	AUSTEELPP	Δln	AU AUSTRALIA - STEEL PRODUCTION VOLN
4	UKIPTOT.G	Δln	UK INDEX OF PRODUCTION - ALL PRODUCTION INDUSTRIES VOLA
5	SDIPTOT5G	Δln	SD INDUSTRIAL PRODUCTION - MINING & MANUFACTURING (CAL ADJ) VOLA
6	BDIP0093G	Δln	BD INDUSTRIAL PRODUCTION: MANUFACTURING VOLA
Employment			
7	DKUNPTOTP	Δln	DK UNEMPLOYMENT NET (METHODOLOGY BREAK APRIL 2000) VOLA
8	CNUN%TOTQ	Δln	CN UNEMPLOYMENT RATE - CANADA (15 YRS & OVER) NADJ
9	JPUN%TOTQ	Δlv	JP UNEMPLOYMENT RATE (METHO BREAK MAR 2011) SADJ
10	AUUN%TOTQ	Δlv	AU UNEMPLOYMENT RATE (LABOUR FORCE SURVEY ESTIMATE) SADJ
11	NZMLM005P	Δln	NZ REGISTERED UNEMPLOYMENT: LEVEL (ALL PERSONS) VOLN
12	UKUN%TOTQ	Δlv	UK UNEMPLOYMENT RATE SADJ
13	SWUN%TOTR	Δlv	SW UNEMPLOYMENT RATE NADJ
14	OEUN%TOTR	ln	OE UNEMPLOYMENT RATE % NADJ
15	NWUN%TOTQ	Δlv	NW UNEMPLOYMENT RATE (% OF LFS) SADJ
Consumption			
16	NWPERCGDG	Δln	NW PRIVATE CONSUMPTION - GOODS VOLA
17	BCPIEXC	Δln	BOC. WEEKLY EXCLUDING ENERGY - PRICE INDEX
18	AUIMPCSGB	ln	AU IMPORTS FOB - CONSUMPTION GOODS CURA
19	JPCCEPCSE	Δlv	JP ELECTRIC POWER CONSUMPTION - LARGE CORPORATIONS SADJ
20	CNPPOCOMP	ln	CN PETROLEUM PRODUCTS: ALL PRODUCTS - OWN CONSUMPTION VOLN
21	AUIMPCGDA	ln	AU IMPORTS FOB - CONSUMPTION GOODS CURN
22	UKHYELECG	Δln	UK CONSUMPTION OF HYDRO ELECTRICITY VOLA
23	SDECTOTLP	Δln	SD CONSUMPTION OF ELECTRICITY VOLN
24	NWPERCGDG	Δln	NW PRIVATE CONSUMPTION - GOODS VOLA
25	EUCNMCOIP	Δln	EU CONSUMPTION - CRUDE OIL VOLN
26	DKESEIWBP	Δlv	DK ENERGY - CONSUMPTION, NATURAL GAS VOLN
Stock Price			
27	JPSHRPRCF	Δln	JP TOKYO STOCK EXCHANGE - TOPIX NADJ
28	CNSHRPRCF	Δln	CN TORONTO STOCK EXCHANGE COMPOSITE SHARE PRICE INDEX NADJ
29	TOTXTER	Δlv	EU-DS DS-MARKET EX TMT - PRICE INDEX
30	HLTHCDK	Δln	DK-DS HEALTH CARE - PRICE INDEX
31	TOTMKAU	Δlv	AU-DS MARKET - PRICE INDEX
32	FINANUK	Δln	UK-DS FINANCIALS - SHARE HOLDERS EQUIT
33	MSSWDNL	Δlv	MSCI SWEDEN – PRICE INDEX
34	MSSWITL	Δlv	MSCI SWITZERLAND – PRICE INDEX

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Table B.2 Global Data (continued)

Series Number	Mnemonics	Tranf	Description
Price Indices			
35	CNCONPRCF	Δln	CN CPI NADJ
36	JPCONPRCF	Δlv	JP CPI: NATIONAL MEASURE NADJ
37	AUCPANNL	Δlv	AU INFLATION RATE (DS CALCULATED QUARTERLY) NADJ
38	NZCPANNL	Δlv	NZ INFLATION RATE NADJ
39	UKOCP009R	ln	UK CPI ALL ITEMS NADJ
40	SWCONPRCF	Δlv	SW CPI NADJ
41	SDCONPRCF	Δln	SD CPI NADJ
42	NWCONPRCF	Δlv	NW CPI NADJ
43	EUOCP009F	Δln	EU CPI ALL ITEMS NADJ
44	DKCONPRCF	ln	DK CPI NADJ
45	CNMPIFG1F	Δln	CN TOTAL PPI FINISHED GOODS NADJ
46	JPOPIFG2F	Δln	JP DOMESTIC PPI FINISHED GOODS NADJ
47	UKPROPRCF	Δln	UK PPI - OUTPUT OF MANUFACTURED PRODUCTS (HOME SALES) NADJ
48	SWPROPRCE	Δlv	SW PPI SADJ
49	NWPROPRCF	Δln	NW PPI NADJ
50	EUOPIMP2F	Δln	EU DOMESTIC PPI MFG NADJ
51	DKESPPINF	Δln	DK PPI: NON-DURABLE CONSUMER GOODS NADJ
Interest Rates			
52	ECCAD1M	Δ ² lv	CANADA EURO-\$ 1 MTH (FT/ICAP/TR) - MIDDLE RATE
53	ECJAP1M	Δ ² lv	JAPAN EURO-YEN 1 MTH (FT/ICAP/TR) - MIDDLE RATE
54	ECUKP1M	Δlv	UK EURO-1M (FT/ICAP/TR) - MIDDLE RATE
55	ECWGM1M	Δlv	GERMANY EU-MARK 1M (FT/ICAP/TR) - MIDDLE RATE
56	ECSWF1M	Δlv	SWTZRLAND EU-FRC-1M (FT/ICAP/TR) - MIDDLE RATE
57	ECDKN1M	Δlv	DENMARK EURO-KRONE 1M (FT/ICAP/TR) - MIDDLE RATE
58	ECUSD1M	Δlv	US EURO-\$ 1 MTH (FT/ICAP/TR) - MIDDLE RATE
59	ECCAD3M	Δ ² lv	CANADA EURO-\$ 3 MTH (FT/ICAP/TR) - MIDDLE RATE
60	ECJAP3M	Δ ² lv	JAPAN EURO-YEN 3 MTH (FT/ICAP/TR) - MIDDLE RATE
61	ECWGM3M	Δlv	GERMANY EU-MARK 3M (FT/ICAP/TR) - MIDDLE RATE
62	ECSWF3M	Δlv	SWTZRLAND EU-FRC-3M (FT/ICAP/TR) - MIDDLE RATE
63	ECDKN3M	Δlv	DENMARK EURO-KRONE 3M (FT/ICAP/TR) - MIDDLE RATE
64	ECUSD3M	Δ ² lv	US EURO-\$ 3 MTH (FT/ICAP/TR) - MIDDLE RATE
International Trade			
65	CNVISBOPB	lv	CN VISIBLE TRADE BALANCE (BALANCE OF PAYMENTS BASIS) CURA
66	JPVISGDSA	lv	JP VISIBLE TRADE BALANCE CURN
67	AUBALGOSA	lv	AU BALANCE OF TRADE IN GOODS & SERVICES (BOP BASIS) CURN
68	NZVISGDSA	lv	NZ VISIBLE TRADE BALANCE CURN
69	UKVISBOPB	Δlv	UK VISIBLE TRADE BALANCE - BALANCE OF PAYMENTS BASIS CURA
70	SWTA2891E	lv	SW TRADE BALANCE TOTAL 1 CURA
71	SDVISGDSA	lv	SD VISIBLE TRADE BALANCE CURN
72	NWVISGDSA	lv	NW VISIBLE TRADE BALANCE CURN
73	BDVISGDSB	Δlv	BD VISIBLE TRADE BALANCE CURA
74	DKVISGDSA	lv	DK VISIBLE TRADE BALANCE CURN
75	USVISGDSB	Δlv	US VISIBLE TRADE BALANCE F.A.S.-F.A.S. CURA

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Table B.2 Global Data (continued)

Series Number	Mnemonics	Tranf	Description
Reserves			
76	870008751	Δ ² lv	DK SDR RESERVE ASSETS CURN
77	498012588	Δ ² lv	JP FOREIGN RESERVES - FOREIGN CURRENCY CURN
78	360790010	Δ ² lv	SW OFFICIAL RESERVES MINUS GOLD (US\$) CURN
97	60700010	Δln	US FOREIGN RESERVE ASSETS CURN
80	77001675	Δ ² lv	CN OFFICIAL INTERNATIONAL RESERVES: CONVERTIBLE NON-U.S.\$ CURRENCY
81	100700010	Δ ² lv	AU OFFICIAL RESERVE ASSETS CURN
82	109998872	Δln	AU AUSTRALIAN \$ EFFECTIVE EXCHANGE RATE INDEX
83	USNLTSECA	lv	US FOREIGN NET LONG TERM FLOWS IN SECURITIES CURN
84	116600110	Δln	NZ PRIVATE SECTOR CREDIT CURN
85	116600740	Δln	NZ TOTAL OFFICIAL RESERVES CURN
86	870008981	Δln	NW RESERVE ASSETS CURN
87	SDRESVARA	Δln	SD BANK OF SWEDEN: ASSETS - GOLD & FOREIGN EXCHANGE RESERVE CURN
G7 Countries			
88	G7MPI009R	Δln	G7 DOMESTIC PPI MFG NADJ
89	G7MPI009R	Δlv	G7 ITS EXPORTS F.O.B. TOTAL SADJ
90	G7MXT008Q	Δlv	G7 ITS IMPORTS C.I.F. TOTAL SADJ
91	505676793	Δlv	G7 NET TRADE CURA
92	502621288	lv	G7 PRODUCTION - TOTAL INDUSTRY EXCL. CONSTRUCTION SADJ
93	503351909	Δln	G7 CPI ALL ITEMS NON FOOD NON ENERGY NADJ
94	503547075	Δlv	G7 CPI FOOD NADJ
95	504352258	lv	G7 HOURLY EARN: MFG SADJ
96	502120123	lv	G7 TOTAL RETAIL TRADE (VOLUME) SADJ
97	MSCIG7\$	Δln	G7 MSCI (US\$) – PRICE INDEX

Table C.1 Optimal Subset of Factors

This table displays the optimal subset of factors when taking into account all the possible combinations of domestic, global and all factors. The decision is made based on the *BIC* criterion. Then we report *BIC* and *AIC* criteria for the successful sets of factors. We choose the factors with the lowest *AIC* and *BIC*. In case of inconsistency between the two information criteria, we employ the log likelihood function (*LL*) as well as the adjusted R-squared as decision tools. The data span the period 1985:07-2012:03.

Panel A: Carry Trades									
	<i>AIC</i>	<i>BIC</i>	<i>LL</i>	\bar{R}^2		<i>AIC</i>	<i>BIC</i>	<i>LL</i>	\bar{R}^2
<i>All Countries</i>					<i>Developed Countries</i>				
<i>Only Global</i>					<i>Only Global</i>				
$G_1=[\hat{g}_2]$	1.92	1.94	761.82	0.05	$G_1=[\hat{g}_2]$	2.19	2.22	805.67	0.04
$G_2=[\hat{g}_{2,3}]$	1.93	1.96	761.67	0.05	$G_2=[\hat{g}_{1,2}]$	2.19	2.23	804.15	0.04
$G_3=[\hat{g}_{1,2,3}]$	1.93	1.98	761.65	0.03	$G_3=[\hat{g}_{1,2,3}]$	2.19	2.24	803.62	0.04
<i>Only Domestic</i>					<i>Only Domestic</i>				
$H_1=[\hat{h}_3]$	1.95	1.97	766.11	0.01	$H_1=[\hat{h}_3]$	2.20	2.22	806.65	0.02
$H_2=[\hat{h}_{3,4}]$	1.94	1.98	764.15	0.02	$H_2=[\hat{h}_{3,6}]$	2.19	2.23	804.74	0.03
$H_3=[\hat{h}_{2,3,4}]$	1.94	1.99	762.85	0.03	$H_3=[\hat{h}_{3,4,6}]$	2.20	2.24	803.89	0.03
$H_4=[\hat{h}_{2,3,4,6}]$	1.94	2.00	761.74	0.03	$H_4=[\hat{h}_{3,4,5,6}]$	2.20	2.26	803.46	0.03
$H_5=[\hat{h}_{1,2,3,4,6}]$	1.94	2.01	761.44	0.03	$H_5=[\hat{h}_{3,4,5,6,7}]$	2.20	2.27	803.09	0.03
$H_6=[\hat{h}_{1,2,3,4,5,6}]$	1.95	2.03	761.20	0.03	$H_6=[\hat{h}_{3,4,5,6,7,9}]$	2.21	2.29	802.87	0.03
$H_7=[\hat{h}_{1,2,3,4,5,6,9}]$	1.95	2.05	761.19	0.02	$H_7=[\hat{h}_{3,4,5,6,7,8,9}]$	2.21	2.31	802.74	0.03
$H_8=[\hat{h}_{1,2,3,4,5,6,7,9}]$	1.96	2.07	761.19	0.02	$H_8=[\hat{h}_{2,3,4,5,6,7,8,9}]$	2.22	2.32	802.73	0.02
$H_9=[\hat{h}_{1,2,3,4,5,6,7,8,9}]$	1.97	2.08	761.21	0.02	$H_9=[\hat{h}_{1,2,3,4,5,6,7,8,9}]$	2.23	2.34	802.72	0.02
<i>Domestic & Global</i>					<i>Domestic & Global</i>				
$HG_1=[\hat{h}_3]$	1.95	1.97	766.11	0.01	$HG_1=[\hat{h}_3]$	2.20	2.22	806.65	0.02
$HG_2=[\hat{h}_6 \hat{g}_2]$	1.92	1.95	759.91	0.05	$HG_2=[\hat{h}_6 \hat{g}_2]$	2.18	2.22	802.92	0.04
$HG_3=[\hat{h}_6 \hat{g}_{2,3}]$	1.92	1.96	758.99	0.06	$HG_3=[\hat{h}_6 \hat{g}_{1,2}]$	2.18	2.23	801.54	0.05
$HG_4=[\hat{h}_{5,6} \hat{g}_{2,3}]$	1.91	1.97	757.85	0.06	$HG_4=[\hat{h}_{2,5,6} \hat{g}_2]$	2.18	2.24	800.77	0.05
$HG_5=[\hat{h}_{4,5,6} \hat{g}_{2,3}]$	1.92	1.99	757.35	0.06	$HG_5=[\hat{h}_{2,5,6,7} \hat{g}_2]$	2.18	2.25	800.11	0.05
$HG_6=[\hat{h}_{4,5,6,8} \hat{g}_{2,3}]$	1.92	2.00	757.03	0.06	$HG_6=[\hat{h}_{1,2,5,6,7} \hat{g}_2]$	2.19	2.27	800.06	0.05
$HG_7=[\hat{h}_{3,4,5,6,8} \hat{g}_{2,3}]$	1.93	2.02	756.78	0.06	$HG_7=[\hat{h}_{1,2,5,6,7} \hat{g}_{2,3}]$	2.20	2.29	800.03	0.04
$HG_8=[\hat{h}_{3,4,5,6,8,9} \hat{g}_{2,3}]$	1.93	2.04	756.70	0.06	$HG_8=[\hat{h}_{1,2,5,6,7,9} \hat{g}_{2,3}]$	2.20	2.31	799.97	0.04
$HG_9=[\hat{h}_{3,4,5,6,7,8,9} \hat{g}_{2,3}]$	1.94	2.06	756.67	0.06	$HG_9=[\hat{h}_{1,2,5,6,7,9} \hat{g}_{1,2,3}]$	2.21	2.33	799.94	0.04
$HG_{10}=[\hat{h}_{2,3,4,5,6,7,8,9} \hat{g}_{2,3}]$	1.94	2.07	756.64	0.04	$HG_{10}=[\hat{h}_{1,2,4,5,6,7,9} \hat{g}_{1,2,3}]$	2.21	2.34	799.91	0.03
$HG_{11}=[\hat{h}_{1,2,3,4,5,6,7,8,9} \hat{g}_{2,3}]$	1.95	2.09	756.64	0.04	$HG_{11}=[\hat{h}_{1,2,3,4,5,6,7,9} \hat{g}_{1,2,3}]$	2.22	2.36	799.91	0.03
$HG_{12}=[\hat{h}_{1,2,3,4,5,6,7,8,9} \hat{g}_{1,2,3}]$	1.96	2.11	756.64	0.04	$HG_{12}=[\hat{h}_{1,2,3,4,5,6,7,8,9} \hat{g}_{1,2,3}]$	2.23	2.38	799.93	0.03

Table C.1 Optimal Subset of Factors (continued)

Panel B: Dollar Carry Trades									
	AIC	BIC	LL	\bar{R}^2		AIC	BIC	LL	\bar{R}^2
<i>All Countries</i>					<i>Developed Countries</i>				
<i>Only Global</i>					<i>Only Global</i>				
$G_1=[\hat{g}_3]$	1.46	1.49	688.32	0.01	$G_1=[\hat{g}_3]$	1.79	1.82	741.45	0.01
$G_2=[\hat{g}_{2,3}]$	1.47	1.50	688.01	0.01	$G_2=[\hat{g}_{2,3}]$	1.80	1.83	740.94	0.01
$G_3=[\hat{g}_{1,2,3}]$	1.47	1.52	687.85	0.01	$G_3=[\hat{g}_{1,2,3}]$	1.80	1.85	740.93	0.00
<i>Only Domestic</i>					<i>Only Domestic</i>				
$H_1=[\hat{h}_1]$	1.46	1.49	688.57	0.00	$H_1=[\hat{h}_1]$	1.80	1.82	741.68	0.00
$H_2=[\hat{h}_{6,7}]$	1.43	1.46	681.48	0.04	$H_2=[\hat{h}_{6,7}]$	1.77	1.80	736.00	0.04
$H_3=[\hat{h}_{4,6,7}]$	1.43	1.48	680.87	0.04	$H_3=[\hat{h}_{4,6,7}]$	1.77	1.81	735.12	0.04
$H_4=[\hat{h}_{1,4,6,7}]$	1.43	1.49	680.46	0.04	$H_4=[\hat{h}_{1,4,6,7}]$	1.77	1.83	734.49	0.04
$H_5=[\hat{h}_{1,4,5,6,7}]$	1.44	1.51	680.38	0.04	$H_5=[\hat{h}_{1,3,4,6,7}]$	1.77	1.84	734.07	0.04
$H_6=[\hat{h}_{1,2,4,6,7,9}]$	1.44	1.53	680.31	0.04	$H_6=[\hat{h}_{1,3,4,5,6,7}]$	1.78	1.86	733.77	0.04
$H_7=[\hat{h}_{1,2,3,4,5,6,7}]$	1.45	1.54	680.26	0.03	$H_7=[\hat{h}_{1,3,4,5,6,7,9}]$	1.78	1.88	733.68	0.03
$H_8=[\hat{h}_{1,2,3,4,5,6,7,8}]$	1.46	1.56	680.22	0.03	$H_8=[\hat{h}_{1,3,4,5,6,7,8,9}]$	1.79	1.89	733.62	0.03
$H_9=[\hat{h}_{1,2,3,4,5,6,7,8,9}]$	1.46	1.58	680.24	0.03	$H_9=[\hat{h}_{1,2,3,4,5,6,7,8,9}]$	1.79	1.91	733.63	0.03
<i>Domestic & Global</i>					<i>Domestic & Global</i>				
$HG_1=[\hat{h}_1]$	1.46	1.49	688.52	0.00	$HG_1=[\hat{h}_1]$	1.80	1.82	741.68	0.00
$HG_2=[\hat{h}_{6,7}]$	1.42	1.46	681.13	0.04	$HG_2=[\hat{h}_{6,7}]$	1.77	1.80	736.00	0.04
$HG_3=[\hat{h}_{6,7} \hat{g}_3]$	1.42	1.47	679.19	0.05	$HG_3=[\hat{h}_{6,7} \hat{g}_3]$	1.76	1.81	733.92	0.04
$HG_4=[\hat{h}_{4,6,7} \hat{g}_3]$	1.42	1.48	678.61	0.05	$HG_4=[\hat{h}_{4,6,7} \hat{g}_3]$	1.76	1.82	733.02	0.05
$HG_5=[\hat{h}_{4,6,7,9} \hat{g}_3]$	1.43	1.50	678.23	0.05	$HG_5=[\hat{h}_{4,6,7,9} \hat{g}_3]$	1.76	1.83	732.28	0.05
$HG_6=[\hat{h}_{3,4,6,7} \hat{g}_{1,3}]$	1.43	1.51	678.10	0.05	$HG_6=[\hat{h}_{3,4,6,7,9} \hat{g}_3]$	1.76	1.85	731.78	0.05
$HG_7=[\hat{h}_{1,2,4,6,7} \hat{g}_{1,3}]$	1.44	1.53	677.96	0.05	$HG_7=[\hat{h}_{1,2,4,6,7} \hat{g}_{1,3}]$	1.77	1.86	731.43	0.05
$HG_8=[\hat{h}_{1,2,4,6,7} \hat{g}_{1,2,3}]$	1.44	1.54	677.44	0.05	$HG_8=[\hat{h}_{1,2,4,6,7} \hat{g}_{1,2,3}]$	1.77	1.88	730.88	0.05
$HG_9=[\hat{h}_{1,2,4,6,7,9} \hat{g}_{1,2,3}]$	1.44	1.56	677.29	0.05	$HG_9=[\hat{h}_{1,2,4,6,7,9} \hat{g}_{1,2,3}]$	1.78	1.89	730.54	0.05
$HG_{10}=[\hat{h}_{1,2,4,5,6,7,9} \hat{g}_{1,2,3}]$	1.45	1.58	677.20	0.04	$HG_{10}=[\hat{h}_{1,2,3,4,6,7,9} \hat{g}_{1,2,3}]$	1.78	1.91	730.46	0.04
$HG_{11}=[\hat{h}_{1,2,3,4,5,6,7,9} \hat{g}_{1,2,3}]$	1.45	1.60	677.12	0.04	$HG_{11}=[\hat{h}_{1,2,3,4,5,6,7,9} \hat{g}_{1,2,3}]$	1.79	1.93	730.41	0.04
$HG_{12}=[\hat{h}_{1,2,3,4,5,6,7,8,9} \hat{g}_{1,2,3}]$	1.46	1.61	677.06	0.04	$HG_{12}=[\hat{h}_{1,2,3,4,5,6,7,8,9} \hat{g}_{1,2,3}]$	1.79	1.95	730.34	0.04

Table C.1 Optimal Subset of Factors (continued)

Panel C: Momentum									
	AIC	BIC	LL	\bar{R}^2		AIC	BIC	LL	\bar{R}^2
<i>All Countries</i>					<i>Developed Countries</i>				
<i>Only Global</i>					<i>Only Global</i>				
$G_1=[\hat{g}_3]$	2.03	2.06	780.07	0.01	$G_1=[\hat{g}_2]$	1.83	1.86	747.52	0.02
$G_2=[\hat{g}_{2,3}]$	2.04	2.07	779.66	0.01	$G_2=[\hat{g}_{2,3}]$	1.83	1.87	746.69	0.03
$G_3=[\hat{g}_{1,2,3}]$	2.04	2.09	779.56	0.01	$G_3=[\hat{g}_{1,2,3}]$	1.84	1.89	746.59	0.02
<i>Only Domestic</i>					<i>Only Domestic</i>				
$H_1=[\hat{h}_1]$	2.03	2.06	779.91	0.00	$H_1=[\hat{h}_3]$	1.84	1.87	749.43	0.01
$H_2=[\hat{h}_{1,4}]$	2.03	2.06	778.20	0.01	$H_2=[\hat{h}_{3,4}]$	1.84	1.87	747.34	0.02
$H_3=[\hat{h}_{1,3,4}]$	2.03	2.08	777.66	0.01	$H_3=[\hat{h}_{3,4,8}]$	1.83	1.88	745.89	0.03
$H_4=[\hat{h}_{1,2,3,4}]$	2.04	2.09	777.28	0.01	$H_4=[\hat{h}_{3,4,7,8}]$	1.83	1.89	744.68	0.03
$H_5=[\hat{h}_{1,2,3,4,9}]$	2.04	2.11	777.06	0.01	$H_5=[\hat{h}_{1,3,4,7,8}]$	1.84	1.91	744.31	0.03
$H_6=[\hat{h}_{1,2,3,4,5,9}]$	2.05	2.13	776.85	0.01	$H_6=[\hat{h}_{1,3,4,7,8,9}]$	1.84	1.92	744.19	0.03
$H_7=[\hat{h}_{1,2,3,4,5,8,9}]$	2.05	2.15	776.78	0.01	$H_7=[\hat{h}_{1,2,3,4,7,8,9}]$	1.85	1.94	744.09	0.03
$H_8=[\hat{h}_{1,2,3,4,5,6,8,9}]$	2.06	2.16	776.79	0.00	$H_8=[\hat{h}_{1,2,3,4,6,7,8,9}]$	1.85	1.96	744.00	0.02
$H_9=[\hat{h}_{1,2,3,4,5,6,7,8,9}]$	2.06	2.18	776.81	0.00	$H_9=[\hat{h}_{1,2,3,4,5,6,7,8,9}]$	1.86	1.98	743.96	0.02
<i>Domestic & Global</i>					<i>Domestic & Global</i>				
$HG_1=[\hat{h}_1]$	2.03	2.06	779.91	0.00	$HG_1=[\hat{h}_3]$	1.84	1.87	749.43	0.01
$HG_2=[\hat{h}_{1,4}]$	2.03	2.06	778.20	0.01	$HG_2=[\hat{h}_8 \hat{g}_2]$	1.82	1.86	745.20	0.03
$HG_3=[\hat{h}_{1,4} \hat{g}_3]$	2.03	2.08	777.66	0.01	$HG_3=[\hat{h}_{7,8} \hat{g}_2]$	1.82	1.87	744.28	0.04
$HG_4=[\hat{h}_{2,3,4} \hat{g}_3]$	2.04	2.09	777.14	0.01	$HG_4=[\hat{h}_{4,7,8} \hat{g}_2]$	1.82	1.88	743.39	0.04
$HG_5=[\hat{h}_{2,3,4} \hat{g}_{1,3}]$	2.04	2.11	776.66	0.01	$HG_5=[\hat{h}_{4,7,8} \hat{g}_{1,2}]$	1.83	1.90	742.57	0.04
$HG_6=[\hat{h}_{2,3,4,5} \hat{g}_{1,3}]$	2.04	2.13	776.39	0.01	$HG_6=[\hat{h}_{4,7,8,9} \hat{g}_{1,2}]$	1.83	1.91	742.28	0.04
$HG_7=[\hat{h}_{2,3,4,5,8} \hat{g}_{1,3}]$	2.05	2.14	776.31	0.01	$HG_7=[\hat{h}_{4,6,7,8,9} \hat{g}_{1,2}]$	1.83	1.93	742.00	0.04
$HG_8=[\hat{h}_{2,3,4,5,7,8,9} \hat{g}_{1,3}]$	2.05	2.16	776.25	0.01	$HG_8=[\hat{h}_{3,4,6,7,8,9} \hat{g}_{1,2}]$	1.84	1.95	741.92	0.04
$HG_9=[\hat{h}_{2,3,4,5,7,8,9} \hat{g}_{1,3}]$	2.06	2.18	776.17	0.00	$HG_9=[\hat{h}_{2,3,4,6,7,8,9} \hat{g}_{1,2}]$	1.85	1.96	741.86	0.03
$HG_{10}=[\hat{h}_{1,2,3,4,5,7,8,9} \hat{g}_{1,3}]$	2.07	2.20	776.16	0.00	$HG_{10}=[\hat{h}_{2,3,4,5,6,7,8,9} \hat{g}_{1,2}]$	1.85	1.98	741.80	0.03
$HG_{11}=[\hat{h}_{1,2,3,4,5,7,8,9} \hat{g}_{1,2,3}]$	2.07	2.21	776.17	0.00	$HG_{11}=[\hat{h}_{2,3,4,5,6,7,8,9} \hat{g}_{1,2,3}]$	1.86	2.00	741.76	0.03
$HG_{12}=[\hat{h}_{1,2,3,4,5,6,7,8,9} \hat{g}_{1,2,3}]$	2.08	2.23	776.18	0.00	$HG_{12}=[\hat{h}_{1,2,3,4,5,6,7,8,9} \hat{g}_{1,2,3}]$	1.86	2.02	741.78	0.03

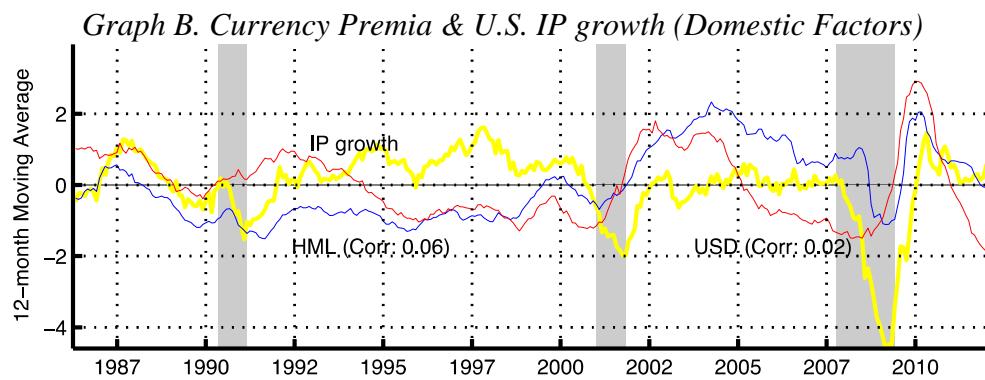
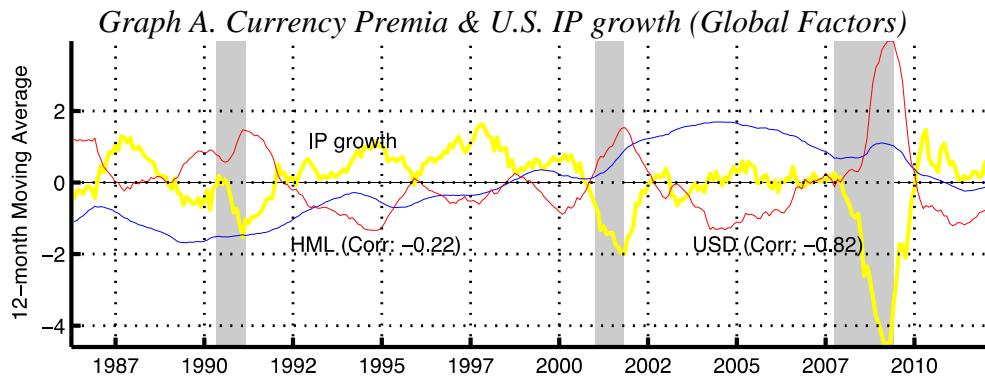


Figure A.1 Countercyclical Currency Premia (US)

The figure displays standardized 12-month moving average of carry trade and dollar carry trade excess returns, when considering the global (Graph A) or domestic (Graph B) factors as well as the 12-month moving average of the US IP growth. The blue line represents the carry trade strategy, the red line is the dollar carry trade and the yellow line depicts the IP growth. We consider the group of *All countries*. The shaded areas represent the NBER recessions of the U.S. economy.

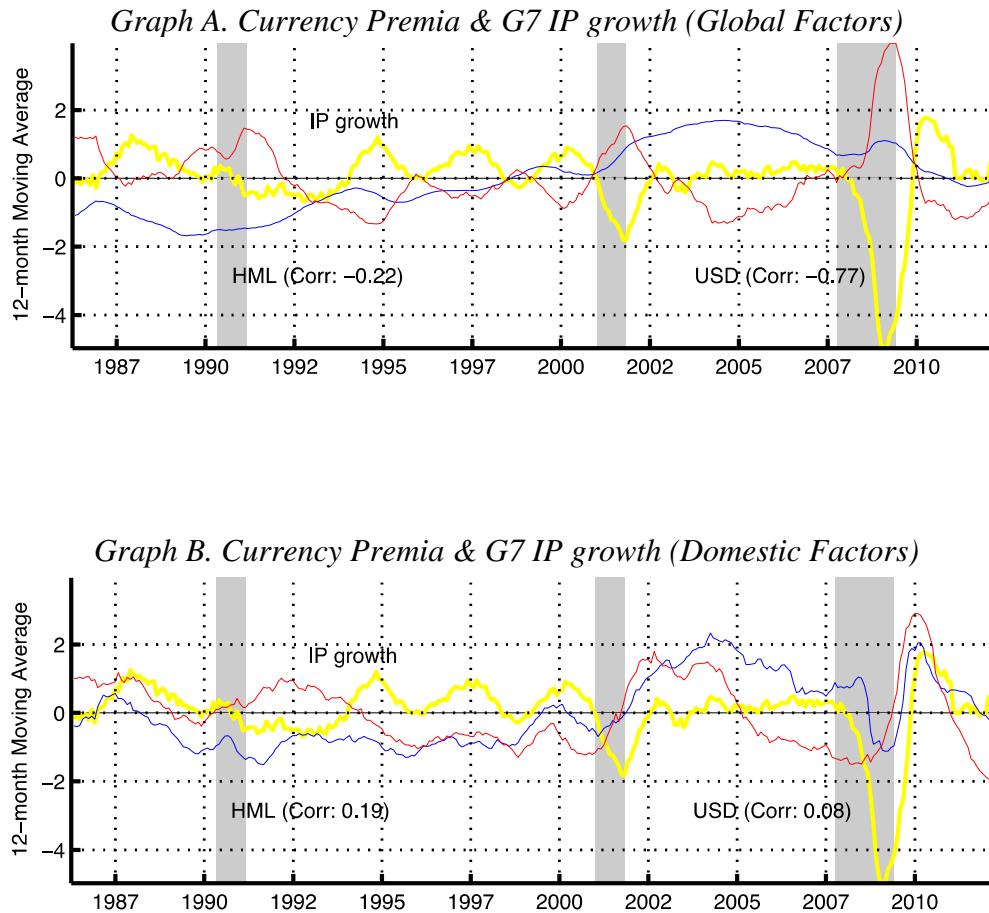


Figure A.2 Countercyclical Currency Premia (G7)

The figure displays standardized 12-month moving average of carry trade and dollar carry trade excess returns, when considering the global (Graph A) or domestic (Graph B) factors as well as the 12-month moving average of the G7 IP growth. The blue line represents the carry trade strategy, the red line is the dollar carry trade and the yellow line depicts the IP growth. We consider the group of *All countries*. The shaded areas represent the NBER recessions of the U.S. economy.