

Do labor market rigidities matter for business cycles? Online Appendix

Stefano Gnocchi

Universitat Autònoma de Barcelona and BGSE

Evi Pappa*

European University Institute, Universitat Autònoma de Barcelona, and CEPR

June 15, 2012

*Corresponding author, mailing address: European University Institute, Department of Economics, Villa San Paolo, Via della Piazzuola 43, 50133 Florence - Italy, Email: evi.pappa@eui.eu Tel. [+39]055 4685 908 Fax [+39]055 4685 902.

Online appendix

A. Cross sectional evidence

A.1 Data filtering

	Statistical factors				Economic factors			
Index	SF1	SF2	SF3	SF4	EF1	EF2	EF3	EF4
Var(y)	-0.19	-0.12	0.22	-0.06	0.01	-0.11	0.15	0.13
Var(n)	0.06	0.03	0.34	0.15	0.16	-0.00	0.07	0.16
Var(u)	-0.01	0.04	0.22	0.26	0.16	-0.01	0.02	0.01
Var(w)	0.07	0.27	0.47*	-0.29	0.14	-0.10	-0.17	0.07
Var(y/n)	-0.03	-0.09	0.16	-0.08	0.19	0.01	-0.03	0.24
Var(π)	-0.06	0.32	0.06	0.06	0.22	0.14	-0.15	-0.13
cor(y,n)	-0.02	0.42*	0.05	0.26	0.23	0.14	0.16	0.36*
cor(w,y/n)	-0.53*	0.07	0.07	0.36*	-0.49*	-0.37*	-0.60*	-0.41*
cor(y,y/n)	-0.19	0.09	0.07	0.02	0.08	-0.01	-0.34	-0.23
cor(n,y/n)	-0.25	-0.10	-0.34*	0.01	-0.11	-0.16	-0.17	-0.23
cor(y, π)	-0.15	0.01	-0.50*	-0.15	0.13	-0.08	-0.10	-0.46*

An * indicates correlations that are significant at the 5 percent level

	Statistical factors				Economic factors			
Index	SF1	SF2	SF3	SF4	EF1	EF2	EF3	EF4
Var(y)	-0.20	-0.12	0.25	-0.05	0.01	-0.16	0.20	0.13
Var(n)	-0.02	0.01	0.37*	0.08	0.08	-0.10	0.03	0.14
Var(u)	-0.12	-0.01	0.28	0.19	0.02	-0.17	0.09	0.04
Var(w)	0.18	0.01	0.61*	-0.19	0.15	-0.03	0.06	0.38*
Var(y/n)	-0.10	-0.08	0.23	-0.14	0.06	-0.09	0.15	0.20
Var(π)	-0.06	0.32	0.06	0.06	0.22	0.14	-0.15	-0.13
cor(y,n)	-0.09	0.38*	-0.04	0.23	0.14	0.07	0.22	0.45*
cor(w,y/n)	-0.45*	0.17	0.05	0.12	-0.48*	-0.42*	-0.42*	-0.24
cor(y,y/n)	-0.24	-0.16	0.08	0.02	0.07	-0.04	-0.41*	-0.13
cor(n,y/n)	-0.16	0.03	-0.32*	0.10	-0.05	-0.10	0.21	-0.34*
cor(y, π)	0.08	-0.15	-0.62*	0.04	0.12	0.31*	-0.24	-0.33*

An * indicates correlations that are significant at the 5 percent level

A.2 Factors extraction on the average of LMI series

Table A2: Spearman rank correlations, 4th dif. factors on average sample values of LMI								
	Statistical factors				Economic factors			
Index	SF1	SF2	SF3	SF4	EF1	EF2	EF3	EF4
Var(y)	-0.10	0.17	-0.06	-0.20	0.02	-0.08	0.09	0.02
Var(n)	0.08	0.07	-0.02	-0.05	0.18	-0.01	0.12	0.03
Var(u)	-0.12	0.09	-0.15	0.09	0.02	-0.07	0.18	0.08
Var(w)	0.05	0.09	0.41*	0.03	0.00	0.03	0.07	0.27
Var(y/n)	0.05	0.11	0.08	-0.27	0.06	0.07	0.17	0.07
Var(π)	-0.00	-0.18	-0.01	0.34	0.12	0.20	-0.03	-0.14
cor(y,n)	0.06	-0.30	-0.10	0.06	0.22	0.14	0.11	0.13
cor(w,y/n)	-0.43*	-0.27	-0.09	0.22	-0.23	-0.11	-0.39*	-0.57*
cor(y,y/n)	-0.09	0.09	0.07	0.02	-0.05	0.07	-0.03	-0.04
cor(n,y/n)	-0.26	-0.07	-0.14	0.23	-0.27	-0.29	-0.27	-0.22
cor(y, π)	0.20	-0.32	-0.36*	-0.19	0.24	0.42*	0.10	-0.09

An * indicates correlations that are significant at the 10 percent level

A.3 Considering each LMI independently

Table A3: Spearman rank correlations, 4th dif. LMI institutions independently

Index	EPL	EPR	EPT	RR	COOD	GOVINT	LEVEL	EXT	MIN_W	UD	UC	CONC	CENT
Var(y)	-0.09	-0.38*	-0.05	-0.16	-0.32*	0.17	-0.36*	-0.27	0.08	0.15	-0.39*	0.30	-0.23
Var(n)	0.04	-0.21	0.15	-0.04	-0.21	0.35*	-0.14	-0.05	0.26	0.19	-0.35*	0.29	-0.05
Var(u)	0.10	-0.07	0.11	-0.01	-0.23	0.38*	-0.06	-0.06	0.22	0.02	-0.37*	0.30	-0.06
Var(w)	-0.02	-0.34*	0.08	-0.09	-0.29	0.18	-0.32	0.48*	0.25	0.12	0.09	0.12	0.04
Var(y/n)	0.02	-0.35*	0.14	0.01	-0.06	0.18	-0.18	-0.13	-0.16	0.36*	-0.16	0.27	-0.12
Var(π)	0.18	-0.34*	0.16	0.14	-0.27	0.28	-0.25	0.01	0.15	0.01	-0.22	0.03	-0.31
cor(y,n)	0.19	-0.12	0.15	0.14	-0.17	0.15	-0.23	0.07	0.61*	-0.29	-0.18	-0.14	-0.24
cor($w,y/n$)	-0.51*	0.09	-0.31*	-0.37*	-0.28	-0.32*	-0.59*	-0.26*	0.40*	-0.32*	-0.52*	-0.06	-0.45*
cor($y,y/n$)	-0.02	-0.29	0.07	-0.01	-0.34*	0.03	-0.44*	-0.03	0.01	-0.01	-0.09	0.12	-0.26
cor($n,y/n$)	-0.10	0.04	-0.12	-0.17	0.09	-0.51*	-0.10	-0.12	0.04	-0.33*	0.09	-0.38*	-0.01
cor(y,π)	-0.11	-0.26	-0.25	-0.08	-0.21	0.04	0.19	-0.15	-0.15	-0.47*	-0.10	-0.20	0.09

A.4 Regression analysis

Table A4: Regression Coefficients on statistical factors								
	F1	F2	F3	F4	F1	F2	F3	F4
vol(y)				cor(y,n)				
4thdiff	-0.01 (0.88)	0.20 (0.07)	0.06 (0.68)	-0.08 (0.61)	-0.01 (0.85)	-0.08 (0.42)	-0.19 (0.18)	0.10 (0.50)
HP	-0.02 (0.67)	0.17 (0.05)	0.06 (0.65)	-0.09 (0.52)	0.007 (0.92)	-0.07 (0.49)	-0.16 (0.34)	0.12 (0.50)
vol(n)				cor(y,y/n)				
4thdiff	0.07 (0.42)	0.03 (0.83)	-0.02 (0.91)	0.0004 (0.99)	-0.006 (0.86)	0.06 (0.25)	0.04 (0.59)	-0.04 (0.64)
HP	0.03 (0.65)	0.07 (0.51)	-0.03 (0.84)	-0.05 (0.78)	-0.008 (0.83)	0.06 (0.29)	0.04 (0.60)	-0.03 (0.75)
vol(π)				cor(n,y/n)				
4thdiff	0.02 (0.84)	-0.17 (0.17)	0.14 (0.41)	-0.08 (0.69)	0.12 (0.27)	-0.006 (0.97)	0.19 (0.39)	-0.12 (0.64)
HP					0.09 (0.55)	-0.01 (0.96)	0.16 (0.62)	-0.26 (0.48)
vol(y/n)				cor(y, π)				
4thdiff	0.02 (0.88)	0.23 (0.18)	0.21 (0.40)	-0.09 (0.74)	-0.08 (0.61)	0.33 (0.16)	0.13 (0.70)	0.22 (0.55)
HP	-0.03 (0.81)	0.20 (0.24)	0.21 (0.40)	-0.11 (0.70)	-0.10 (0.38)	-0.01 (0.93)	-0.10 (0.67)	-0.06 (0.81)
vol(u)				cor(w,y/n)				
4thdiff	-0.11 (0.62)	0.22 (0.51)	-0.58 (0.25)	0.19 (0.72)	-0.41 (0.01)	-0.30 (0.22)	-0.07 (0.83)	-0.13 (0.73)
HP	0.03 (0.72)	0.04 (0.72)	0.03 (0.87)	-0.09 (0.67)	-0.76 (0.009)	-0.05 (0.90)	0.05 (0.92)	0.03 (0.95)
vol(w)								
4thdiff	0.11 (0.27)	0.37 (0.03)	0.48 (0.05)	0.65 (0.02)				

B. Reform episodes

B.1 HP filtered data

mid80-90s						
volatilities	vol(y)	vol(n)	vol(u)	vol(w)	vol(y/n)	vol(π)
D_i	0.32 (0.24)	1.87 (0.13)	0.68 (0.05)	0.03 (0.22)	-0.01 (0.87)	-0.01 (0.89)
$X_{i,pre}$	-0.19 (0.58)	1.13 (0.38)	1.19 (0.07)	-0.95 (0.00)	-0.34 (0.01)	-0.90 (0.00)
correlations	cor(y,n)	cor(w,y/n)	cor(y,y/n)	cor(n,y/n)	cor(y, π)	
D_i	-0.04 (0.76)	-0.38 (0.00)	-0.10 (0.77)	0.11 (0.61)	-0.24 (0.37)	
$X_{i,pre}$	-0.75 (0.28)	-0.05 (0.49)	0.38 (0.78)	-0.44 (0.35)	-0.67 (0.57)	

p-values are in parenthesis

volatilities	vol(y)	vol(n)	vol(u)	vol(w)	vol(y/n)	vol(π)
D_i	0.01 (0.49)	-0.28 (0.39)	0.11 (0.80)	-0.05 (0.10)	0.16 (0.76)	-0.05 (0.18)
$X_{i,pre}$	-1.16 (0.01)	-0.85 (0.01)	-0.49 (0.18)	-0.98 (0.00)	-0.92 (0.01)	-0.90 (0.00)
correlations	cor(y,n)	cor(w,y/n)	cor(y,y/n)	cor(n,y/n)	cor(y, π)	
D_i	-0.15 (0.52)	0.04 (0.86)	0.34 (0.08)	0.25 (0.39)	-0.07 (0.80)	
$X_{i,pre}$	-1.00 (0.04)	-0.69 (0.38)	-0.75 (0.01)	-0.44 (0.35)	-0.59 (0.62)	

p-values are in parenthesis

Table B1.3: Effects of wage bargaining reforms on business cycles-HP filtered data						
1980s						
volatilities	vol(y)	vol(n)	vol(u)	vol(w)	vol(y/n)	vol(π)
D_i	0.33 (0.24)	0.30 (0.84)	0.29 (0.37)	0.01 (0.00)	0.11 (0.48)	-0.17 (0.61)
$X_{i,pre}$	-0.19 (0.58)	-1.33 (0.27)	-0.59 (0.03)	-0.97 (0.00)	0.01 (0.95)	-0.84 (0.00)
correlations	cor(y,n)	cor(w,y/n)	cor(y,y/n)	cor(n,y/n)	cor(y, π)	
D_i	-0.04 (0.76)	-0.08 (0.18)	0.29 (0.22)	0.40 (0.06)	-0.13 (0.51)	
$X_{i,pre}$	-0.75 (0.01)	-0.54 (0.02)	-0.30 (0.63)	-0.50 (0.14)	-1.07 (0.04)	
1990s						
volatilities	vol(y)	vol(n)	vol(u)	vol(w)	vol(y/n)	vol(π)
D_i	0.52 (0.40)	0.27 (0.35)	-0.04 (0.38)	0.03 (0.23)	-0.21 (0.33)	-0.003 (0.97)
$X_{i,pre}$	0.84 (0.57)	-0.03 (0.89)	-0.47 (0.09)	-0.93 (0.00)	-0.20 (0.38)	-1.02 (0.01)
correlations	cor(y,n)	cor(w,y/n)	cor(y,y/n)	cor(n,y/n)	cor(y, π)	
D_i	-0.02 (0.78)	0.65 (0.04)	0.10 (0.66)	0.25 (0.66)	-0.05 (0.86)	
$X_{i,pre}$	-0.21 (0.85)	-0.71 (0.13)	0.98 (0.30)	0.33 (0.78)	-0.41 (0.73)	

p-values are in parenthesis

B.2 Unconditional effect of specific reforms

Table B2.1. Pre- and post-reform samples for EPL reforms			
Country-group	Countries	Mid 80-90s wave	Early 00s wave
3*Controls	Australia, Canada New Zealand, Norway Switzerland, US	Pre: start-88:4 Post: 89:1-end	Pre: start-01:4 Post: 02:4-end
8*Treatments	2*Austria		Pre: start-01:4 Post: 02:4-end
	2*Sweden	Pre: start-93:4 Post: 94:4-end	
	2*Finland	Pre: start-90:4 Post: 91:4-end	Pre: 91:4-00:4 Post: 01:4-end
	2*France	Pre: start-86:4 Post: 87:4-end	
	2*Italy	Pre: start-90:4 Post: 91:4-end	
	2*Japan	Pre: start-85:4 Post: 86:4-end	
	2*Portugal	Pre: start-90:4 Post: 91:4-02:4	Pre: 91:4-02:4 Post: 03:4-end
	2*Spain	Pre: start-83:4 Post: 84:4-01:4	Pre: 84:4-01:4 Post: 02:4-end

Table B2.2. Pre- and post-reform samples for non-employment benefits reforms			
Country-group	Countries	Early 90s wave	Early 00s wave
3*Controls	Australia, Ireland Japan, Norway Switzerland	Pre: start-93:1 Post: 93:2-end	Pre: start-00:2 Post: 00:3-end
9*Treatments	2*Austria	Pre: start-94:4 Post: 95:4-99:4	Pre: 95:4-99:4 Post: 00:4-end
	2*Belgium	Pre: start-91:4 Post: 92:4-end	
	2*Canada	Pre: start-95:4 Post: 96:4-end	
	2*Denmark	Pre: start-93:4 Post: 94:4-02:4	Pre: 94:4-02:4 Post: 03:4-end
	2*Finland		Pre: start-00:4 Post: 01:4-end
	2*France	Pre: start-90:4 Post: 94:1-end	
	2*New Zealand	Pre: start-83:4 Post: 84:4-01:4	
	2*Spain	Pre: start-91:4 Post: 94:1-99:4	Pre: 94:1-99:4 Post: 00:4-end
	2*Sweden		Pre: start-99:4 Post: 00:4-end

Table B2.3. Pre- and post-reform samples for wage bargaining reforms			
Country-group	Countries	80s wave	90s wave
6*Controls	3* Canada US after 73	Pre: beg-82:1 Post: 82:2-end	Pre: beg-92:3 Post: 92:4-end
	3* France after 84 Belgium		Pre: beg-92:3 Post: 92:4-end
14*Treatments	2*Austria	Pre: beg-81:4 Post: 82:4-end	
	2*Australia		Pre: beg-95:4 Post: 96:4-00:4
	2*Japan		Pre: beg-96:4 Post: 97:4-end
	2*New Zealand		Pre: beg-86:4 Post: 87:4-04:4
	2*Spain	Pre: beg-85:4 Post: 86:4-00:4	
	2*Switzerland	Pre: beg-80:4 Post: 81:4-94:4	Pre: 81:4-94:4 Post: 95:4-end
	2*UK	Pre: beg-79:4 Post: 80:4-end	

Table B2.4: Effects of EPL reforms / not controlling for simultaneous reforms							
mid80-90s							
volatilities		vol(y)	vol(n)	vol(u)	vol(w)	vol(y/n)	vol(π)
D_i	4dif	0.59 (0.05)	2.78 (0.05)	-0.002 (0.28)	-0.06 (0.68)	0.52 (0.09)	-0.05 (0.38)
	HP	0.43 (0.00)	1.80 (0.03)	1.59 (0.04)	-0.01 (0.71)	0.44 (0.04)	-0.06 (0.39)
$X_{i,pre}$	4dif	-0.51 (0.20)	0.96 (0.54)	-0.91 (0.00)	-0.74 (0.00)	-0.25 (0.36)	-0.94 (0.00)
	HP	-0.62 (0.00)	0.32 (0.66)	0.19 (0.66)	-0.96 (0.00)	-0.47 (0.01)	-0.93 (0.00)
correlations		cor(y,n)	cor(w,y/n)	cor(y,y/n)	cor(n,y/n)	cor(y, π)	
D_i	4dif	-0.01 (0.91)	-0.39 (0.03)	-0.12 (0.53)	0.05 (0.75)	0.12 (0.48)	
	HP	0.05 (0.98)	-0.28 (0.05)	-0.03 (0.88)	0.14 (0.43)	-0.13 (0.32)	
$X_{i,pre}$	4dif	-0.75 (0.03)	0.30 (0.39)	-0.23 (0.74)	-0.09 (0.84)	-1.24 (0.00)	
	HP	-0.59 (0.01)	1.01 (0.04)	-0.29 (0.67)	-0.21 (0.56)	-0.99 (0.00)	
early00s							
volatilities		vol(y)	vol(n)	vol(u)	vol(w)	vol(y/n)	vol(π)
D_i	4dif	0.60 (0.02)	0.74 (0.30)	-0.00 (0.97)	-0.22 (0.47)	0.59 (0.31)	0.01 (0.88)
	HP	0.97 (0.01)	0.68 (0.27)	0.90 (0.43)	-0.05 (0.47)	0.77 (0.08)	0.01 (0.98)
$X_{i,pre}$	4dif	0.47 (0.14)	-0.86 (0.06)	-0.98 (0.00)	-0.89 (0.00)	-0.71 (0.21)	-1.03 (0.00)
	HP	0.14 (0.76)	-0.27 (0.56)	-0.66 (0.30)	-0.98 (0.00)	-0.72 (0.15)	-1.03 (0.00)
correlations		cor(y,n)	cor(w,y/n)	cor(y,y/n)	cor(n,y/n)	cor(y, π)	
D_i	4dif	0.25 (0.14)	-0.18 (0.14)	-0.02 (0.96)	0.54 (0.13)	0.29 (0.33)	
	HP	0.20 (0.13)	-0.20 (0.68)	0.08 (0.77)	0.29 (0.17)	0.55 (0.05)	
$X_{i,pre}$	4dif	-0.62 (0.11)	-0.37 (0.71)	-0.20 (0.76)	0.39 (0.52)	-2.24 (0.14)	
	HP	-0.61 (0.07)	-1.08 (0.37)	0.57 (0.28)	0.47 (0.27)	-0.14 (0.86)	

p-values are in parenthesis

Table B2.5: Effects of RR/DU reforms / not controlling for simultaneous reforms							
early90s							
volatilities		vol(y)	vol(n)	vol(u)	vol(w)	vol(y/n)	vol(π)
D_i	4dif	1.04 (0.07)	-0.87 (0.33)	-0.16 (0.06)	-0.17 (0.24)	0.43 (0.56)	-0.05 (0.18)
	HP	0.21 (0.06)	-0.86 (0.26)	-0.04 (0.18)	-0.03 (0.30)	0.11 (0.76)	-0.05 (0.18)
$X_{i,pre}$	4dif	2.25 (0.01)	-0.53 (0.55)	-0.99 (0.00)	-0.89 (0.00)	1.74 (0.00)	-0.90 (0.00)
	HP	-0.12 (0.74)	-1.11 (0.11)	-0.39 (0.04)	-0.98 (0.00)	-0.08 (0.62)	-0.90 (0.00)
correlations		cor(y,n)	cor(w,y/n)	cor(y,y/n)	cor(n,y/n)	cor(y, π)	
D_i	4dif	0.10 (0.39)	-0.13 (0.51)	0.15 (0.09)	0.36 (0.07)	-0.12 (0.45)	
	HP	-0.07 (0.59)	-0.20 (0.46)	0.18 (0.20)	0.23 (0.24)	-0.08 (0.62)	
$X_{i,pre}$	4dif	-0.70 (0.00)	-0.53 (0.25)	-0.47 (0.04)	-0.15 (0.69)	-1.89 (0.00)	
	HP	-0.92 (0.01)	-0.69 (0.31)	-0.72 (0.01)	-0.21 (0.53)	-1.28 (0.02)	
early00s							
volatilities		vol(y)	vol(n)	vol(u)	vol(w)	vol(y/n)	vol(π)
D_i	4dif	0.46 (0.22)	-0.00 (0.99)	0.08 (0.70)	-0.35 (0.41)	0.27 (0.33)	0.03 (0.75)
	HP	0.48 (0.31)	0.20 (0.83)	0.42 (0.62)	0.03 (0.48)	0.35 (0.19)	0.03 (0.75)
$X_{i,pre}$	4dif	0.29 (0.25)	0.26 (0.67)	-0.99 (0.00)	-0.65 (0.00)	-0.60 (0.00)	-0.82 (0.00)
	HP	0.27 (0.48)	0.09 (0.89)	-0.25 (0.59)	-0.90 (0.00)	-0.67 (0.00)	-0.82 (0.00)
correlations		cor(y,n)	cor(w,y/n)	cor(y,y/n)	cor(n,y/n)	cor(y, π)	
D_i	4dif	0.08 (0.57)	-0.48 (0.11)	-0.08 (0.80)	-0.00 (0.96)	0.18 (0.38)	
	HP	0.03 (0.79)	-0.49 (0.08)	-0.06 (0.85)	0.06 (0.77)	0.24 (0.14)	
$X_{i,pre}$	4dif	-0.95 (0.00)	-1.28 (0.02)	-0.14 (0.87)	-0.15 (0.69)	-1.43 (0.00)	
	HP	-0.96 (0.00)	-1.46 (0.00)	-0.07 (0.94)	-0.11 (0.77)	-0.91 (0.04)	

p-values are in parenthesis

Table 15: Effects of wage bargaining reforms on business cycles							
1980s							
volatilities		vol(y)	vol(n)	vol(u)	vol(w)	vol(y/n)	vol(π)
D_i	4dif	0.10 (0.66)	0.07 (0.96)	-0.01 (0.68)	-0.02 (0.45)	0.12 (0.66)	-0.07 (0.61)
	HP	0.05 (0.73)	0.43 (0.65)	0.34 (0.24)	0.00 (0.97)	0.14 (0.21)	-0.07 (0.61)
$X_{i,pre}$	4dif	-1.13 (0.01)	-1.06 (0.44)	-0.93 (0.00)	-0.95 (0.00)	-0.52 (0.03)	-0.76 (0.00)
	HP	-1.07 (0.00)	-0.37 (0.66)	1.23 (0.41)	-0.97 (0.00)	-0.76 (0.00)	-0.76 (0.00)
correlations		cor(y,n)	cor(w,y/n)	cor(y,y/n)	cor(n,y/n)	cor(y, π)	
D_i	4dif	-0.18 (0.36)	-0.17 (0.55)	-0.08 (0.58)	-0.31 (0.27)	0.02 (0.94)	
	HP	-0.10 (0.48)	-0.18 (0.10)	-0.09 (0.74)	-0.22 (0.53)	0.22 (0.33)	
	BP						
$X_{i,pre}$	4dif	-0.47 (0.11)	-0.84 (0.19)	0.38 (0.22)	-0.70 (0.10)	-1.20 (0.19)	
	HP	-0.55 (0.02)	-1.02 (0.03)	-0.14 (0.63)	-0.59 (0.19)	-0.85 (0.08)	
	BP						
1990s							
volatilities		vol(y)	vol(n)	vol(u)	vol(w)	vol(y/n)	vol(π)
D_i	4dif	-0.04 (0.89)	0.04 (0.91)	-0.00 (0.98)	-0.14 (0.54)	0.03 (0.94)	0.08 (0.39)
	HP	0.14 (0.54)	0.25 (0.35)	0.04 (0.18)	0.00 (0.99)	0.34 (0.19)	0.08 (0.39)
$X_{i,pre}$	4dif	-0.69 (0.07)	-0.77 (0.07)	-0.92 (0.00)	-0.97 (0.00)	-0.70 (0.09)	-1.00 (0.00)
	HP	0.16 (0.44)	-0.41 (0.08)	-0.32 (0.10)	-0.03 (0.58)	0.10 (0.43)	-1.00 (0.00)
correlations		cor(y,n)	cor(w,y/n)	cor(y,y/n)	cor(n,y/n)	cor(y, π)	
D_i	4dif	-0.29 (0.31)	0.35 (0.09)	-0.02 (0.93)	-0.25 (0.53)	-0.05 (0.90)	
	HP	-0.05 (0.78)	0.51 (0.04)	-0.02 (0.92)	0.07 (0.86)	-0.15 (0.36)	
$X_{i,pre}$	4dif	-1.32 (0.06)	-0.67 (0.15)	-0.55 (0.54)	-1.07 (0.29)	-1.66 (0.17)	
	HP	-0.13 (0.78)	0.40 (0.45)	1.07 (0.20)	-0.65 (0.48)	-0.56 (0.23)	

p-values are in parenthesis