Appendix for Money, Search and Business Cycles

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The subsequent tables provide detailed business-cycle statistics for the U.S. data, the two reference models and the 4 different variations of the model discussed in detail in the paper.

We also include results for the version where DM prices are determined via proportional bargaining. Using the notation in the paper, in this bargaining scheme, the buyer and seller split the total surplus generated from the match with weights θ and $1-\theta$, respectively. Specifically, recall that in (7) the expressions in square brackets are the net surpluses of the buyer and seller respectively. Proportional bargaining would require

$$\frac{u(q) - \frac{Ad}{p_t w_t}}{-c(q, z_t, S_t) - \frac{\delta A z_t}{w_t} + \frac{Ad}{p_t w_t}} = \frac{\theta}{1-\theta}$$

Rearranging, imposing $d = m^b$ and solving for m^b/p, we arrive at exactly (8) except the $g(.)$ function is replaced with the expression in (22). Accordingly (10) and all the equilibrium conditions are still valid with this redefinition of $g(.)$. This variation is important because it eliminates a particular problem that generalized Nash bargaining displays, namely lack of strong monotonicity, which is explained in detail in Aruoba, Rocheteau and Waller (2007).[1]

In the single-capital version, the calibration of this model yields $\alpha = 0.3$, $\delta = 0.0171$, $A = 1.4139$, $B = 0.5568$, $\beta = 0.9854$, $\sigma = 0.026$ and $\theta = 0.9811$. In the two-capital version, we get $\alpha = 0.3$, $\delta = 0.0176$, $A = 1.3898$, $B = 0.5473$, $\beta = 0.9858$, $\sigma = 0.026$ and $\theta = 0.9620$.

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[1] In a nutshell, in the benchmark Lagos-Wright model (and all others built on it), with generalized Nash bargaining and $\theta < 1$, Friedman rule does not achieve the first-best allocation while with proportional bargaining it does. This is due to the property of Nash bargaining that an action by one of the parties that increases the total surplus (brining more money by the buyer, in this case) does not necessarily increase the resulting payoff to this party.

Table A1 - Business Cycle Statistics - U.S. Data

Variable	SD(%)	Relative	A/C	Cross-Correlation with Output in *t*											Corr. with M1 Growth
				x(t-5)	x(t-4)	x(t-3)	x(t-2)	x(t-1)	x(t)	x(t+1)	x(t+2)	x(t+3)	x(t+4)	x(t+5)	
Output	1.51	-	0.91	0.13	0.35	0.57	0.76	0.91	-	0.91	0.76	0.57	0.35	0.13	-0.07
Consumption	0.79	0.52	0.88	0.09	0.31	0.53	0.71	0.85	0.93	0.84	0.71	0.54	0.34	0.16	-0.03
Investment	4.44	2.94	0.90	0.14	0.34	0.55	0.73	0.87	0.97	0.88	0.74	0.54	0.32	0.10	-0.09
Hours	0.41	0.27	0.76	0.12	0.27	0.41	0.54	0.64	0.69	0.62	0.44	0.25	0.07	-0.11	-0.21
Labor Productivity	1.29	0.86	0.90	0.11	0.32	0.55	0.73	0.88	0.97	0.89	0.77	0.61	0.41	0.21	-0.02
Wages	0.87	0.58	0.78	0.04	0.00	-0.04	-0.09	-0.13	-0.18	-0.21	-0.22	-0.18	-0.15	-0.10	0.36
Markup	1.56	1.04	0.61	0.33	0.25	0.13	-0.05	-0.19	-0.36	-0.53	-0.58	-0.58	-0.60	-0.53	0.16
Velocity	2.18	1.45	0.91	-0.23	-0.14	-0.05	0.06	0.19	0.31	0.35	0.35	0.32	0.25	0.16	-0.29
Nominal Interest Rate	1.21	0.80	0.81	-0.59	-0.50	-0.36	-0.19	0.02	0.25	0.39	0.43	0.46	0.46	0.43	-0.46
Inflation	1.24	0.82	0.22	-0.22	-0.18	-0.08	0.03	0.15	0.27	0.22	0.23	0.23	0.28	0.26	-0.04
Money Growth Rate	3.00	1.99	0.48	0.13	0.11	0.12	0.07	0.01	-0.07	-0.21	-0.22	-0.19	-0.13	-0.07	-
Real Money Balances	2.23	1.48	0.93	0.31	0.38	0.43	0.45	0.43	0.37	0.27	0.17	0.07	-0.01	-0.07	0.23

Correlation of Velocity and Nominal Interest Rate 0.54

Notes: The "relative" column reports the standard deviation of each variable relative to that of output and "A/C" column reports the first-order auto-correlation coefficient. Gray cells indicate the displacement that has the highest absolute correlation with output for each variable. High numbers to the left of x(t) denote a leading relationship.

Table A2 - Business Cycle Statistics for the Hansen (1985) RBC Model

				Cross-Correlation with Output										
Variable	**SD(%)**	**Relative**	**A/C**	**x(-5)**	**x(-4)**	**x(-3)**	**x(-2)**	**x(-1)**	**x**	**x(+1)**	**x(+2)**	**x(+3)**	**x(+4)**	**x(+5)**
Output	1.52	-	0.69	-0.05	0.07	0.23	0.44	0.69	-	0.69	0.44	0.23	0.07	-0.05
	0.15	*-*	*0.05*	*0.09*	*0.10*	*0.10*	*0.08*	*0.05*	*-*	*0.05*	*0.08*	*0.10*	*0.10*	*0.09*
Consumption	0.45	0.30	0.80	-0.27	-0.16	0.00	0.22	0.51	0.88	0.76	0.63	0.50	0.38	0.27
	0.05	*0.01*	*0.04*	*0.07*	*0.07*	*0.07*	*0.06*	*0.04*	*0.02*	*0.04*	*0.07*	*0.10*	*0.11*	*0.12*
Investment	7.49	4.94	0.68	0.03	0.14	0.29	0.48	0.71	0.99	0.64	0.36	0.14	-0.03	-0.14
	0.09	*0.06*	*0.10*	*0.11*	*0.10*	*0.08*	*0.05*	*0.00*	*0.05*	*0.08*	*0.09*	*0.09*	*0.08*	*0.08*
Employment	1.14	0.75	0.68	0.05	0.16	0.31	0.50	0.72	0.98	0.62	0.34	0.11	-0.05	-0.17
	0.11	*0.01*	*0.05*	*0.11*	*0.11*	*0.10*	*0.08*	*0.05*	*0.00*	*0.05*	*0.08*	*0.08*	*0.08*	*0.08*
Labor Productivity	0.45	0.30	0.80	-0.27	-0.16	0.00	0.22	0.51	0.88	0.76	0.63	0.50	0.38	0.27
	0.05	*0.01*	*0.04*	*0.07*	*0.07*	*0.07*	*0.06*	*0.04*	*0.02*	*0.04*	*0.07*	*0.10*	*0.11*	*0.12*
Wages	0.45	0.30	0.80	-0.27	-0.16	0.00	0.22	0.51	0.88	0.76	0.63	0.50	0.38	0.27
	0.05	*0.01*	*0.04*	*0.07*	*0.07*	*0.07*	*0.06*	*0.04*	*0.02*	*0.04*	*0.07*	*0.10*	*0.11*	*0.12*

Table A3 - Business Cycle Statistics for the Cooley-Hansen Model

				Cross-Correlation with Output											Corr. with M1
Variable	**SD(%)**	**Relative**	**A/C**	**x(-5)**	**x(-4)**	**x(-3)**	**x(-2)**	**x(-1)**	**x**	**x(+1)**	**x(+2)**	**x(+3)**	**x(+4)**	**x(+5)**	**Growth**
Output	1.50	-	0.69	-0.05	0.07	0.23	0.44	0.69	-	0.69	0.44	0.23	0.07	-0.05	-0.03
	0.15	*-*	*0.05*	*0.10*	*0.10*	*0.10*	*0.08*	*0.05*	*-*	*0.05*	*0.08*	*0.10*	*0.10*	*0.10*	*0.09*
Consumption	0.51	0.34	0.68	-0.24	-0.14	0.00	0.19	0.45	0.77	0.66	0.54	0.43	0.32	0.23	-0.50
	0.05	*0.02*	*0.06*	*0.07*	*0.07*	*0.08*	*0.07*	*0.06*	*0.03*	*0.06*	*0.08*	*0.10*	*0.11*	*0.12*	*0.08*
Investment	7.50	5.00	0.67	0.02	0.14	0.29	0.48	0.70	0.97	0.63	0.35	0.14	-0.03	-0.15	0.14
	0.72	*0.13*	*0.06*	*0.11*	*0.11*	*0.10*	*0.08*	*0.06*	*0.01*	*0.05*	*0.08*	*0.09*	*0.09*	*0.08*	*0.09*
Employment	1.13	0.76	0.68	0.04	0.15	0.31	0.49	0.72	0.98	0.62	0.33	0.11	-0.06	-0.17	-0.05
	0.11	*0.01*	*0.05*	*0.11*	*0.11*	*0.10*	*0.08*	*0.05*	*0.00*	*0.05*	*0.07*	*0.08*	*0.08*	*0.08*	*0.09*
Labor Productivity	0.45	0.30	0.80	-0.27	-0.16	0.00	0.22	0.51	0.88	0.76	0.63	0.50	0.37	0.26	0.04
	0.05	*0.01*	*0.04*	*0.07*	*0.07*	*0.07*	*0.06*	*0.04*	*0.02*	*0.04*	*0.07*	*0.10*	*0.11*	*0.12*	*0.08*
Wages	0.45	0.30	0.80	-0.27	-0.16	0.00	0.22	0.51	0.88	0.76	0.63	0.50	0.37	0.26	0.04
	0.05	*0.01*	*0.04*	*0.07*	*0.07*	*0.07*	*0.06*	*0.04*	*0.02*	*0.04*	*0.07*	*0.10*	*0.11*	*0.12*	*0.09*
Velocity	1.16	0.78	0.66	0.04	0.15	0.30	0.48	0.70	0.95	0.60	0.32	0.11	-0.05	-0.17	0.23
	0.11	*0.02*	*0.06*	*0.11*	*0.11*	*0.10*	*0.09*	*0.06*	*0.01*	*0.06*	*0.08*	*0.09*	*0.09*	*0.08*	*0.09*
Nominal Interest Rate	1.30	0.87	0.36	0.01	0.00	0.00	0.00	-0.01	-0.03	-0.01	0.00	0.00	0.00	0.00	1.00
	0.08	*0.10*	*0.07*	*0.10*	*0.09*	*0.09*	*0.10*	*0.09*	*0.09*	*0.09*	*0.09*	*0.09*	*0.10*	*0.10*	*0.00*
Inflation	3.82	2.57	0.06	-0.03	-0.05	-0.08	-0.10	-0.14	-0.19	0.05	0.06	0.06	0.06	0.05	0.91
	0.20	*0.28*	*0.07*	*0.08*	*0.08*	*0.08*	*0.08*	*0.07*	*0.07*	*0.08*	*0.07*	*0.07*	*0.08*	*0.08*	*0.01*
Money Growth Rate	2.70	1.81	0.36	0.01	0.00	0.00	0.00	-0.01	-0.03	-0.01	0.00	0.00	0.00	0.00	-
	0.17	*0.21*	*0.07*	*0.10*	*0.09*	*0.09*	*0.10*	*0.09*	*0.09*	*0.09*	*0.09*	*0.09*	*0.10*	*0.10*	*-*
Real Money Balances	0.54	0.36	0.65	-0.23	-0.13	0.00	0.18	0.42	0.73	0.63	0.52	0.41	0.31	0.21	-0.57
	0.05	*0.02*	*0.06*	*0.08*	*0.08*	*0.08*	*0.08*	*0.07*	*0.04*	*0.07*	*0.09*	*0.10*	*0.11*	*0.12*	*0.07*

Correlation of Velocity and Nominal Interest Rate	0.23
	0.09

Table A4 - Business Cycle Statistics for Model with One Capital and Generalized Nash Bargaining

				Cross-Correlation with Output											M1
Variable	**SD(%)**	**Relative**	**A/C**	**x(-5)**	**x(-4)**	**x(-3)**	**x(-2)**	**x(-1)**	**x**	**x(+1)**	**x(+2)**	**x(+3)**	**x(+4)**	**x(+5)**	**Growth**
Output	1.50	-	0.69	-0.05	0.08	0.23	0.44	0.69	-	0.69	0.44	0.23	0.08	-0.05	-0.01
	0.14	-	*0.05*	*0.10*	*0.10*	*0.09*	*0.08*	*0.05*	-	*0.05*	*0.08*	*0.09*	*0.10*	*0.10*	*0.09*
Consumption	0.45	0.30	0.79	-0.27	-0.15	0.01	0.23	0.52	0.89	0.76	0.62	0.49	0.37	0.25	-0.05
	0.05	*0.01*	*0.04*	*0.07*	*0.07*	*0.07*	*0.06*	*0.04*	*0.02*	*0.04*	*0.07*	*0.09*	*0.11*	*0.12*	*0.09*
Investment	7.35	4.90	0.68	0.02	0.14	0.29	0.48	0.71	0.99	0.64	0.36	0.14	-0.02	-0.14	0.00
	0.71	*0.10*	*0.05*	*0.11*	*0.11*	*0.10*	*0.08*	*0.05*	*0.00*	*0.05*	*0.08*	*0.09*	*0.09*	*0.08*	*0.09*
Hours	1.14	0.76	0.68	0.04	0.16	0.31	0.49	0.72	0.98	0.62	0.34	0.12	-0.05	-0.17	0.00
	0.11	*0.01*	*0.05*	*0.11*	*0.11*	*0.10*	*0.08*	*0.05*	*0.00*	*0.05*	*0.07*	*0.08*	*0.08*	*0.08*	*0.09*
Labor Productivity	0.43	0.29	0.80	-0.28	-0.17	-0.01	0.21	0.50	0.87	0.76	0.63	0.51	0.38	0.27	-0.04
	0.05	*0.01*	*0.04*	*0.07*	*0.07*	*0.07*	*0.06*	*0.04*	*0.02*	*0.04*	*0.07*	*0.09*	*0.11*	*0.12*	*0.09*
Wages	0.45	0.30	0.79	-0.27	-0.15	0.01	0.23	0.52	0.89	0.76	0.62	0.49	0.37	0.25	0.02
	0.05	*0.01*	*0.04*	*0.07*	*0.07*	*0.07*	*0.06*	*0.04*	*0.02*	*0.04*	*0.07*	*0.09*	*0.11*	*0.12*	*0.09*
Markup	0.01	0.01	0.68	-0.11	-0.22	-0.36	-0.52	-0.72	-0.94	-0.55	-0.25	-0.02	0.14	0.25	-0.08
	0.00	*0.00*	*0.05*	*0.11*	*0.11*	*0.10*	*0.08*	*0.05*	*0.01*	*0.05*	*0.07*	*0.07*	*0.07*	*0.07*	*0.09*
Velocity	1.63	1.09	0.50	0.04	0.12	0.22	0.34	0.48	0.65	0.41	0.22	0.07	-0.04	-0.12	0.73
	0.12	*0.09*	*0.07*	*0.11*	*0.10*	*0.10*	*0.09*	*0.08*	*0.06*	*0.08*	*0.09*	*0.09*	*0.09*	*0.09*	*0.05*
Nominal Interest Rate	0.16	0.11	0.35	-0.01	-0.03	-0.04	-0.07	-0.10	-0.14	-0.08	-0.04	-0.01	0.01	0.03	0.99
	0.01	*0.01*	*0.07*	*0.10*	*0.09*	*0.10*	*0.09*	*0.09*	*0.09*	*0.10*	*0.10*	*0.09*	*0.10*	*0.10*	*0.00*
Inflation	4.71	3.17	-0.05	-0.03	-0.05	-0.07	-0.09	-0.12	-0.16	0.05	0.05	0.05	0.05	0.04	0.87
	0.25	*0.33*	*0.07*	*0.07*	*0.07*	*0.07*	*0.07*	*0.07*	*0.07*	*0.07*	*0.07*	*0.07*	*0.07*	*0.07*	*0.01*
Money Growth Rate	2.69	1.81	0.35	0.00	0.00	0.00	0.00	-0.01	-0.01	-0.01	0.00	0.00	0.00	0.00	-
	0.17	*0.20*	*0.07*	*0.10*	*0.09*	*0.10*	*0.09*	*0.09*	*0.09*	*0.10*	*0.10*	*0.09*	*0.10*	*0.10*	-
Real Money Balances	0.72	0.48	0.54	-0.18	-0.10	0.00	0.15	0.34	0.59	0.50	0.42	0.33	0.25	0.18	-0.75
	0.06	*0.04*	*0.07*	*0.08*	*0.08*	*0.08*	*0.08*	*0.08*	*0.06*	*0.08*	*0.09*	*0.10*	*0.11*	*0.11*	*0.05*
P(CM) / P(Aggregate)	0.02	0.01	0.57	-0.18	0.16	0.27	0.42	0.59	0.79	0.48	0.24	0.06	-0.07	-0.17	0.57
	0.00	*0.00*	*0.06*	*0.08*	*0.11*	*0.10*	*0.09*	*0.07*	*0.04*	*0.07*	*0.08*	*0.08*	*0.08*	*0.08*	*0.07*

Correlation of Velocity and Nominal Interest Rate	0.639
	0.063

Table A5 - Business Cycle Statistics for Model with One Capital and Proportional Bargaining

				Cross-Correlation with Output											Corr. with M1
Variable	**SD(%)**	**Relative**	**A/C**	**x(-5)**	**x(-4)**	**x(-3)**	**x(-2)**	**x(-1)**	**x**	**x(+1)**	**x(+2)**	**x(+3)**	**x(+4)**	**x(+5)**	**Growth**
Output	1.49	-	0.69	-0.05	0.07	0.23	0.43	0.69	-	0.69	0.43	0.23	0.07	-0.05	-0.03
	0.15	*-*	*0.05*	*0.10*	*0.10*	*0.10*	*0.08*	*0.05*	*-*	*0.05*	*0.08*	*0.10*	*0.10*	*0.10*	*0.09*
Consumption	0.45	0.30	0.79	-0.27	-0.16	0.00	0.22	0.51	0.88	0.75	0.62	0.49	0.37	0.26	-0.09
	0.05	*0.01*	*0.05*	*0.07*	*0.07*	*0.07*	*0.06*	*0.04*	*0.02*	*0.04*	*0.08*	*0.10*	*0.11*	*0.12*	*0.09*
Investment	7.32	4.91	0.68	0.03	0.14	0.29	0.48	0.71	0.99	0.63	0.35	0.14	-0.03	-0.14	0.00
	0.73	*0.10*	*0.06*	*0.10*	*0.11*	*0.10*	*0.09*	*0.06*	*0.00*	*0.05*	*0.08*	*0.09*	*0.09*	*0.08*	*0.09*
Hours	1.14	0.77	0.68	0.04	0.16	0.30	0.49	0.72	0.98	0.62	0.33	0.11	-0.05	-0.16	0.00
	0.11	*0.01*	*0.06*	*0.11*	*0.11*	*0.10*	*0.09*	*0.05*	*0.00*	*0.05*	*0.08*	*0.09*	*0.08*	*0.08*	*0.09*
Labor Productivity	0.43	0.29	0.80	-0.28	-0.17	-0.02	0.20	0.49	0.87	0.75	0.63	0.51	0.39	0.28	-0.09
	0.05	*0.01*	*0.04*	*0.07*	*0.07*	*0.07*	*0.06*	*0.04*	*0.02*	*0.04*	*0.07*	*0.10*	*0.11*	*0.12*	*0.09*
Wages	0.44	0.30	0.79	-0.27	-0.16	0.00	0.22	0.52	0.88	0.76	0.62	0.49	0.37	0.26	-0.02
	0.05	*0.01*	*0.04*	*0.07*	*0.07*	*0.07*	*0.06*	*0.04*	*0.02*	*0.04*	*0.07*	*0.10*	*0.11*	*0.12*	*0.09*
Markup	0.02	0.02	0.42	-0.05	-0.10	-0.16	-0.24	-0.34	-0.46	-0.26	-0.12	-0.01	0.07	0.11	0.89
	0.00	*0.00*	*0.07*	*0.10*	*0.10*	*0.10*	*0.10*	*0.09*	*0.08*	*0.09*	*0.09*	*0.09*	*0.09*	*0.09*	*0.02*
Velocity	1.20	0.81	0.62	0.05	0.16	0.29	0.45	0.65	0.88	0.55	0.29	0.09	-0.06	-0.16	0.41
	0.11	*0.04*	*0.06*	*0.11*	*0.11*	*0.11*	*0.09*	*0.06*	*0.02*	*0.06*	*0.08*	*0.09*	*0.09*	*0.08*	*0.08*
Nominal Interest Rate	0.22	0.15	0.36	-0.01	-0.02	-0.04	-0.06	-0.09	-0.13	-0.07	-0.03	0.00	0.02	0.03	0.99
	0.01	*0.02*	*0.07*	*0.09*	*0.09*	*0.10*	*0.10*	*0.09*	*0.09*	*0.10*	*0.10*	*0.10*	*0.10*	*0.10*	*0.00*
Inflation	4.68	3.17	-0.04	-0.03	-0.05	-0.06	-0.09	-0.13	-0.17	0.05	0.06	0.06	0.05	0.05	0.87
	0.23	*0.34*	*0.07*	*0.07*	*0.07*	*0.07*	*0.07*	*0.07*	*0.07*	*0.07*	*0.07*	*0.07*	*0.07*	*0.07*	*0.01*
Money Growth Rate	2.70	1.83	0.35	0.00	0.00	0.00	0.00	-0.01	-0.03	-0.01	0.00	0.01	0.01	0.00	-
	0.16	*0.21*	*0.07*	*0.09*	*0.10*	*0.10*	*0.10*	*0.09*	*0.09*	*0.10*	*0.10*	*0.10*	*0.10*	*0.10*	*-*
Real Money Balances	0.72	0.48	0.55	-0.18	-0.11	0.00	0.15	0.35	0.60	0.51	0.42	0.33	0.25	0.18	-0.74
	0.06	*0.04*	*0.07*	*0.08*	*0.08*	*0.08*	*0.08*	*0.08*	*0.06*	*0.08*	*0.09*	*0.10*	*0.11*	*0.11*	*0.05*
P(CM) / P(Aggregate)	0.01	0.01	0.46	-0.18	0.12	0.19	0.29	0.41	0.55	0.32	0.15	0.02	-0.07	-0.13	-0.83
	0.00	*0.00*	*0.07*	*0.08*	*0.10*	*0.10*	*0.10*	*0.08*	*0.07*	*0.09*	*0.09*	*0.09*	*0.09*	*0.09*	*0.03*

Correlation of Velocity and Nominal Interest Rate	0.306
	0.09

Table A6 - Business Cycle Statistics for Model with One Capital and Price-Taking

				Cross-Correlation with Output											Corr. with M1
Variable	**SD(%)**	**Relative**	**A/C**	**x(-5)**	**x(-4)**	**x(-3)**	**x(-2)**	**x(-1)**	**x**	**x(+1)**	**x(+2)**	**x(+3)**	**x(+4)**	**x(+5)**	**Growth**
Output	1.49	-	0.70	-0.05	0.08	0.24	0.44	0.70	-	0.70	0.44	0.24	0.08	-0.05	-0.01
	0.14	*-*	*0.05*	*0.10*	*0.10*	*0.10*	*0.08*	*0.05*	*-*	*0.05*	*0.08*	*0.10*	*0.10*	*0.10*	*0.10*
Consumption	0.45	0.30	0.79	-0.27	-0.16	0.00	0.23	0.52	0.88	0.76	0.63	0.50	0.38	0.26	-0.06
	0.05	*0.01*	*0.04*	*0.07*	*0.07*	*0.07*	*0.06*	*0.04*	*0.02*	*0.04*	*0.07*	*0.10*	*0.11*	*0.12*	*0.10*
Investment	7.35	4.92	0.68	0.03	0.15	0.30	0.49	0.72	0.99	0.64	0.36	0.14	-0.02	-0.14	0.01
	0.69	*0.09*	*0.05*	*0.11*	*0.11*	*0.10*	*0.08*	*0.05*	*0.00*	*0.05*	*0.08*	*0.09*	*0.09*	*0.09*	*0.10*
Hours	1.15	0.77	0.68	0.05	0.17	0.31	0.50	0.72	0.98	0.63	0.34	0.12	-0.05	-0.17	0.01
	0.10	*0.01*	*0.05*	*0.11*	*0.11*	*0.10*	*0.08*	*0.05*	*0.00*	*0.05*	*0.07*	*0.08*	*0.08*	*0.08*	*0.10*
Labor Productivity	0.43	0.29	0.81	-0.29	-0.18	-0.02	0.21	0.50	0.86	0.76	0.64	0.52	0.40	0.29	-0.05
	0.05	*0.01*	*0.04*	*0.07*	*0.07*	*0.07*	*0.06*	*0.04*	*0.02*	*0.04*	*0.07*	*0.09*	*0.11*	*0.12*	*0.10*
Wages	0.45	0.30	0.80	-0.27	-0.16	0.00	0.23	0.52	0.88	0.76	0.63	0.50	0.38	0.26	0.02
	0.05	*0.01*	*0.04*	*0.07*	*0.07*	*0.07*	*0.06*	*0.04*	*0.02*	*0.04*	*0.07*	*0.10*	*0.11*	*0.12*	*0.10*
Velocity	1.24	0.83	0.63	0.05	0.15	0.28	0.45	0.65	0.88	0.56	0.31	0.11	-0.04	-0.15	0.43
	0.10	*0.04*	*0.06*	*0.11*	*0.11*	*0.10*	*0.09*	*0.06*	*0.02*	*0.06*	*0.08*	*0.09*	*0.09*	*0.08*	*0.08*
Nominal Interest Rate	0.13	0.09	0.35	0.01	0.01	0.00	0.00	0.00	-0.01	0.00	0.01	0.01	0.00	0.00	1.00
	0.01	*0.01*	*0.07*	*0.09*	*0.09*	*0.09*	*0.10*	*0.10*	*0.10*	*0.10*	*0.09*	*0.09*	*0.09*	*0.10*	*0.00*
Inflation	4.75	3.21	-0.05	-0.02	-0.04	-0.06	-0.08	-0.11	-0.14	0.05	0.05	0.05	0.05	0.04	0.87
	0.24	*0.33*	*0.07*	*0.07*	*0.07*	*0.07*	*0.07*	*0.07*	*0.07*	*0.07*	*0.07*	*0.07*	*0.07*	*0.07*	*0.01*
Money Growth Rate	2.70	1.82	0.35	0.01	0.01	0.00	0.00	0.00	-0.01	0.00	0.01	0.01	0.00	0.00	-
	0.16	*0.20*	*0.07*	*0.09*	*0.09*	*0.09*	*0.10*	*0.10*	*0.10*	*0.10*	*0.09*	*0.09*	*0.09*	*0.10*	*-*
Real Money Balances	0.71	0.48	0.52	-0.17	-0.10	0.00	0.14	0.32	0.56	0.47	0.39	0.31	0.24	0.17	-0.78
	0.06	*0.04*	*0.06*	*0.08*	*0.08*	*0.08*	*0.09*	*0.08*	*0.07*	*0.08*	*0.09*	*0.10*	*0.11*	*0.11*	*0.05*
P(CM) / P(Aggregate)	0.01	0.00	0.51	-0.17	0.12	0.21	0.34	0.49	0.66	0.42	0.23	0.08	-0.03	-0.11	0.73
	0.00	*0.00*	*0.06*	*0.08*	*0.11*	*0.10*	*0.10*	*0.08*	*0.06*	*0.08*	*0.09*	*0.09*	*0.09*	*0.09*	*0.05*

Correlation of Velocity and Nominal Interest Rate	0.433
	0.08

Table A7 - Business Cycle Statistics for Model with Two Capital Stocks and Generalized Nash Bargaining

				Cross-Correlation with Output											Corr. with M1
Variable	**SD(%)**	**Relative**	**A/C**	**x(-5)**	**x(-4)**	**x(-3)**	**x(-2)**	**x(-1)**	**x**	**x(+1)**	**x(+2)**	**x(+3)**	**x(+4)**	**x(+5)**	**Growth**
Output	1.64	-	0.64	-0.05	0.07	0.21	0.40	0.64	-	0.64	0.40	0.21	0.07	-0.05	0.13
	0.15	*-*	*0.06*	*0.09*	*0.10*	*0.09*	*0.08*	*0.06*	*-*	*0.06*	*0.08*	*0.09*	*0.10*	*0.09*	*0.10*
Consumption	0.59	0.36	0.58	-0.19	-0.09	0.06	0.25	0.51	0.92	0.60	0.46	0.34	0.24	0.15	0.36
	0.05	*0.01*	*0.07*	*0.07*	*0.07*	*0.07*	*0.07*	*0.06*	*0.01*	*0.07*	*0.09*	*0.10*	*0.11*	*0.11*	*0.08*
Investment	7.48	4.57	0.67	0.01	0.12	0.27	0.44	0.67	0.98	0.63	0.36	0.15	-0.01	-0.13	0.03
	0.70	*0.10*	*0.06*	*0.10*	*0.11*	*0.10*	*0.09*	*0.06*	*0.00*	*0.05*	*0.08*	*0.09*	*0.09*	*0.08*	*0.10*
Hours	1.15	0.70	0.68	0.03	0.14	0.28	0.46	0.67	0.98	0.63	0.35	0.13	-0.03	-0.15	0.00
	0.11	*0.01*	*0.05*	*0.11*	*0.11*	*0.10*	*0.09*	*0.06*	*0.00*	*0.05*	*0.08*	*0.08*	*0.09*	*0.08*	*0.10*
Labor Productivity	0.57	0.35	0.58	-0.20	-0.10	0.05	0.24	0.50	0.91	0.59	0.46	0.35	0.25	0.16	0.38
	0.05	*0.01*	*0.07*	*0.07*	*0.07*	*0.07*	*0.07*	*0.06*	*0.01*	*0.07*	*0.09*	*0.10*	*0.11*	*0.11*	*0.08*
Wages	0.60	0.37	0.57	-0.19	-0.09	0.06	0.25	0.51	0.91	0.59	0.45	0.34	0.24	0.15	0.41
	0.05	*0.01*	*0.07*	*0.07*	*0.07*	*0.07*	*0.07*	*0.06*	*0.01*	*0.07*	*0.09*	*0.10*	*0.11*	*0.11*	*0.08*
Markup	0.01	0.01	0.53	-0.03	-0.10	-0.18	-0.30	-0.44	-0.70	-0.48	-0.24	-0.07	0.05	0.13	-0.78
	0.00	*0.00*	*0.06*	*0.10*	*0.11*	*0.10*	*0.10*	*0.08*	*0.05*	*0.07*	*0.09*	*0.09*	*0.09*	*0.08*	*0.04*
Velocity	1.24	0.76	0.62	0.02	0.12	0.25	0.41	0.62	0.94	0.59	0.31	0.11	-0.04	-0.14	0.43
	0.11	*0.02*	*0.06*	*0.10*	*0.11*	*0.10*	*0.09*	*0.07*	*0.01*	*0.06*	*0.08*	*0.08*	*0.08*	*0.08*	*0.08*
Nominal Interest Rate	0.13	0.08	0.35	-0.02	-0.01	-0.01	0.00	0.03	0.13	0.05	0.01	-0.01	-0.02	-0.02	1.00
	0.01	*0.01*	*0.07*	*0.09*	*0.09*	*0.09*	*0.09*	*0.10*	*0.10*	*0.09*	*0.09*	*0.10*	*0.09*	*0.10*	*0.00*
Inflation	4.13	2.54	0.02	-0.05	-0.06	-0.08	-0.10	-0.11	-0.09	0.17	0.06	0.05	0.04	0.04	0.85
	0.22	*0.26*	*0.07*	*0.07*	*0.07*	*0.07*	*0.07*	*0.07*	*0.07*	*0.07*	*0.07*	*0.08*	*0.07*	*0.08*	*0.02*
Money Growth Rate	2.69	1.66	0.35	-0.01	-0.01	-0.01	0.00	0.03	0.13	0.05	0.01	-0.01	-0.02	-0.02	-
	0.17	*0.18*	*0.07*	*0.09*	*0.09*	*0.09*	*0.09*	*0.10*	*0.10*	*0.09*	*0.09*	*0.10*	*0.09*	*0.10*	-
Real Money Balances	0.64	0.39	0.58	-0.16	-0.07	0.06	0.23	0.45	0.74	0.51	0.42	0.33	0.24	0.16	-0.50
	0.05	*0.03*	*0.07*	*0.08*	*0.08*	*0.08*	*0.08*	*0.07*	*0.04*	*0.08*	*0.10*	*0.11*	*0.11*	*0.11*	*0.07*
P(CM) / P(Aggregate)	0.30	0.18	0.23	-0.16	0.08	0.14	0.23	0.34	0.57	0.09	0.01	-0.05	-0.08	-0.10	0.83
	0.02	*0.02*	*0.07*	*0.08*	*0.09*	*0.09*	*0.08*	*0.08*	*0.06*	*0.08*	*0.08*	*0.08*	*0.08*	*0.08*	*0.03*

Correlation of Velocity and Nominal Interest Rate	0.429
	0.08

Table A8 - Business Cycle Statistics for Model with Two Capital Stocks and Proportional Bargaining

				Cross-Correlation with Output											Corr. with M1
Variable	**SD(%)**	**Relative**	**A/C**	**x(-5)**	**x(-4)**	**x(-3)**	**x(-2)**	**x(-1)**	**x**	**x(+1)**	**x(+2)**	**x(+3)**	**x(+4)**	**x(+5)**	**Growth**
Output	1.56	-	0.67	-0.05	0.07	0.23	0.43	0.67	-	0.67	0.43	0.23	0.07	-0.05	0.02
	0.15	*-*	*0.06*	*0.09*	*0.10*	*0.10*	*0.09*	*0.06*	*-*	*0.06*	*0.09*	*0.10*	*0.10*	*0.09*	*0.10*
Consumption	0.49	0.32	0.70	-0.23	-0.12	0.04	0.26	0.54	0.92	0.68	0.55	0.43	0.31	0.21	0.07
	0.05	*0.01*	*0.06*	*0.07*	*0.07*	*0.07*	*0.07*	*0.05*	*0.01*	*0.06*	*0.09*	*0.10*	*0.11*	*0.12*	*0.09*
Investment	7.43	4.76	0.68	0.02	0.13	0.28	0.47	0.69	0.99	0.64	0.36	0.15	-0.02	-0.14	0.01
	0.75	*0.09*	*0.06*	*0.10*	*0.11*	*0.10*	*0.09*	*0.06*	*0.00*	*0.05*	*0.08*	*0.09*	*0.09*	*0.08*	*0.10*
Hours	1.15	0.74	0.69	0.03	0.15	0.30	0.48	0.70	0.99	0.63	0.35	0.13	-0.04	-0.16	0.00
	0.11	*0.01*	*0.06*	*0.11*	*0.11*	*0.10*	*0.09*	*0.06*	*0.00*	*0.05*	*0.08*	*0.09*	*0.08*	*0.08*	*0.10*
Labor Productivity	0.47	0.30	0.70	-0.25	-0.14	0.02	0.24	0.52	0.91	0.68	0.56	0.44	0.33	0.23	0.08
	0.05	*0.01*	*0.06*	*0.07*	*0.07*	*0.07*	*0.06*	*0.05*	*0.02*	*0.06*	*0.09*	*0.10*	*0.11*	*0.12*	*0.09*
Wages	0.50	0.32	0.69	-0.23	-0.12	0.04	0.25	0.53	0.92	0.68	0.55	0.43	0.31	0.21	0.13
	0.05	*0.01*	*0.07*	*0.07*	*0.07*	*0.07*	*0.07*	*0.05*	*0.01*	*0.06*	*0.09*	*0.11*	*0.11*	*0.12*	*0.09*
Markup	0.02	0.01	0.41	-0.02	-0.07	-0.12	-0.18	-0.25	-0.33	-0.29	-0.16	-0.06	0.02	0.07	0.93
	0.00	*0.00*	*0.07*	*0.10*	*0.10*	*0.10*	*0.09*	*0.09*	*0.09*	*0.09*	*0.10*	*0.10*	*0.09*	*0.09*	*0.02*
Velocity	1.21	0.78	0.63	0.04	0.14	0.28	0.44	0.64	0.90	0.57	0.31	0.10	-0.05	-0.16	0.41
	0.11	*0.03*	*0.06*	*0.11*	*0.11*	*0.11*	*0.09*	*0.07*	*0.02*	*0.06*	*0.08*	*0.09*	*0.09*	*0.08*	*0.08*
Nominal Interest Rate	0.20	0.13	0.35	0.00	-0.01	-0.02	-0.03	-0.03	-0.03	-0.03	-0.02	-0.01	0.00	0.01	1.00
	0.01	*0.02*	*0.07*	*0.10*	*0.09*	*0.09*	*0.09*	*0.09*	*0.10*	*0.10*	*0.10*	*0.10*	*0.10*	*0.10*	*0.00*
Inflation	4.52	2.92	-0.03	-0.03	-0.05	-0.07	-0.10	-0.12	-0.15	0.10	0.05	0.05	0.05	0.04	0.86
	0.23	*0.32*	*0.07*	*0.07*	*0.07*	*0.07*	*0.07*	*0.07*	*0.07*	*0.07*	*0.07*	*0.07*	*0.07*	*0.07*	*0.01*
Money Growth Rate	2.70	1.74	0.35	0.00	0.00	0.00	0.00	0.01	0.02	0.00	0.00	-0.01	-0.01	-0.01	-
	0.17	*0.20*	*0.07*	*0.10*	*0.09*	*0.09*	*0.09*	*0.09*	*0.10*	*0.10*	*0.10*	*0.10*	*0.10*	*0.10*	-
Real Money Balances	0.70	0.45	0.55	-0.18	-0.09	0.03	0.19	0.39	0.67	0.51	0.42	0.33	0.24	0.17	-0.66
	0.06	*0.03*	*0.07*	*0.08*	*0.08*	*0.08*	*0.08*	*0.07*	*0.05*	*0.08*	*0.10*	*0.11*	*0.11*	*0.11*	*0.06*
P(CM) / P(Aggregate)	0.11	0.07	0.19	-0.18	0.13	0.22	0.32	0.44	0.62	0.04	-0.04	-0.09	-0.12	-0.14	0.61
	0.01	*0.01*	*0.08*	*0.08*	*0.09*	*0.09*	*0.08*	*0.07*	*0.05*	*0.09*	*0.08*	*0.08*	*0.08*	*0.08*	*0.05*

Correlation of Velocity and Nominal Interest Rate	0.356
	0.09

Table A9 - Business Cycle Statistics for Model with Two Capital Stocks and Price Taking

				Cross-Correlation with Output											Corr. with M1
Variable	**SD(%)**	**Relative**	**A/C**	**x(-5)**	**x(-4)**	**x(-3)**	**x(-2)**	**x(-1)**	**x**	**x(+1)**	**x(+2)**	**x(+3)**	**x(+4)**	**x(+5)**	**Growth**
Output	1.57	-	0.72	-0.05	0.07	0.24	0.45	0.72	-	0.72	0.45	0.24	0.07	-0.05	0.02
	0.16	*-*	*0.05*	*0.10*	*0.10*	*0.10*	*0.08*	*0.05*	*-*	*0.05*	*0.08*	*0.10*	*0.10*	*0.10*	*0.10*
Consumption	0.47	0.30	0.76	-0.26	-0.15	0.02	0.25	0.55	0.90	0.73	0.60	0.48	0.36	0.25	0.03
	0.05	*0.01*	*0.05*	*0.07*	*0.07*	*0.07*	*0.06*	*0.04*	*0.02*	*0.05*	*0.08*	*0.10*	*0.11*	*0.12*	*0.09*
Investment	7.69	4.90	0.72	0.02	0.14	0.30	0.49	0.73	0.99	0.68	0.38	0.15	-0.02	-0.14	0.01
	0.79	*0.10*	*0.05*	*0.11*	*0.11*	*0.10*	*0.08*	*0.05*	*0.00*	*0.05*	*0.08*	*0.09*	*0.09*	*0.09*	*0.10*
Hours	1.19	0.76	0.72	0.04	0.16	0.31	0.51	0.74	0.98	0.67	0.36	0.13	-0.05	-0.17	0.00
	0.12	*0.01*	*0.05*	*0.11*	*0.11*	*0.10*	*0.08*	*0.05*	*0.00*	*0.04*	*0.07*	*0.09*	*0.09*	*0.09*	*0.10*
Labor Productivity	0.45	0.29	0.76	-0.28	-0.16	0.00	0.23	0.53	0.88	0.72	0.61	0.49	0.38	0.27	0.05
	0.05	*0.01*	*0.05*	*0.07*	*0.07*	*0.07*	*0.06*	*0.04*	*0.02*	*0.05*	*0.08*	*0.10*	*0.11*	*0.12*	*0.09*
Wages	0.47	0.30	0.75	-0.26	-0.15	0.02	0.25	0.55	0.89	0.73	0.60	0.47	0.35	0.25	0.10
	0.05	*0.01*	*0.05*	*0.07*	*0.07*	*0.07*	*0.06*	*0.04*	*0.02*	*0.05*	*0.08*	*0.10*	*0.11*	*0.12*	*0.09*
Velocity	1.29	0.82	0.66	0.03	0.14	0.28	0.46	0.68	0.90	0.61	0.33	0.12	-0.04	-0.15	0.42
	0.12	*0.04*	*0.05*	*0.11*	*0.11*	*0.11*	*0.09*	*0.06*	*0.02*	*0.06*	*0.08*	*0.09*	*0.09*	*0.09*	*0.09*
Nominal Interest Rate	0.13	0.08	0.35	0.00	0.00	0.00	0.00	0.02	0.01	0.01	0.00	0.00	0.00	0.00	1.00
	0.01	*0.01*	*0.07*	*0.10*	*0.10*	*0.10*	*0.10*	*0.10*	*0.10*	*0.10*	*0.10*	*0.10*	*0.10*	*0.10*	*0.00*
Inflation	4.63	2.98	-0.04	-0.03	-0.05	-0.07	-0.09	-0.11	-0.13	0.07	0.05	0.05	0.05	0.04	0.87
	0.24	*0.33*	*0.07*	*0.07*	*0.07*	*0.07*	*0.07*	*0.07*	*0.07*	*0.07*	*0.07*	*0.07*	*0.07*	*0.07*	*0.01*
Money Growth Rate	2.70	1.74	0.35	0.00	0.00	0.00	0.00	0.02	0.02	0.01	0.00	0.00	0.00	0.00	-
	0.16	*0.20*	*0.07*	*0.10*	*0.10*	*0.10*	*0.10*	*0.10*	*0.10*	*0.10*	*0.10*	*0.10*	*0.10*	*0.10*	*-*
Real Money Balances	0.70	0.45	0.54	-0.17	-0.10	0.02	0.17	0.36	0.59	0.48	0.40	0.32	0.24	0.17	-0.74
	0.06	*0.04*	*0.07*	*0.08*	*0.09*	*0.09*	*0.09*	*0.08*	*0.07*	*0.08*	*0.10*	*0.11*	*0.11*	*0.12*	*0.05*
P(CM) / P(Aggregate)	0.06	0.04	0.14	-0.17	0.08	0.13	0.20	0.29	0.35	-0.06	-0.07	-0.07	-0.07	-0.07	0.82
	0.00	*0.00*	*0.07*	*0.08*	*0.09*	*0.08*	*0.08*	*0.08*	*0.07*	*0.08*	*0.08*	*0.08*	*0.08*	*0.08*	*0.02*

Correlation of Velocity and Nominal Interest Rate	0.417
	0.09