APPENDIX F

TABLES OF NUMERICAL EXAMPLES' RESULTS

Table F1

Change in α_1 and α_2

α_2		α_1 = 0.1		0.2		0.3		0.4		0.5	
		p	change α_1	p	change α_1	p	change α_1	p	change α_1	p	change α_1
0.5	p	0.1135		0.2143	1.008	0.3664	1.521	0.6024		-	
	change α_2	1.0061		1.6574	6.513	2.3252	6.678	2.0473		-	
0.6	p	0.0195		0.0497	0.302	0.1151	0.654	0.2459	1.308	0.4978	2.519
	change α_2	0.9304	-0.94	1.3692	4.388	1.9569	5.877	2.2493	2.924	1.8545	-3.948
			-0.757		-1.646		-2.513		-3.565		
					-2.882		-3.683		2.02		
0.7	p	0.0009		0.0034	0.025	0.0119	0.085	0.0395	0.276	0.1224	0.829
	change α_2	0.8835	-0.186	1.2056	3.221	1.6481	4.425	2.0643	4.162	2.1208	0.565
			-0.469		-0.463		-1.032		-2.064		-3.754
					-1.636		-3.088		-1.85		2.663
0.8	p	0		0	0	0.0001	0.001	0.0006	0.005	0.0041	0.035
	change α_2	0.8493	-0.009	1.1015	2.522	1.4387	3.372	1.8155	3.768	2.062	2.465
			-0.342		-0.034		-0.118		-0.389		-1.183
					-1.041		-2.094		-2.488		-0.588
0.9	p	0		0	0	0	0	0	0	0	0
	change α_2	0.8202	0	1.0258	2.056	1.2917	2.659	1.6037	3.12	1.8866	2.829
			-0.291		0		-0.001		-0.006		-0.041
					-0.757		-1.47		-2.118		-1.754

α_3=0.5, β^N = 0.8, β^S = 0.9, n^N =0.02, n^S =0.04, η^N =0.4, η^S =0.6

Table F2

Change in α_3

α_3		alpha1=0.2,alpha2=0.7 p	alpha1=0.4,alpha2=0.8 p
0.1	p	0.0053 20.0684	0.001 9.1686
	change alpha3		
0.2	p	0.0056 7.6077	0.001 5.0668
	change alpha3	0.003 -124.607	0 -41.018
0.3	p	0.0056 3.4413	0.001 3.2716
	change alpha3	0 -41.664	0 -17.952
0.4	p	0.0055 1.7409	0.001 2.2533
	change alpha3	-0.001 -17.004	0 -10.183
0.5	p	0.0053 1.0882	0.001 1.6526
	change alpha3	-0.002 -6.527	0 -6.007
0.6	p	0.0051 0.8441	0.001 1.3236
	change alpha3	-0.002 -2.441	0 -3.29
0.7	p	0.0049 0.7635	0.0009 1.1682
	change alpha3	-0.002 -0.806	-0.001 -1.554
0.8	p	0.0049 0.7671	0.0009 1.125
	change alpha3	0 0.036	0 -0.432
0.9	p	0.0048 0.8382	0.0009 1.1717
	change alpha3	-0.001 0.711	0 0.467

$\beta^N = 0.7,\ \beta^S = 0.9,\ n^N = 0.02,\ n^S = 0.04,\ \eta^N = 0.4,\ \eta^S = 0.6$

Table F3.1

Change in β^N and β^S with η^N and η^S =0.5

β^N		β^S 0.5		0.6		0.7		0.8		0.9	
		p	change beta_S	p	change beta_S	p	change beta_S	p	change beta_S	p	change beta_S
0.3	p	0.0624		0.049	-0.134	0.0387	-0.103	0.0303	-0.084	0.0235	-0.068
		0.3959		0.458	0.621	0.5216	0.636	0.5886	0.67	0.6607	0.721
	change in beta_N										
0.4	p	0.0493		0.0389	-0.104	0.0305	-0.084	0.0236	-0.069	0.018	-0.056
		0.4567		0.5203	0.636	0.5872	0.669	0.6591	0.719	0.738	0.789
	change in beta_N		-0.131		-0.101		-0.082		-0.067		-0.055
			0.608		0.623		0.656		0.705		0.773
0.5	p	0.039		0.0306	-0.084	0.0238	-0.068	0.0181	-0.057	0.0133	-0.048
		0.5189		0.5858	0.669	0.6576	0.718	0.7363	0.787	0.8242	0.879
	change in beta_N		-0.103		-0.083		-0.067		-0.055		-0.047
			0.622		0.655		0.704		0.772		0.862
0.6	p	0.0308		0.0239	-0.069	0.0182	-0.057	0.0134	-0.048	0.0095	-0.039
		0.5844		0.6561	0.717	0.7346	0.785	0.8223	0.877	0.9224	1.001
	change in beta_N		-0.082		-0.067		-0.056		-0.047		-0.038
			0.655		0.703		0.77		0.86		0.982
0.7	p	0.024		0.0183	-0.057	0.0135	-0.048	0.0096	-0.039	0.0063	-0.033
		0.6545		0.7329	0.784	0.8204	0.875	0.9202	0.998	1.0369	1.167
	change in beta_N		-0.068		-0.056		-0.047		-0.038		-0.032
			0.701		0.768		0.858		0.979		1.145

$\alpha_1 = 0.2,\ \alpha_2 = 0.7,\ \alpha_3$=0.5, n^N =0.02, n^S =0.04, η^N =0.5, η^S =0.5

Given beta N, beta S increases → p-steady state with small value decreases,
p-steady state with larger value increases
Given beta S, beta N increases → p-steady state with small value decreases,
p-steady state with larger value increases

Table F3.2

Change in β^N and β^S with η^N =0.4 and η^S =0.6

β^N		β^S = 0.5		0.6		0.7		0.8		0.9	
		p	change beta_S	p	change beta_S	p	change beta_S	p	change beta_S	p	change beta_S
0.3	p	0.057 0.4189		0.0428 0.494	-0.142 0.751	0.0321 0.5729	-0.107 0.789	0.0237 0.6585	-0.084 0.856	0.017 0.7541	-0.067 0.956
	change in beta_N										
0.4	p	0.0473 0.4677		0.0355 0.5449	-0.118 0.772	0.0264 0.6279	-0.091 0.83	0.0191 0.7196	-0.073 0.917	0.0133 0.8238	-0.058 1.042
	change in beta_N		-0.097 0.488		-0.073 0.509		-0.057 0.55		-0.046 0.611		-0.037 0.697
0.5	p	0.0392 0.5176		0.0293 0.5982	-0.099 0.806	0.0215 0.6866	-0.078 0.884	0.0152 0.786	-0.063 0.994	0.0102 0.9012	-0.05 1.152
	change in beta_N		-0.081 0.499		-0.062 0.533		-0.049 0.587		-0.039 0.664		-0.031 0.774
0.6	p	0.0325 0.5696		0.024 0.6549	-0.085 0.853	0.0172 0.75	-0.068 0.951	0.0118 0.859	-0.054 1.09	0.0075 0.9882	-0.043 1.292
	change in beta_N		-0.067 0.52		-0.053 0.567		-0.043 0.634		-0.034 0.73		-0.027 0.87
0.7	p	0.0267 0.6243		0.0194 0.7156	-0.073 0.913	0.0136 0.8193	-0.058 1.037	0.0089 0.9406	-0.047 1.213	0.0053 1.0882	-0.036 1.476
	change in beta_N		-0.058 0.547		-0.046 0.607		-0.036 0.693		-0.029 0.816		-0.022 1

α_1 = 0.2, α_2 = 0.7, α_3=0.5, n^N =0.02, n^S =0.04, η^N =0.4, η^S =0.6

Given beta N, beta S increases → p-steady state with small value decreases,
p-steady state with larger value increases
Given beta S, beta N increases → p-steady state with small value decreases,
p-steady state with larger value increases

Table F3.3

Change in β^N and Comparison with different η^N and η^S

		η^N = 0.5, η^S = 0.5		η^N = 0.4, η^S = 0.6		η^N = 0.3, η^S = 0.7	
	β^S	0.9		0.9		0.9	
β^N		p	change beta_S	p	change beta_S	p	change beta_S
0.3	p	0.0235 0.6607	-0.068 0.721	0.017 0.7541	-0.067 0.956	0.0117 0.861	-0.065 1.26
	change in beta_N			*-0.0065* *0.0934*		*-0.0053* *0.1069*	
0.4	p	0.018 0.738	-0.056 0.789	0.0133 0.8238	-0.058 1.042	0.0095 0.9215	-0.058 1.363
	change in beta_N		-0.055 0.773	*-0.0047* *0.0858*	-0.037 0.697	*-0.0038* *0.0977*	-0.022 0.605
0.5	p	0.0133 0.8242	-0.048 0.879	0.0102 0.9012	-0.05 1.152	0.0075 0.9878	-0.052 1.485
	change in beta_N		-0.047 0.862	*-0.0031* *0.077*	-0.031 0.774	*-0.0027* *0.0866*	-0.02 0.663
0.6	p	0.0095 0.9224	-0.039 1.001	0.0075 0.9882	-0.043 1.292	0.0058 1.0612	-0.045 1.634
	change in beta_N		-0.038 0.982	*-0.002* *0.0658*	-0.027 0.87	*-0.0017* *0.073*	-0.017 0.734
0.7	p	0.0063 1.0369	-0.033 1.167	0.0053 1.0882	-0.036 1.476	0.0043 1.1437	-0.04 1.82
	change in beta_N		-0.032 1.145	*-0.001* *0.0513*	-0.022 1	*-0.001* *0.0555*	-0.015 0.825

$\alpha_1 = 0.2,\ \alpha_2 = 0.7,\ \alpha_3 = 0.5,\ n^N = 0.02,\ n^S = 0.04$

Table F3.4

Change in β^N and β^S, and Comparison of price at steady state with different η^N and η^S

β^N	β^S	0.5		0.6		0.7		0.8		0.9	
	η^N	0.4	0.3	0.4	0.3	0.4	0.3	0.4	0.3	0.4	0.3
	η^S	0.6	0.7	0.6	0.7	0.6	0.7	0.6	0.7	0.6	0.7
0.3	p	0.057	0.0521	0.0428	0.0374	0.0321	0.0265	0.0237	0.0182	0.017	0.0117
		0.4189	0.442	0.494	0.5309	0.5729	0.627	0.6585	0.735	0.7541	0.861
	change in p	*-0.0054*	*-0.0049*	*-0.0062*	*-0.0054*	*-0.0066*	*-0.0056*	*-0.0066*	*-0.0055*	*-0.0065*	*-0.0053*
		0.023	*0.0231*	*0.036*	*0.0369*	*0.0513*	*0.0541*	*0.0699*	*0.0765*	*0.0934*	*0.1069*
0.4	p	0.0473	0.0453	0.0355	0.0324	0.0264	0.0227	0.0191	0.0153	0.0133	0.0095
		0.4677	0.4787	0.5449	0.5701	0.6279	0.6705	0.7196	0.7852	0.8238	0.9215
	change in p	*-0.002*	*-0.002*	*-0.0034*	*-0.0031*	*-0.0041*	*-0.0037*	*-0.0045*	*-0.0038*	*-0.0047*	*-0.0038*
		0.011	*0.011*	*0.0246*	*0.0252*	*0.0407*	*0.0426*	*0.0605*	*0.0656*	*0.0858*	*0.0977*
0.5	p	0.0392	0.0394	0.0293	0.028	0.0215	0.0193	0.0152	0.0127	0.0102	0.0075
		0.5176	0.5163	0.5982	0.6109	0.6866	0.7166	0.786	0.8393	0.9012	0.9878
	change in p	*0.0002*	*0.0002*	*-0.0013*	*-0.0013*	*-0.0023*	*-0.0022*	*-0.0029*	*-0.0025*	*-0.0031*	*-0.0027*
		-0.0013	*-0.0013*	*0.0124*	*0.0127*	*0.029*	*0.03*	*0.0497*	*0.0533*	*0.077*	*0.0866*
0.6	p	0.0325	0.0342	0.024	0.0241	0.0172	0.0163	0.0118	0.0103	0.0075	0.0058
		0.5696	0.555	0.6549	0.6536	0.75	0.7656	0.859	0.8978	0.9882	1.0612
	change in p	*0.0017*	*0.0017*	*0.0001*	*0.0001*	*-0.001*	*-0.0009*	*-0.0016*	*-0.0015*	*-0.002*	*-0.0017*
		-0.0148	*-0.0146*	*-0.0012*	*-0.0013*	*0.0154*	*0.0156*	*0.0367*	*0.0388*	*0.0658*	*0.073*
0.7	p	0.0267	0.0296	0.0194	0.0206	0.0136	0.0136	0.0089	0.0083	0.0053	0.0043
		0.6243	0.5951	0.7156	0.6987	0.8193	0.8181	0.9406	0.9617	1.0882	1.1437
	change in p	*0.0027*	*0.0029*	*0.0011*	*0.0012*	*0.0001*	*0*	*-0.0007*	*-0.0006*	*-0.001*	*-0.001*
		-0.0302	*-0.0292*	*-0.0173*	*-0.0169*	*-0.0011*	*-0.0012*	*0.0204*	*0.0211*	*0.0513*	*0.0555*

$\alpha_1 = 0.2,\ \alpha_2 = 0.7,\ \alpha_3 = 0.5,\ n^N = 0.02,\ n^S = 0.04$

Table F4

Change in n^N and n^S

n^S		n^N = 0.01		0.02		0.03		0.04		0.05	
		p	change n^N	p	change n^N	p	change n^N	p	change n^N	p	change n^N
0.03	p	0.0029		0.003	0.01	0.003	0	0.003	0	0.003	0
		1.2423		1.2403	-0.2	1.2382	-0.21	1.2361	-0.21	1.2339	-0.22
	change n^S										
0.04	p	0.003		0.003	0	0.003	0	0.003	0	0.0031	0.01
		1.2398		1.2378	-0.2	1.2357	-0.21	1.2336	-0.21	1.2314	-0.22
	change n^S		0.01		0		0		0		0.01
			-0.25		-0.25		-0.25		-0.25		-0.25
0.05	p	0.003		0.003	0	0.003	0	0.0031	0.01	0.0031	0
		1.2373		1.2353	-0.2	1.2332	-0.21	1.2311	-0.21	1.2289	-0.22
	change n^S		0		0		0		0.01		0
			-0.25		-0.25		-0.25		-0.25		-0.25
0.06	p	0.003		0.003	0	0.0031	0.01	0.0031	0	0.0031	0
		1.2347		1.2327	-0.2	1.2306	-0.21	1.2285	-0.21	1.2264	-0.21
	change n^S		0		0		0.01		0		0
			-0.26		-0.26		-0.26		-0.26		-0.25
0.07	p	0.0031		0.0031	0	0.0031	0	0.0031	0	0.0032	0.01
		1.2321		1.2301	-0.2	1.228	-0.21	1.2259	-0.21	1.2238	-0.21
	change n^S		0.01		0.01		0		0		0.01
			-0.26		-0.26		-0.26		-0.26		-0.26
0.08	p	0.0031		0.0031	0	0.0031	0	0.0032	0.01	0.0032	0
		1.2294		1.2274	-0.2	1.2254	-0.2	1.2233	-0.21	1.2212	-0.21
	change n^S		0		0		0		0.01		0
			-0.27		-0.27		-0.26		-0.26		-0.26

$\alpha_1 = 0.2,\ \alpha_2 = 0.7,\ \alpha_3 = 0.5,\ \beta^N = 0.8,\ \beta^S = 0.9,\ \eta^N = 0.3,\ \eta^S = 0.7$

Given n^S, n^N increases → p-steady state with small value slightly increases,
p-steady state with larger value decreases

Given n^N, n^S increases → p-steady state with small value slightly increases,
p-steady state with larger value decreases