

The foundation of modern Japanese economic structure was laid on the Meiji Revolution (1867-68). The Japanese have interpreted this theme of building a Western-standard modern state in a material-physical, and not a spiritual, sense. As the phrase *wakon yosai* (Japanese spirit with Western ability) indicates, the reaction has been an intense rejection of Western spiritual ideas. The Japanese have ardently desired to retain their culture, their way of life, the specific relationship between superior and inferior, and their family structure, yet simultaneously to build a modern nation endowed with power that is comparable to that of Western countries. The question is how long will this externally westernized and internally non-western state last.

The duality of Japan's economic structure reigns not only in the export vs. import sectors but also in the individual's choice of the entire group's welfare vs. his own self-interest. The Japanese spirit that has long been nurtured by Confucianism, Taoism, Buddhism, Shinto and her own historical conditions bring forth a conspicuous Japanese ethos that is always ready to sacrifice an individual's interest (or internal sector) in exchange for the benefit of the company or nation (or external sector). Based on the model developed in the preceding sections, I simulate Japan's economy by assuming a highly aligned cooperative attitude between the two individuals. The cooperation coefficients for person A and person B are $\eta^A = 0.51$ & $\eta^B = 0.49$, respectively. Using the same initial values for other parameters as those in the basic scenario (see Table 1), I derive the Figure 5 as follows:

It is shown in the figure that due to the closeness of cooperation attitudes among the individuals, the Japan's economy had been elevated to a high plateau for quite a long period. After enjoying around 10 harmonious periods, the disparity of the cooperative spirit was getting wider and became unsustainable after period 20. It mirrors the history of Japan's economic performance. Since the Meiji revolution Japan has changed her economic doctrine from the *sakoku* (isolation and closure of the country) to the *kaikoku* (open her door to the foreign countries). Endowed with the strongly-held national ethos the economy exhibits an insurmountable prowess and resilience, helping Japan become the second largest economy in the world. However, this so-called Japanese spirit has undergone an intensified turbulence since the 1980s. The thrust of the Western individualism through the flow of international trade, investment and most importantly the mass media has greatly shaken her spiritual fortress, i.e., the unconditional cooperation and loyalty to the company and the nation. Unless Japan encounters another shock like the debacle in the World War or the

stimulus of the Meiji restoration so as to rev up her strong sense of cooperativeness, her economic strength will subside gradually.

The worsening of an individual's cooperativeness in the corporation can be exemplified by the withdrawal of regular employment from big enterprises to small ones. Another indicator is the divergence of compensation to management and non-management employees. The data about the size of enterprises can be found in the Establishment and Enterprise Census by Japan. This census started in 1948 and had been repeated every three years until 1981. The interval became five years thereafter. As for the data of employee compensation, it is provided by the survey conducted every year by the Ministry of Finance. Both data sets are covered in the Japan Statistical Yearbooks.

Table 5 depicts a steady increase in the percentage of small enterprises, especially of those with regular employees under 4 persons. After 1990 these small (four and under) enterprises have exceeded one half of the total establishments. On the contrary, the big enterprises (especially for those with employees over 2,000) have shown a decline (though not so significant) in their percentage share of the total establishments. The last row of Table 5, the percentage difference between the smallest establishments (i.e., the "four and under") and the biggest establishments (i.e., the "2000 and over"), is calculated to capture the degree of diminution in the size of corporation. It unambiguously manifests the general diminishing trend in the size of the Japanese enterprises. As for the compensation difference between management and non-management employees, Table 6 shows a big shrink in the 1980s but a lift again in 1990s. The enlarged compensation gap between management and non-management employees from 1980s to 1990s would more or less trigger disgruntlement and uncooperative attitudes among non-management employees especially when the economy was getting sour in the 1990s.

I attempt to use these two factors (diminishing enterprise size and enlarged compensation gap) to explain the relative performance of Japan's economy compared with the rest of the world. The latter can be measured by subtracting the U.S.'s GDP growth rate from the Japan's growth rate. Based on the statistical data from the United Nations, I calculate the relative performance of Japan's economy as follows:

It is noted that one year delay between Table 7 and Tables 5 & 6 is considered to account for the causality effect of the above two cooperation-lessening factors on the relative economic performance. The correlation matrix among the percentage

difference between small and big enterprises, the ratio of compensation to management vs. non-management, and the relative performance of Japan's economy vs. U.S. (i.e., the last row in Table 5, 6 and 7 respectively) is shown in Table 8:

The negative correlation between the size-diminishing factor (row 2) and the Japan's relative economic performance (row 1) or between the deteriorating compensation disparity (row 3) and the Japan's relative economic performance (row 1) reflects a non-negligible impact of employee's cooperation attitude on the general performance of an enterprise. The wider disparity in cooperation effort (as measured by the compensation ratio) and the lesser willingness to cooperate (as measured by the increase of small enterprises relative to big ones) will both lead to the decline of Japan's relative economic performance.

I have also run the regression of Japan's relative economic performance with one year lag (i.e., row 1 in Table 8) on the percentage difference between small and big enterprises (i.e., row 2 in Table 8) and the per capita compensation ratio between management and non-management employee (i.e., row 3 in Table 8) from 1971 to 2002. Since the census data about the distribution of incorporated enterprises is only available every three or five years, I have estimated the number of establishments for different sizes of enterprises for the remaining years by interpolating between two adjacent census years. The regression results are as follows:

The regression above highlights the important role played by the big enterprises in maneuvering Japan's economic performance in the past three decades. When the Japanese individuals change their mentality to pursue their own (and relative small) business, their economic prowess will gradually subside. The slightly worsening in the compensation disparity between management and non-management employees has a negative (but not significant) impact on the overall economy.

The miracle of Japan's spectacular economic success prior to 1991 has been challenged by the subsequent one-decade long stagnation. Should Japan continue adhering to and revitalizing her *wakon yosai* doctrine or gradually abandon her own spiritual ideas and allow the Western spirit (more weight on the individual self-interest) to fill in the vacuum of her mind? It is the central issue that underlies the heated debate of the recent Japanese economic reform.

6. Discussion and Conclusion

This study endogenizes an individual's willingness to cooperate with others through the direct impact on his utility function. By adapting the Ricardian production function to incorporate the impact of cooperativeness in a team and the individual's output share, this model presents a framework to resolve the optimal degree of altruism for each individual. At the beginning of the teamwork, everyone has an incentive to raise the weight of his utility that is associated with the other's wellbeing. The increased concern with the latter's output share in the team will drive him to work harder for an entire team and contribute to an improvement of his productivity in the organization, which will benefit himself and his team partner as well. The formation of a cooperation cycle is primarily due to the nature of human behavior as expounded by the prospect theory. The resulting utility enhancement after his initial elevation of cooperativeness will raise his reference point and render it more difficult to further improve his utility level, dampening the incentive to cooperate in the subsequent periods.

An important implication of this study is that except for the perfect alignment of cooperativeness among its constituents, all the cooperation cycles are irregular and lead to a widening divergence of cooperation attitudes and the breakdown of the entire organization eventually. This outcome is analogous to the synchronization behavior of two coupled oscillators. Unless the initial frequencies of the two oscillators are close enough, the coupling of two distinct oscillators will easily end up a chaotic cycle when confronting a nonlinear interaction between the two. However, the system provides a striking self-fulfilling force to align the two interacting entities and generate a great synergy when these two entities are close enough in their initial conditions (i.e., frequency in the oscillator case and cooperation attitude in this study).

The relationship between capitalists and laborers captivates the enduring academic interests in social sciences, especially in economics, and politics. Despite the uncontested influence of Marxism in the mid twentieth century and its rapid and undignified exit from history after the fall of the Berlin Wall in 1989, the collapse of the Soviet Union in 1992 and the extinction of communist parties everywhere outside China and Cuba, the questions raised in the classic book *The Communist Manifesto* (1848) still cannot completely be erased even when we have started a new millennium and have witnessed endless chatter about globalization and deregulation. The inherent natures of the modern economic organizations that continue inventing new needs and the means to satisfy one group of constituents (capitalists) more than the others

(workers) and subverting all inherited cultural practices and beliefs into an object for sale can not escape the eventual destabilization outcome unless capitalists and laborers can collaborate unconditionally and align their cooperativeness perfectly.

In the beginning, any organization will provide noticeable benefit to all its constituents due to the exploitation of comparative advantage for each individual. However, unless there is perfect alignment in cooperativeness, the widening divergence of benefit and cooperation attitude among its members will challenge the stability of the organization and trigger the inevitable collapse in the end. Therefore, the cultivation of a common cooperation attitude among its members at the inception is very crucial for the persistent prosperity of an organization. We can witness the success of the Japanese economy in the last century as an evidence of this proposition. A strongly-held national ethos that took root in Japan by the influence of Confucianism, Taoism and Buddhism helps her rise swiftly to the status of a first-rate power following the Meiji Revolution after 1867 (Michio Morishima, 1982). This consensus of complete loyalty to the firm and to the state as transformed by the ethical doctrines plays a critical role in the creation of Japan's economic success. Of course we cast a reasonable doubt about the continuation of this Japan ethos once she is more receptive to liberalism and individualism in the Western societies.

This study points out a caveat on the instability of an international organization. Japan's past economic success was built on her extraordinary congealing force nurtured in the fertile cultural background. However, the international organizations such as the United Nation or WTO were established by the countries with diverse cultural backgrounds. Despite the early success in meeting their original goals, the enlarged disparity of economic or political benefit among their member countries will bring the organizations into a collapse unless some measure of the realignment of common goal for its participants is seriously taken. The recent surge of regional economic agreements among the countries with similar economic or cultural background seems relatively encouraging. Nevertheless, we should not be too sanguine about the prospect of these agreements if the member countries could not tolerate and accommodate the cultural shock from other countries even though the distinction might be nominal.

References

Amyx, Jennifer. 2005. "Reforming Government-Backed Financial Institutions: The Battle for Postal Savings Reform in Japan," *East Asian Economic Perspectives*, 16(2), 1-21.

Economic Planning Agency (EPA), Government of Japan, 1996. *Structural Reform in Six Areas: The Summary of the Recommendation of the Economic Council*. Tokyo: Economic Planning Agency.

Kahneman, D. and A. Tversky. 1979. "Prospect Theory: An Analysis of Decision under Risk," *Econometrica*, 47(2), 263-91.

Katz, Richard. 1998. *Japan: The System That Soured*. Armonk, New York: M. E. Sharpe, Inc.

Marx, K. and F. Engels. 1848. *The Communist Manifesto*.

Morishima, Michio. 1982. *Why Has Japan 'Succeeded'?* Cambridge University Press.

North, Douglass C. 2005. *Understanding the Process of Economic Change*. Princeton University Press.

Pikovsky, A., M. Rosenblum, and J. Kurths. 2001. *Synchronization: A universal concept in nonlinear sciences*. Cambridge University Press.

Yamamura, Kozo. 1997. "Entrepreneurship, Ownership and Management in Japan." In *The Economic Emergence of Modern Japan*. Ed. Kozo Yamamura. Cambridge University Press.

Table 1: Simulation of Cyclical Cooperation - basic scenario

<i>Basic Assumptions:</i>									
	β	0.5			η_0^A	0.75		η_0^B	0.25
	γ	1			$\alpha_X^A(0)$	0.8		$\alpha_X^B(0)$	0.2
	δ	0.9			$\alpha_Y^A(0)$	0.2		$\alpha_Y^B(0)$	0.8
Time Period (t):	0	1	2	3	4	5	6	7	8
$\alpha_X^A(t)$	0.8	0.571	0.591	0.608	0.466	0.634	0.921	0.795	0.268
$\alpha_Y^A(t)$	0.2	0.143	0.148	0.152	0.117	0.158	0.23	0.199	0.067
$\alpha_X^B(t)$	0.2	0.12	0.113	0.237	0.235	0.248	0.059	0.347	0.252
$\alpha_Y^B(t)$	0.8	0.48	0.452	0.948	0.94	0.993	0.237	1.39	1.007
S_t^A	0.5	0.5	0.543	0.567	0.391	0.332	0.389	0.795	0.364
S_t^B	0.5	0.5	0.457	0.433	0.609	0.668	0.611	0.205	0.636
$dS_t^A / d\alpha_X^A(t-1)$		0.313	0.434	0.415	0.392	0.476	0.375	0.177	0.291
$dS_t^A / d\alpha_Y^A(t-1)$		1.25	1.737	1.661	1.566	1.902	1.501	0.708	1.164
$dS_t^B / d\alpha_X^B(t-1)$		1.25	2.068	2.172	1.005	0.943	0.957	2.746	0.666
$dS_t^B / d\alpha_Y^B(t-1)$		0.313	0.517	0.543	0.251	0.236	0.239	0.687	0.167
$\alpha_{X\eta}^A(t) = \alpha_{XS}^A(t)$		0.457	0.457	0.457	0.457	0.457	0.457	0.457	0.457
$\alpha_{Y\eta}^A(t) = \alpha_{YS}^A(t)$		0.114	0.114	0.114	0.114	0.114	0.114	0.114	0.114
$\alpha_{X\eta}^B(t) = \alpha_{XS}^B(t)$		0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
$\alpha_{Y\eta}^B(t) = \alpha_{YS}^B(t)$		0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64
η_{t+1}^A	0.75	0.75	0.763	0.629	1.054	1.625	0.945	0.222	-0.88
η_{t+1}^B	0.25	0.25	1.048	0.859	0.884	-0.24	1.967	0.938	4.321
PV{ $U^A(t)$ }		-0.34	0.6	1.952	2.927	4.404	5.027	5.54	6.458
PV{ $U^B(t)$ }		-0.34	0.6	2.169	2.71	3.746	4.854	8.132	6.369
Total utility_A (join)	26.57			Total utility_A (disjoin)			23.12		
Total utility_B (join)	28.24			Total utility_B (disjoin)			23.12		

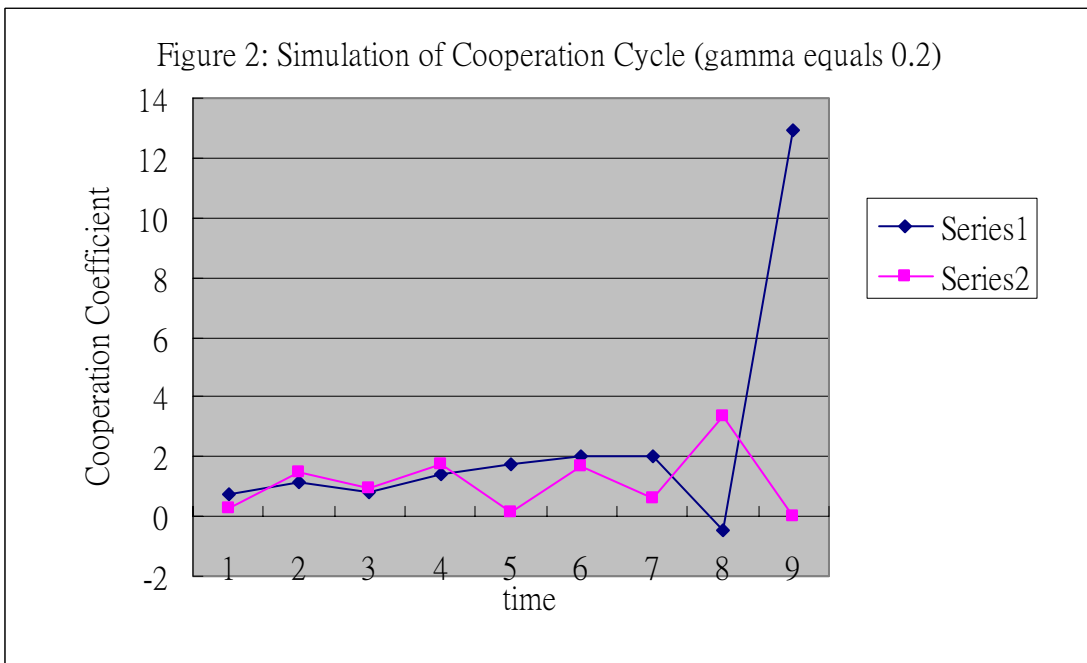
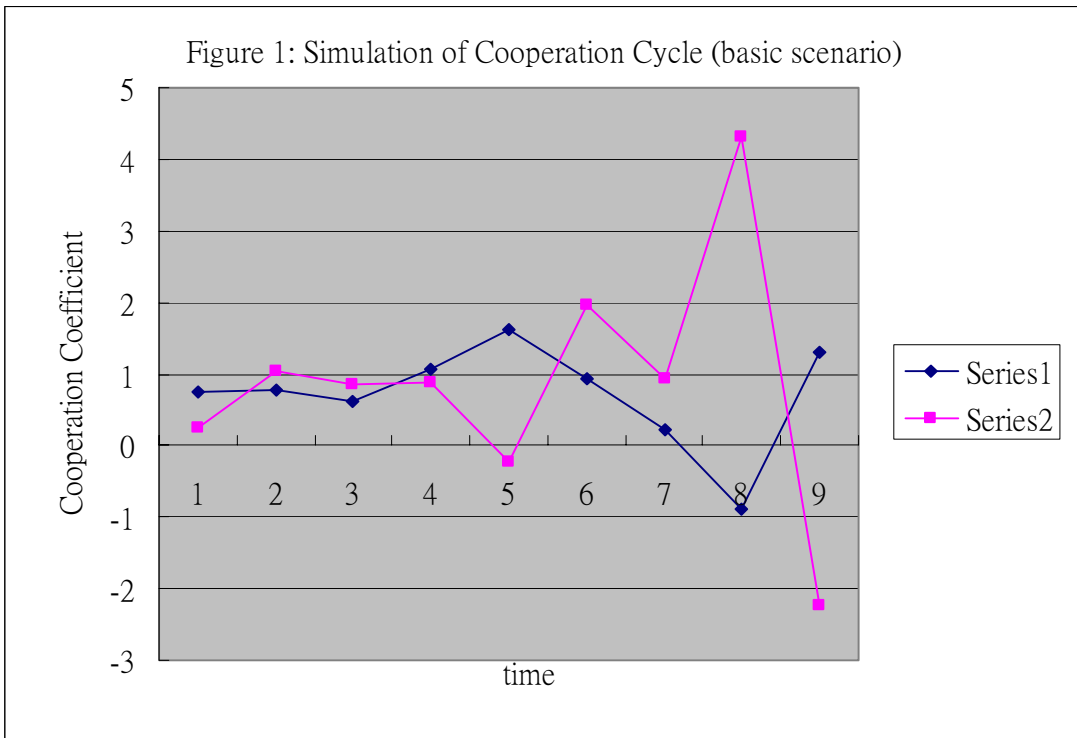


Table 2: Simulation of Cyclical Cooperation - more weight on present absolute utility										
<i>Basic Assumptions:</i>		β	0.5		η_0^A	0.75		η_0^B	0.25	
		γ	0.2		$\alpha_X^A(0)$	0.8		$\alpha_X^B(0)$	0.2	
		δ	0.9		$\alpha_Y^A(0)$	0.2		$\alpha_Y^B(0)$	0.8	
Time Period (t):	0	1	2	3	4	5	6	7	8	9
$\alpha_X^A(t)$	0.8	0.571	0.591	0.785	0.563	0.796	0.968	1.213	1.131	0.079
$\alpha_Y^A(t)$	0.2	0.143	0.148	0.196	0.141	0.199	0.242	0.303	0.283	0.02
$\alpha_X^B(t)$	0.2	0.12	0.113	0.305	0.252	0.381	0.132	0.324	0.177	0.598
$\alpha_Y^B(t)$	0.8	0.48	0.452	1.22	1.008	1.523	0.528	1.297	0.709	2.391
S_t^A	0.5	0.5	0.543	0.567	0.392	0.358	0.343	0.647	0.483	0.615
S_t^B	0.5	0.5	0.457	0.433	0.608	0.642	0.657	0.353	0.517	0.385
$dS_t^A / d\alpha_X^A(t-1)$		0.313	0.434	0.415	0.304	0.408	0.283	0.236	0.206	0.209
$dS_t^A / d\alpha_Y^A(t-1)$		1.25	1.737	1.661	1.214	1.633	1.132	0.944	0.823	0.837
$dS_t^B / d\alpha_X^B(t-1)$		1.25	2.068	2.172	0.781	0.912	0.592	1.73	0.77	1.337
$dS_t^B(t) / d\alpha_Y^B(t-1)$		0.313	0.517	0.543	0.195	0.228	0.148	0.432	0.192	0.334
$\alpha_{Xn}^A(t) = \alpha_{XS}^A(t)$		0.457	0.457	0.457	0.457	0.457	0.457	0.457	0.457	0.457
$\alpha_{Yn}^A(t) = \alpha_{YS}^A(t)$		0.114	0.114	0.114	0.114	0.114	0.114	0.114	0.114	0.114
$\alpha_{Xn}^B(t) = \alpha_{XS}^B(t)$		0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
$\alpha_{Yn}^B(t) = \alpha_{YS}^B(t)$		0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64
η_{t+1}^A	0.75	0.75	1.15	0.84	1.384	1.773	2.007	1.991	-0.44	12.95
η_{t+1}^B	0.25	0.25	1.472	0.967	1.738	0.169	1.674	0.591	3.351	0.009
PV{ $U^A(t)$ }		-1.14	-1	-0.3	-0.05	0.877	0.945	-0.02	0.896	0.685
PV{ $U^B(t)$ }		-1.14	-1	0.137	-0.41	-0.36	0.334	1.599	0.79	1.577
Total util_A(join)	0.891			Total util_B (disjoin)			-5.48			
Total util_B(join)	1.531			Total util_B (disjoin)			-5.48			

Table 3: Simulation of Cyclical Cooperation - small difference in cooperation attitude										
<i>Basic Assumptions:</i>		β	0.5		η_0^A	0.55		η_0^B	0.45	
		γ	1		$\alpha_X^A(0)$	0.8		$\alpha_X^B(0)$	0.2	
		δ	0.9		$\alpha_Y^A(0)$	0.2		$\alpha_Y^B(0)$	0.8	
Time Period (t):	0	1	2	3	4	5	6	7	8	9
$\alpha_X^A(t)$	0.8	0.542	0.546	0.716	0.641	0.733	0.782	0.763	0.671	0.552
$\alpha_Y^A(t)$	0.2	0.135	0.137	0.179	0.16	0.183	0.195	0.191	0.168	0.138
$\alpha_X^B(t)$	0.2	0.131	0.13	0.195	0.183	0.2	0.164	0.191	0.199	0.241
$\alpha_Y^B(t)$	0.8	0.524	0.52	0.78	0.732	0.802	0.656	0.763	0.795	0.963
S_t^A	0.5	0.5	0.508	0.513	0.478	0.467	0.478	0.544	0.5	0.458
S_t^B	0.5	0.5	0.492	0.487	0.522	0.533	0.522	0.456	0.5	0.542
$dS_t^A / d\alpha_X^A(t-1)$		0.313	0.461	0.457	0.349	0.389	0.34	0.317	0.328	0.37
$dS_t^A / d\alpha_Y^A(t-1)$		1.25	1.845	1.83	1.395	1.554	1.361	1.269	1.31	1.48
$dS_t^B / d\alpha_X^B(t-1)$		1.25	1.907	1.924	1.279	1.36	1.245	1.512	1.31	1.249
$dS_t^B / d\alpha_Y^B(t-1)$		0.313	0.477	0.481	0.32	0.34	0.311	0.378	0.328	0.312
$\alpha_{Xn}^A(t) = \alpha_{XS}^A(t)$		0.516	0.516	0.516	0.516	0.516	0.516	0.516	0.516	0.516
$\alpha_{Yn}^A(t) = \alpha_{YS}^A(t)$		0.129	0.129	0.129	0.129	0.129	0.129	0.129	0.129	0.129
$\alpha_{Xn}^B(t) = \alpha_{XS}^B(t)$		0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138
$\alpha_{Yn}^B(t) = \alpha_{YS}^B(t)$		0.552	0.552	0.552	0.552	0.552	0.552	0.552	0.552	0.552
η_{t+1}^A	0.55	0.55	0.874	0.763	0.954	1.037	0.935	0.8	0.613	1.278
η_{t+1}^B	0.45	0.45	0.927	0.805	0.919	0.667	0.927	0.941	1.204	0.515
PV $\{U^A(t)\}$		-0.32	0.675	1.996	2.95	4.1	5.02	5.957	6.993	8.007
PV $\{U^B(t)\}$		-0.32	0.675	2.036	2.901	3.983	4.957	6.108	6.992	7.868
Total util_A (join)	35.37			Total util_A (disjoin)			30.52			
Total util_B (join)	35.2			Total util_B (disjoin)			30.52			

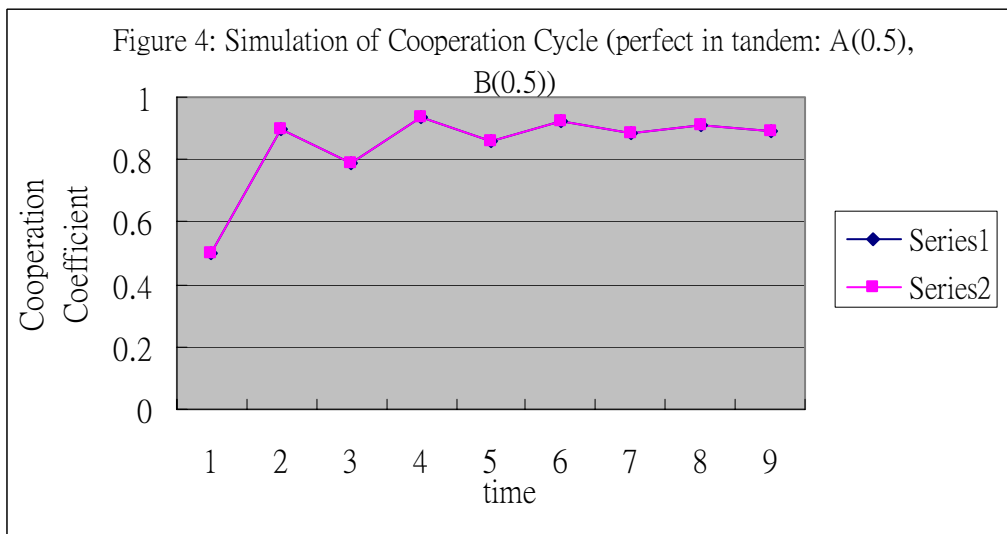
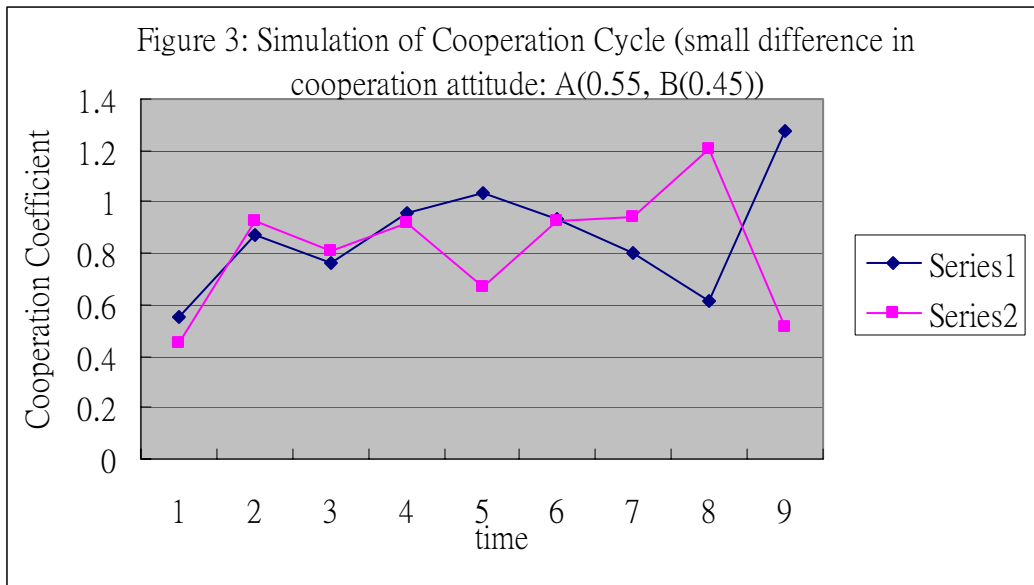


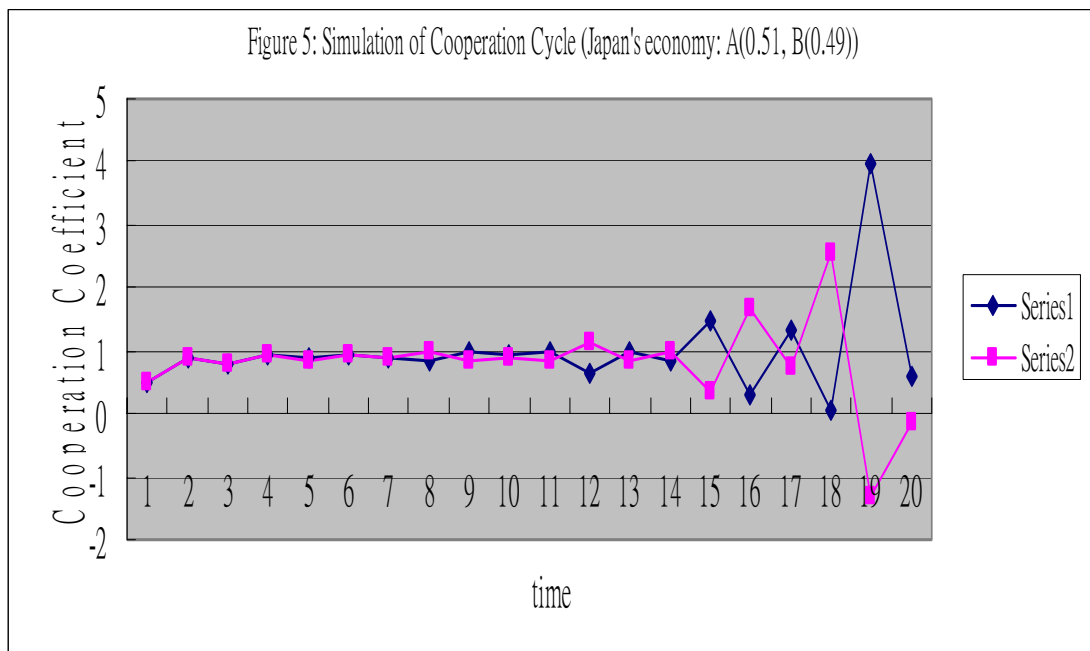
Table 4: Simulation of Cyclical Cooperation - perfectly in tandem

<i>Basic Assumptions:</i>										
	β	0.5		η_0^A	0.5		η_0^B	0.5		
	γ	1		$\alpha_X^A(0)$	0.8		$\alpha_X^B(0)$	0.2		
	δ	0.9		$\alpha_Y^A(0)$	0.2		$\alpha_Y^B(0)$	0.8		
Time Period (t):	0	1	2	3	4	5	6	7	8	9
$\alpha_X^A(t)$	0.8	0.533	0.533	0.747	0.686	0.766	0.724	0.759	0.737	0.753
$\alpha_Y^A(t)$	0.2	0.133	0.133	0.187	0.171	0.191	0.181	0.19	0.184	0.188
$\alpha_X^B(t)$	0.2	0.133	0.133	0.187	0.171	0.191	0.181	0.19	0.184	0.188
$\alpha_Y^B(t)$	0.8	0.533	0.533	0.747	0.686	0.766	0.724	0.759	0.737	0.753
S_t^A	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
S_t^B	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
$dS_t^A / d\alpha_X^A(t-1)$		0.313	0.469	0.469	0.335	0.365	0.327	0.345	0.329	0.339
$dS_t^A / d\alpha_Y^A(t-1)$		1.25	1.875	1.875	1.339	1.458	1.306	1.38	1.318	1.357
$dS_t^B / d\alpha_X^B(t-1)$		1.25	1.875	1.875	1.339	1.458	1.306	1.38	1.318	1.357
$dS_t^B / d\alpha_Y^B(t-1)$		0.313	0.469	0.469	0.335	0.365	0.327	0.345	0.329	0.339
$\alpha_{Xn}^A(t) = \alpha_{XS}^A(t)$		0.533	0.533	0.533	0.533	0.533	0.533	0.533	0.533	0.533
$\alpha_{Yn}^A(t) = \alpha_{YS}^A(t)$		0.133	0.133	0.133	0.133	0.133	0.133	0.133	0.133	0.133
$\alpha_{Xn}^B(t) = \alpha_{XS}^B(t)$		0.133	0.133	0.133	0.133	0.133	0.133	0.133	0.133	0.133
$\alpha_{Yn}^B(t) = \alpha_{YS}^B(t)$		0.533	0.533	0.533	0.533	0.533	0.533	0.533	0.533	0.533
η_{t+1}^A	0.5	0.5	0.9	0.786	0.936	0.858	0.923	0.882	0.912	0.892
η_{t+1}^B	0.5	0.5	0.9	0.786	0.936	0.858	0.923	0.882	0.912	0.892
PV{ $U^A(t)$ }		-0.32	0.678	2.015	2.93	4.04	4.984	6.031	7.002	8.023
PV{ $U^B(t)$ }		-0.32	0.678	2.015	2.93	4.04	4.984	6.031	7.002	8.023
Total util_A (join)	35.38			Total util_A (disjoin)			30.52			
Total util_B (join)	35.38			Total util_B (disjoin)			30.52			

Table 5: Distribution of Incorporated Enterprises by Size of Regular Employees

Size of regular employees\Time	1975-6	1980-1	1985-6	1990-1	1995-6	2000-1
4 persons and under	0.438486	0.461544	0.474015	0.500319	0.493959	0.512874
5—49 persons	0.498525	0.474301	0.465769	0.441473	0.447074	0.430994
50—99 persons	0.034287	0.035544	0.03293	0.031529	0.031893	0.029763
100—999 persons	0.026867	0.026893	0.025689	0.024999	0.025285	0.02461
1,000--1,999 persons	0.000983	0.000922	0.000879	0.000935	0.000997	0.001018
2,000 persons and over	0.000852	0.000797	0.000719	0.000744	0.000791	0.000742
Total establishments	1	1	1	1	1	1
(4 and under) minus (2,000+)	0.437634	0.460747	0.473297	0.499575	0.493168	0.512132

Source: Japan Statistical Yearbooks



**Table 6: Compensation to Management (Mgmt) and Non-management
(Non-Mgmt) Employees** (value in billions of yen)

Compensation \ Time	1975-6	1980-1	1985-6	1990-1	1995-6	2000-1
Compensation to Mgmt	7608	13206	18269	24913	31413	31446
Compensation to Non-Mgmt	43722	69011	93988	122101	146830	146637
No. of Mgmt employee (1,000)	2939	3872	4425	4849	5716	5957
No. of Non-Mgmt employee (1,000)	25281	27965	31447	34537	37891	39412
Compensation per 1000 Mgmt	2.588636	3.41064	4.128588	5.13776	5.495626	5.278832
Compensation per 1000 Non-Mgmt	1.729441	2.467763	2.988775	3.535368	3.875063	3.720618
Comp. ratio of Mgmt to Non-Mgmt	1.496805	1.382078	1.381365	1.453246	1.418203	1.418805

Source: Japan Statistical Yearbooks

Table 7: The Relative Performance of Japan's Economy vs. U.S.'s Economy

GDP growth rate(in 1991 price)	1977	1982	1987	1992	1997	2002
GDP growth rate in Japan	4.39	3.18	4.38	1	1.83	0.14
GDP growth rate in U.S.	4.7	-2.07	3.36	3.06	4.47	2.43
GDP grow(Japan-U.S.)	-0.31	5.25	1.02	-2.06	-2.64	-2.29

Source: the United Nations

Table 8: The Correlation Matrix

	<i>Row 1</i>	<i>Row 2</i>	<i>Row 3</i>
Row 1	1		
Row 2	-0.59048	1	
Row 3	-0.47947	-0.27209	1

Row 1: GDP growth rate difference between Japan and U.S.

Row 2: percentage difference between small and big enterprises

Row 3: per capita compensation ratio between management and non-management

Table 9: Regression of Japan’s Relative Economic Performance

Dependent variable: Japan’s GDP growth rate – U.S. Growth rate (one year lag)

Explanatory Variables	Coefficient Estimates
Constant	18.17 (1.15)
% difference between small and big enterprise	-31.98 (-2.08)**
Compensation ratio between management and non-management employee	-2.23 (-0.31)
N	30
R^2	0.41

** Significant at the 5 percent level.