Valley of Institutional Change:
Japanese Political Economy 1990-2005

Sota Kato[1]

Abstract

Why does an extensive reform of a national political-economic system invite temporal, and often substantial, loss of economic output? This paper extends the previous research of transition economies on this topic and tackles the question from two new aspects. First, it utilizes recent developments in theories of institutions and institutional change. Second, it analyzes the Japanese political economy from 1990 to 2005 and examines how and to what extent institutional changes affected economic performance. After the collapse of the bubble economy in the early 1990s, Japan implemented series of neoliberal reforms aimed at abandoning its once renowned "Japan model."

This paper deduces a theoretical model to show that an extensive system change, including a change from an economically inefficient system to a more efficient one, invites a temporal loss of institutional complementarities among composing institutions during the change. Such a loss of institutional complementarities results in "valley of institutional change," an output fall during transition.

[1] Professor, International University of Japan. Senior Fellow, Tokyo Foundation and Canon Global Institute. skato@yj9.so-net.ne.jp

1. Introduction

Why does an extensive reform of a national political-economic system invite temporal, and often substantial, loss of economic output? This question was initially raised in relation to transition between capitalism and socialism. Przeworski (1985) earlier pointed out that, even if assuming that socialism is superior to capitalism, "valley of transition," a temporal drop of workers' welfare during transition from capitalism to socialism exists. The topic became a highly debated issue when the opposite transition, from communism to capitalism, occurred after the fall of the Berlin wall.

The question is especially puzzling because, when ex-communist states initiated their transition in the early 1990s, the consensus among scholars and reformers was that the capitalist system was superior to the communist system in producing better economic outcomes. Reformers then thus rushed to implant Western capitalism systems to post-communist states but the results were mostly devastating (Roland 2000). So why would a transition toward an economically more efficient system invite an economic downturn? Prezeworski provided one possible answer and transitional economists proposed several others.

This paper extends the previous research on transition economies and tackles the question from two new aspects. First, it utilizes recent developments in theories of institution and institutional change. Second, it analyzes the Japanese political economy from 1990 to 2005 and examines how and to what extent institutional changes affected economic performance. After the collapse of the bubble economy in the early 1990s, Japan implemented neoliberal reform plans by executing extensive institutional changes aimed at abandoning its once renowned "Japan model" and to be more like the US (Nakatani 1996, 2008; Ohmori 2007; Lechevalier 2012).

The paper starts from reviewing past related research. It then shows what this research can add to. In the theory section, I deduce a theoretical model to show that an extensive system change, including a change from an economically inefficient system to a more efficient one, invites an output fall. During an extensive institutional change of a national political-economic system, due to different speed of change among different types of institutions, a temporal loss of institutional complementarities among composing institutions inevitably occurs. Such loss of institutional complementarities invites, I argue, a temporal and inevitable output fall. I call the output loss during extensive institutional change "valley of institutional change," expressing the broader range of applicability compared to Prezeworski's "valley of transition."

Hypotheses derived from the theoretical model are tested against panel data for Japanese industries (n=65) from 1990 to 2005. The dependent variable of the empirical testing model is the output of each industry. The testing variables are indicators that represent the embeddedness of each industry to political-economic institutions that constituted the "Japan model." Finally, in the concluding remark, I briefly summarize results of theoretical and empirical analyses and their implications for policy making.

2. Past Research

2.1 Research on output fall during transition

Przeworski argued that, contrary to Marx's assertion, workers' material interests in capitalist societies do not automatically lead to transition toward socialism even if socialism was superior to capitalism. The main reason he raised was the existence of "valley of transition," a temporal drop of workers' welfare during transition from capitalism to socialism. Such "valley" exists because, faced with imminent nationalization, capitalists would disinvest and might even

seek for using armed forces to prevent the transition.

Applicability of Przeworski's argument, however, is limited to transition from capitalism to socialism. His insightful argument thus did not garner enough attention when the transition to the opposite direction, from communism to capitalism, occurred in the 1990s.

In the 1990s, Western economists led "big bang" structural reforms, aiming to implant capitalist systems into post-communist states. The results were, however, devastating (Roland 2000). Observing the debacle, transitional economists started to investigate why transition toward supposedly more efficient system incurs serious output loss.

Many of transitional economists based their explanations on standard economic theory. Calvo and Coricelli (1992), for instance, presented the credit crunch hypothesis. When stabilization policy was implemented in Poland in 1990, they claimed, high real interest rate along with announcement of hard budget constraint substantially reduced firms' demand for credit and thus led to output fall. Roland and Verdier (1999) raised the search friction hypothesis. Relation-specific investments only take place when long-term partner exists (Williamson 1996). After liberalization, firms had to take time to search a new partner who was trustable to create long-term relationship. They did not invest until they find such a partner, leading to output fall during the search period.

Transitional economists' arguments are theoretically rigid and many of them demonstrated empirical validness as well. Nonetheless, the range of application of transitional economists' claims is, in contrast to Przeworski's argument, mostly limited to transition from communism to capitalism. Moreover, most of them focus only on economic aspect of transition and ignore political economic and structural aspects.

2.2 Varieties of capitalism (VOC) perspective

After the collapse of communism in 1989, social scientists' who were interested in comparing capitalism and socialism/communism turned their interest toward comparing different types of capitalism.[2] Hall and Soskice (2001) presented "varieties of capitalism (VOC)" perspective which has recently become one of the most referred research in the field of comparative political economy.

VOC classifies two types of capitalism by how firms coordinate with other actors. Capitalist economies in which firms mostly rely on market mode of coordination are classified as Liberalized Market Economies (LMEs) whereas those in which firms rely on strategic mode of coordination are classified as Coordinated Market Economies (CMEs). Typical examples of the former, in VOC's view, are the US and UK, and the examples of the latter are Germany, France and Japan.

Patterns of coordination, whether strategic or market driven, depends on institutional setting of each economy. VOC emphasizes the concept of institutional complementarities,[3] which means the presence of one set of institutions raises the return of the other. Complementarities among institutions across different spheres of political economy enhance aggregate economic performance. Such complementarities, VOC argues, realize distinct patterns of combinations of institutions that result in "varieties" of political economic system[4].

While VOC perspective has become an intellectual base for analyses of post cold war comparative political economy, it has gathered various criticisms as well. One of the major

---

2 Several political scientists had proceeded in this topic. Johnson (1982), for example, conceptualized "developmental state model" and pointed out that the developmental state employs economic strategies quite distinct from Western economies. Main-stream economists, on the other hand, were reluctant to admit significant differences among capitalist states and their economic strategies until recently. Aoki (1990; 2001) was one of the few exceptions and explained rationale of Japanese and East Asian corporate system by using game theoretic framework.

3 Definition of institutional complementarities for this paper will be addressed in the later section.

4 VOC advocates emphasize existence of complementary relation between institutions governing labor relations and corporate governance (Hall and Soskice 2001: Hall and Gingerich 2009). They empirically and theoretically showed that the pattern of institutional setting of labor relations correlates with the pattern of institutional setting of corporate governance.

criticisms of VOC is that it over-emphasizes stableness and path-dependence of economies and fails to explain dynamic elements of economic change (Hancke et al. 2007; Streeck and Thelen 2005). In fact, since the 1980s, neoliberal movement spread across the world and some of the CMEs including Japan implemented neoliberal reform plans to change themselves to LMEs. VOC perspective is incompetent in explaining such a phenomenon and thus needs to incorporate dynamic aspects.

2.3. Japan`s "lost decade" debate

The prolonged economic stagnation in Japan in the 1990s, often labeled Japan's "Lost Decade," provoked intensified debates among social scientists worldwide (e.g., Harada 1998; Ono 1998; Posen 1998; Krugman 1999; Yoshikawa 1999; Iwata 2001; Kato & Kobayashi 2001; Ogawa 2009). Their approaches can roughly be divided into two patterns, namely, the cyclical (demand-side) approach and the structural (supply-side) approach. The former regards the economic stagnation as a purely macroeconomic phenomenon worsened by policy failures. The latter views that the "Japan model" had become outdated by the 1990 and blames key components of the Japan model such as the main bank system, *keiretsu*, cross-shareholding and active bureaucracy for blocking economic recovery.

Several studies, including my earlier work with Keiichiro Kobayashi (2001), theoretically and empirically showed that structure mattered for the prolonged stagnation[5]. Careful observers of Japanese political economy, on the other hand, mostly agree that Japan underwent extensive institutional change after 1990s (Pempel 2000; Aoki 2001; Hoshi & Kashyap 2001; Toya 2003; Vogel 2006; Jackson & Miyajima 2007; Kato 2009)[6]. Using the notions of VOC, Japan

[5] We do not deny cyclical argument. We think that both cyclical and structural factors had significant effects on the prolonged economic downturn (Kobayashi & Kato 2001; for a similar view, see Yoshikawa 1999).

[6] There are the opposite views as well. Lincoln (2001), for instance, insists that Japan could not

attempted to transform her political economic system from CMEs to LMEs (Kato 2011).

Then why did not Japanese economy recover more promptly? If the political economic structure, notably the "Japan model," was one of the major causes of the Japanese economic stagnation in the 1990s, and if the Japanese government implemented drastic structural reforms in the 1990s, why was Japan unable to recover from the stagnation more smoothly? These are the questions this paper attempts to solve by extending past research of transitional economies and comparative institutional analysis including VOC perspective.

2.4. Aims of this paper

Why does an extensive reform of a national political-economic system invite temporal, and often substantial, loss of economic output? Prezeworski and transitional economists provided possible answers for transitions between capitalism and socialism/communism. Social scientists` interest after the cold war era has moved from comparing "capitalism vs. socialism" to "capitalism vs. capitalism" (Aoki & Kato 2007). Few researchers, however, have analyzed possible output fall during transitions between different types of capitalism.

VOC perspective, on the other hand, successfully showed why divergent patterns of capitalism coexist but it lacks dynamic aspects. Why do not CMEs make transition to LMEs or vice versa? What happens if such transition occurs, as was the case of Japan? What are the costs of transition?

This paper aims to explain why extensive institutional change, including change from one type of capitalism to another, invites temporal output fall by analyzing Japanese experience in 1990-2005. During the era, Japan implemented neoliberal reforms which provide social scientists a favorable large-N sample to examine the effects of extensive institutional change.

---

promptly recover from the recession because structural reforms were too little, too slow. Katz (1998, 2010) takes a similar, although more cautious view.

I first construct a theoretical model and show that even transition toward more efficient institutional setting invites temporal output loss under a certain condition. In the next section, hypotheses derived from the theoretical model are tested against data gathered from Japanese economy during 1990-2005. I use panel data, consisting of 65 industries in the time span of 1990-2005.

3. Model and Hypothesis

3.1 Assumptions

Two key assumptions for deducing a theoretical model are as follows.

Assumption 1: Institutional complementarities exist.

Assumption 2: The time necessary for institutions to change varies from one institution to another.

As for Assumption 1, Hall and Gingerich (2009) define institutional complementarities as, "One set of institutions is said to be complementary to another when its presence raises the returns available from the other." This paper will follow their definition.[7] The idea of institutional complementarities has been widely accepted by economists (e.g., Aoki 2001: Hoff and Stiglitz 2001; Teranishi 2003; Roland 2004), political scientists (Hall & Soskice 2001) and sociologists (Kenworthy 2006).

Assumption 2 is probably less well acknowledged but no less important. Williamson (1996) distinguished four levels of institutions by how quickly they change. Roland (2004)

[7] As for a formal definition of institutional complementarities, see Kato (2011).

classified institutions into "slow-moving" and "fast-moving" institutions. Typical examples of the former, according to Roland, are informal institutions, such as beliefs and values; political institutions are examples of the latter. Kato (2012) empirically showed "government centered institution," institution such as legal system that government deliberately establishes, changes faster than "private centered institution" such as business customs.

3.2. Model

If Assumptions 1 and 2 hold, will a loss of institutional complementarities among institutions during system change results in output fall? To examine this question, in the following, I deduce a theoretical model from the two assumptions.

Let assume that the performance of system T_t is dependent on the effectiveness of two institutions I_t and U_t. Let S_t and R_t denote the effectiveness of institutions I_t and U_t and let $S_t \in [0,1]$, $R_t \in [0,1]$. Suppose that the initial system S_0 was at the point of $S_0 = C_s$ and $R_0 = C_r$. An extensive system reforms were undertaken to change toward a superior system S_1 where $S_t = R_t = 1$. The performance of T_t can be shown in the following simple model;

$$P_t = P(S_t, R_t) = \alpha S_t \cdot R_t - \beta(S_t - R_t)^2 + \gamma,$$

$$\alpha > 0, \beta > 0, \gamma > 0.$$

The second term shows strong complementarities between I_t and U_t. If I_t and U_t deviate from complementary relations, the performance of system T_t, which is P_t, decreases substantially. Let assume that S_t and R_t change as following

$$S_t = a_s t + C_s,$$

$$R_t = a_r t + C_r,$$

where a_s and a_r denote the speed of institutional change of I_t and U_t, respectively.

In this model, one can reasonably assume that the performance of $T_t a$ffects industry's productivity. This situation can be expressed as follows. There is a representative firm whose production technology is:

$$Y_t = A_t N_t^{1-\delta} K_t^{\delta},$$

where Y_t, A_t, N_t, and K_t denote output, productivity, labor input, and capital input, respectively. I assume A_t consists of institutional factor P_t and non-institutional factor Q_t.

Hence A_t is expressed as

$$A_t = b_P P_t + b_Q Q_t,$$

where b_P and b_Q are parameters.

To assess how loss of institutional complementarities affects economic output, I will run a simple simulation by inserting actual values for each parameter. For the sake of simplicity, let $C_s = C_r = 0$、$a_s = 1$、$a_R = 10$. Also let $N_t = \bar{N}$、$K_t = \bar{K}$、$Q_t = \bar{Q}$. In this case, suppose that extensive system reforms were undertaken to change from T_0 where $S_0 = R_0 = 0$ toward a superior system T_1 where $S_1 = R_1 = 1$. In this case, since R_t changes 10 times faster than S_t, R_t reaches $R_t = 1$when $t = 1/10$, and S_t reaches $S_t = 1$ when $t = 1$. The representative firm's output

during $0 \leq t \leq 1$ will be as follows:

$$Y_t = \{b_P(10\alpha \cdot t^2 - 81\beta \cdot t^2 + \gamma) + b_Q\bar{Q}\}\bar{N}^{1-\delta}\bar{K}^{\delta} \qquad \text{for } 0 \leq t \leq 1/10,$$

$$Y_t = \{b_P(\alpha \cdot t - \beta \cdot (1-t)^2 + \gamma) + b_Q\bar{Q}\}\bar{N}^{1-\delta}\bar{K}^{\delta} \qquad \text{for } 1/10 \leq t \leq 1,$$

$$Y_t = \{b_P(\alpha + \gamma) + b_Q\bar{Q}\}\bar{N}^{1-\delta}\bar{K}^{\delta} \qquad \text{for } 1 \leq t,$$

For the sake of simplicity, let $\alpha = \beta = 1$. Then, when $0 \leq t \leq 1/10$,

$$Y_t = \{b_P(-71t^2 + \gamma) + b_Q\bar{Q}\}\bar{N}^{1-\delta}\bar{K}^{\delta} \; < \; Y_0 = \{b_P\gamma + b_Q\bar{Q}\}\bar{N}^{1-\delta}\bar{K}^{\delta}$$

Thus when $0 \leq t \leq 1/10$, the performance of system T_t temporarily drops under the initial system T_0 even though the system change was heading to a more superior system T_1. I call this "valley of institutional change."[8] One can substitute communism to T_0 and capitalism to T_1 to earn insights. Figure 1 and Figure 2 illustrate changes of R_t and S_t and how they relate to Y_t. One can confirm from these figures and equations that even when the system changes from an inferior one to a superior one, under certain condition, there can be inevitable output fall, what I call "valley of institutional change," during the transition.

Figure 1.

Figure 2.

[8] Since Przeworski's "valley of transition" was only applicable to transition from capitalism to socialism, I used the term "valley of institutional change" to express that the range of application is much wider for this notion.

Figure 1: Simulated Change of S_t and R_t

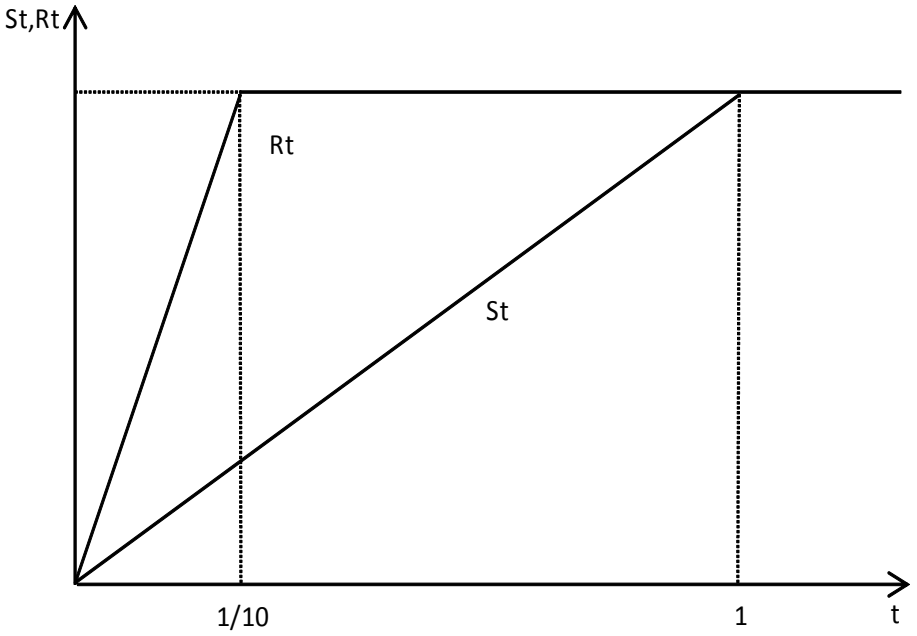
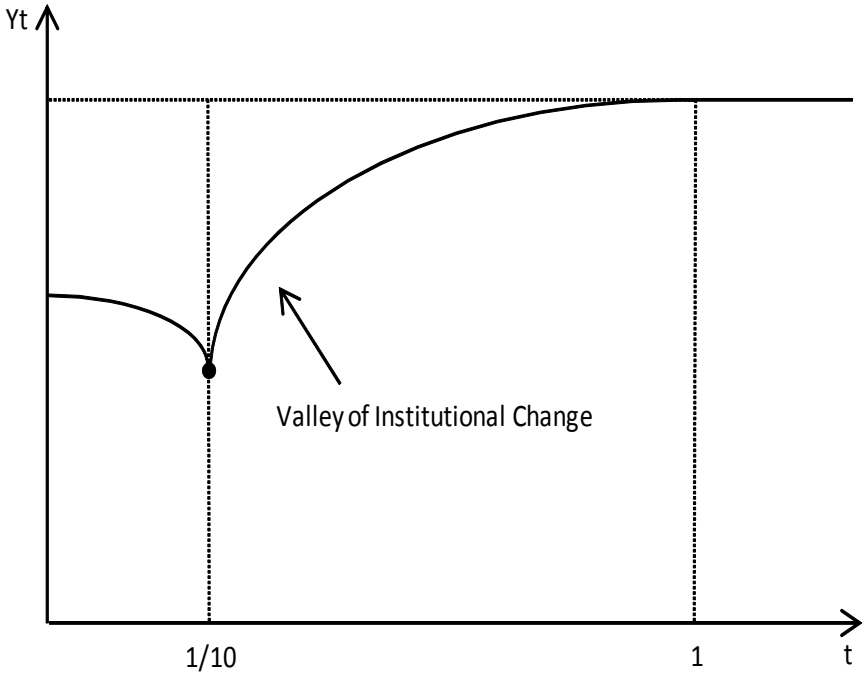


Figure 2: Simulated Change of Output (Y_t)



3.3. Illustrative Example

Figure 3 shows an illustrative example. Suppose that in Country U, Institution I_U and Institution i_U are complementary. Also suppose that in Country J, Institution I_J and Institution i_J are complementary. The combination of I_U and i_U generates H (high) economic performance in Country U, the combination of I_J and i_J generates M (mediocre) economic performance in Country J, and the combination of institutions without complementarities ($\{I_U, i_J\},\{I_J, i_U\}$) generates L (low) economic performance.

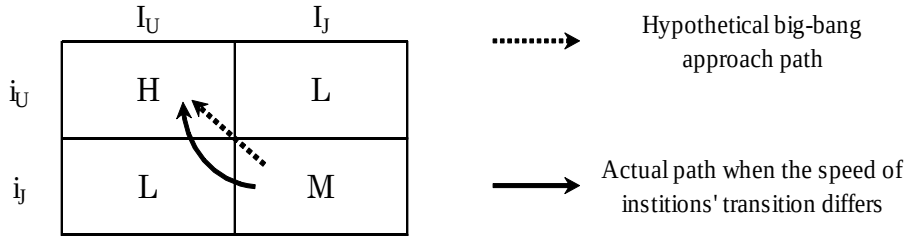
Figure 3

.

Policymakers and the public in Country J, after seeing that the economic performance of Country U outperforms their country's performance, may seek a systemic transformation to the institutions of Country U. As for the transformation strategy, they would probably want to transform Institution I and Institution i *simultaneously* because if Institution I and Institution i are transformed separately, they would have a low-performance combination of $\{I_U, i_J\}$ that results in performance lower than the current performance of Country J. Thus, policymakers of Country J would want to jump to the system of Country U through the Big Bang approach, changing institutions I and i simultaneously.

Suppose, however, that the speed of transformation for Institution I is faster than the speed of transformation i. In that event, even when policymakers intend to make a linear jump from the system of Country J to the system of Country U, the actual transformation path would *curve* as shown in Figure 3, and temporarily go through the domains of I_U and i_J, resulting in the decline of the economic performance of Country J. This is the intuitive description of the "valley of institutional change" I formally showed earlier.

Figure 3: Institutional Transition (Curve)



3.4. Hypothesis

The general hypothesis of the main point of this paper can be derived from the theoretical model as follows:

Hypothesis 1: An extensive system change, under which industries operates, inevitably invites temporary output fall of industries because, due to difference of speed of change among different types of institutions, institutional complementarities will be lost/loosened temporally during the change.

4. Empirical Test

4.1 Unit of Analysis

The primary unit of analysis of this paper is *industry*. Business economists have made strong arguments that even in the US, where the market is well-developed, industry does matter significantly (e.g., Porter & McGahan 1997)[9]. There is further rationale for choosing industry as the primary unit of analysis for this research when considering the history and structure of the Japanese political economy. By inheriting the legacy of the wartime economy, industry played a special role in the post-WWII Japanese political economy. Teranishi (2003) pointed out that in Japan, industry worked as a political platform for interest coordination—a role played by social classes in Western countries. Others similarly indicated that the Japanese political economy was vertically partitioned by industry, and so it functioned as a basic unit of political economic coordination. Whereas Sato and Matsuzaki (1986) and Aoki (1995/2000) called the Japanese

[9] Porter (1980) points out features of industries that define competitive strucuture of each industry and firms within the industry.

version of the iron triangle "s*hikirareta tagenshugi"* (bureauplurarism), Murakami (1994) named it "compartmentalized competition." The Liberal Democratic Party (LDP), the party that held onto power for most of the post WWII era, and each ministry's departments were divided vertically by industrial sectors. As a consequence, political economic institutions varied across industries resulting in the "dual economy" (Katz 1998), high variance of profitability across Japanese industries.

4.2 Dataset

I compiled a political economic dataset covering 65 industries during 1990–2005.[10] Economic data was mainly gathered from the Japan Industry Productivity Database 2006 (JIP 2006)[11]. Corporate financial data were gathered from the NEEDS Financial QUEST database and converted to industries using Mitsubishi Research Institute (MRI) categorization. (For the methods of conversion, see Appendix A and B.) Political data was gathered from governmental sources and converted to JIP categorization through MRI to the JIP conversion matrix (see also Appendix B). To make different types of institutional variables comparable, I normalized each variable before using it in statistical analyses.

4.3. Coordination Indices

The "Japan model" was characterized by intimate, long-term, and informal government-industry and finance-industry relationships (Aoki 1995/2000; Hoshi & Kashyap 2001; Teranishi 2003). Both relationships were mutually complementary (Aoki 2001; Teranishi

[10] JIP 2006 consisted of 108 industries. By eliminating variables that are irrelevant for testing Hypotheses and by eliminating variables with substantial missing values, the number of industries shrunk to XX industries.

[11] The JIP database was compiled in a collaborative effort between the Research Institute of Economy, Trade and Industry (RIETI), a subsidiary institute of Ministry of Economy, Trade, and Industry (METI), and Hitotsubashi University. The JIP database and its detailed description are available from the RIETI website (http://www.rieti.go.jp/jp/database/JIP2006/index.html).

2003; Kato 2011). The main testing variables for industry-level analysis of this paper are thus those that represent institutions for government-industry coordination (G_{it}) and finance-industry coordination (F_{it}).[12] I constructed indices that represent each of them for empirical testing. The summary of each index is shown in Table 1.

Table 1.

[12] VOC advocates often indicate institutions that coordinate corporate governance and labor relations as mutually complementary institutions (e.g., Hall & Gingerich 2009). In the case of Japan, however, as Pempel and Tsunekawa (1979) pointed out, labor was mostly absent from political economic coordination. Instead, political economic coordination was led by economic ministries, the LDP, and trade associations, all of them being included in analyses of this paper.

Table 1. Coordination Indices

Index	Variables	
$F_{i,t}$	$\mathrm{Krt}_{i,t}$	*Keiretsu* ratio (the ratio of firms affiliated in major *keiretsu*)
	$\mathrm{Pde}_{i,t}$	Private debt to equity ratio
	$\mathrm{Csh}_{i,t}$	Cross shareholding ratio (the ratio of mutually held shares by two firms)
	$\mathrm{Ncm}_{i,t}$	Non-capital market finance ratio
$G_{i,t}$	$\mathrm{Exb}_{i,t}$	Number of ex-bureaucrats ("*amakudari*" bureaucrats)
	$\mathrm{Pdn}_{i,t}$	Amount of political donation
	$\mathrm{TAb}_{i,t}$	Budget size of trade association
	$\mathrm{Reg}_{i,t}$	Ratio of firms under government regulation

As for the government-industry coordination index G_{it} for industry i in year t, four variables that serve as proxies for the degree of government-industry coordination are combined. The higher the value of each variable, the higher the level of government-industry coordination. Since each variable are normalized, I simply took an average value of four variables for G_{it}.

Variable ExB is the number of retired bureaucrats taking executive positions in each industry. Such a custom is called "*amakudari*" and it has long been a symbol of collaborative government-firm relations[13]. As Ramseyer and Rosenbluth (1994) correctly pointed out, retaining executive positions in private firms after retirement (i.e., *amakudari*) had been a top priority of Japanese bureaucrats, thus making this variable a strong proxy of closeness of government-industry relationships. As trade associations functioned as a point of contact between industry and the bureaucracy in the Japan model (Yonekura 1993; Teranishi 2003; Sasada 2011), the budget size of trade associations (TAb) should represent the collaborative government-industry relations as well. Since regulation is a primary political tool for the government to affect industrial behavior, the number of firms under control of governmental regulations (Reg) should also represent strength of government-industry coordination. Amount of political donation (Pdn) is another obvious proxy.

Index F_{it} includes four variables that are proxies for intimate, long-term, and informal finance-industry relationship. Based on long-term relationship, aggressive borrowing from banks was thought to be a feature of the "Japan Model" (Hoshi & Kashyap 2001; Ikeo 2006: Ogawa 2009). I thus included private debt to equity ratio (Pde). Similarly, under the "Japan Model," capital market was highly regulated by Ministry of Finance and did not develop (Ogawa 2009). Firms relied on non-capital market finance (Ncm), mostly bank loans. Cross-shareholding among firms (Csh) was another feature of the "Japan model." It functioned

[13] "*Amakudari*" means fall from heaven in Japanese.

to lessen pressures from equity market and strengthen relational banking.

Figure 4 shows how G_{it} and F_{it} changed during 1990-2005[14]. Both lessened their values substantially during 1990-2005 meaning that the "Japan Model" was considerably dismantled. Between the two, G_{it} changed faster when extensive institutional change started in the early 1990s. F_{it} eventually took over G_{it} when G_{it} completed institutional change. This is in line with my earlier claim that "government centered institution" changes faster than "private centered institution" (Kato 2012).

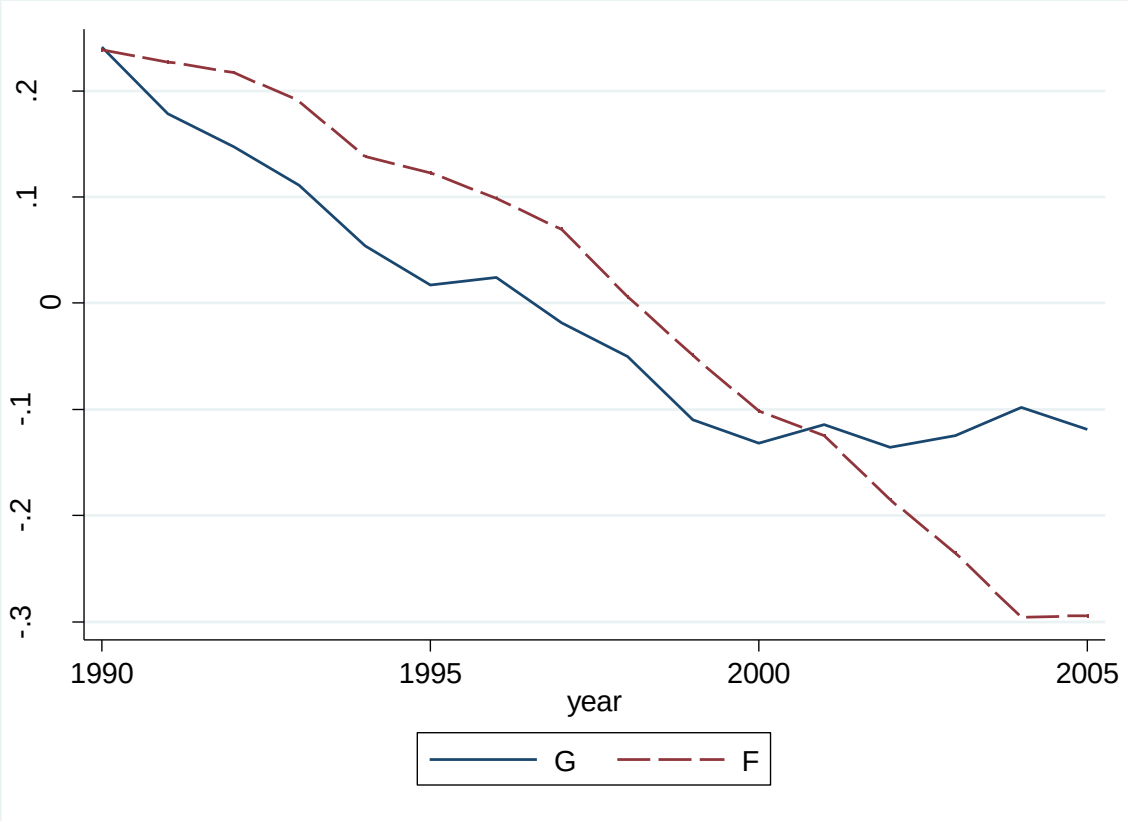
One can intuitively grasp from the Figure 4 that the gap of speed of institutional change between G_{it} and F_{it} loosened institutional complementarities during 1990-2005. In the next section, I will assess how such loosening of institutional complementarities during the period affected economic outputs of industries.

Figure 4

.

[14] G_{it} and F_{it} that appear in Figure 4 are aggregated across industries.

Figure 4: Transition of Coordination Indices



4.4. Regression Analysis

The equation I estimated to test the hypothesis 1 is as follows. Since all of the model and data I used passed the Hausman test, I used random effects model for estimation.

$$Y_{i,t} - Y_{i,1990} = \beta_0 + \beta_1 \left|\left(F_{i,t} - G_{i,t}\right) - \left(F_{i,1990} - G_{i,1990}\right)\right| + \beta_2\left(L_{i,t} - L_{i,1990}\right) + \beta_3\left(K_{i,t} - K_{i,1990}\right) + \beta_4 DS_{i,t} + \beta_5 LE_{i,t} + \varepsilon_{i,t}$$

The reason why I subtracted 1990 data of most variables is as follows. Year 1990 is generally regarded as the last year of Japan's bubble economy (Noguchi 2008). Till then, Japan outpaced virtually all other OECD countries in growth rate for several decades. Japan's extensive institutional reform thus started after 1990, absorbing dissatisfactions of Japanese who then were not used to economic downturn. Since the major aim of this paper is to assess how extensive institutional change affect economic output, by subtracting 1990 data, I examined how institutional change since pre-neoliberal reform era affected economic output[15].

Y_{it} is nominal added value for industry i in year t and $\varepsilon_{i,t}$ is an error term. Capital input (K_{it}) and labor input (L_{it}) are included as control variables. Both are expected to be positively correlated to the output. I also added ratio of domestic sales (DS_{it}) to control for each industry's strength of link to the Japanese market. Stronger link to the Japanese market is expected to work negatively on output. Another control variable is ratio of large enterprises (LE_{it}). The higher ratio of large enterprises is expected to positively affect the output.

The testing variable is $IC_{i,t} = \left|\left(F_{i,t} - G_{i,t}\right) - \left(F_{i,1990} - G_{i,1990}\right)\right|$. This testing variable IC

[15] I also did estimates without subtracting 1990 data. The results, however, were very similar to those presented in Table 2.

$_{it}$ shows that how institutional complementarities between finance-government relationship (F_{it}) and government-industry relationship (G_{it}) had been weakened since 1990. If the hypothesis holds, IC_{it} should increase as an extensive institutional change proceeds and IC_{it} should negatively affects output (i.e., $\beta_1 < 0$).

Table 2 shows the result of the estimations. The parameter estimates are mostly stable across all the models. In all the models, the coefficient of the testing variable IC_{it} is substantially and significantly negative. That is, loss of institutional complementarities between G_{it} and F_{it} leads to substantial and significant output loss. Signs of coefficients of other variables that took statistically significant values were as expected.

Table 2.

Table 2: Loss of Institutional Complementarities and Output Fall

VARIABLES	(1) RE	(2) RE	(3) RE	(4) RE
Loss of Institutional complementarities (IC_{it})	-0.0826***	-0.0826***	-0.0839***	-0.0841***
	(0.0127)	(0.0128)	(0.0135)	(0.0135)
Labor input	0.0378***	0.0377***	0.0381***	0.0379***
	(0.00372)	(0.00376)	(0.00388)	(0.00391)
Capital and service input	0.00861**	0.00872**	0.00814**	0.00846**
	(0.00351)	(0.00359)	(0.00377)	(0.00384)
Ratio of Large enterprise		-0.00137		-0.00529
		(0.0104)		(0.0115)
Ratio of domestic sales			-0.00197	-0.00211
			(0.00601)	(0.00603)
Constant	0.0403**	0.0400**	0.0404**	0.0398**
	(0.0158)	(0.0160)	(0.0170)	(0.0171)
Observations	973	973	913	913
Number of industry	65	65	61	61
R^2	0.206	0.206	0.204	0.205

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

For the purpose of simulation, I used equation (4) of Table 2. For variables other than the testing variable $\mathrm{IC_{i,t}} = \left|\left(\mathrm{F}_{i,t} - \mathrm{G}_{i,t}\right) - \left(\mathrm{F}_{i,1990} - \mathrm{G}_{i,1990}\right)\right|$, I inserted mean value of each variable and calculated predicted values of $\mathrm{Y}_{i,t} - \mathrm{Y}_{i,1990}$ which I denote $\mathrm{Y}_{\iota,t} \widehat{-\mathrm{Y}_{\iota,1990}}$.[16] Figure 3 depicts $\mathrm{Y}_{\iota,t} \widehat{-\mathrm{Y}_{\iota,1990}}$ aggregated across industries. As is clear from the Figure 3, loss of institutional complementarities during extensive institutional change invites serious output fall which I call "valley of institutional change."

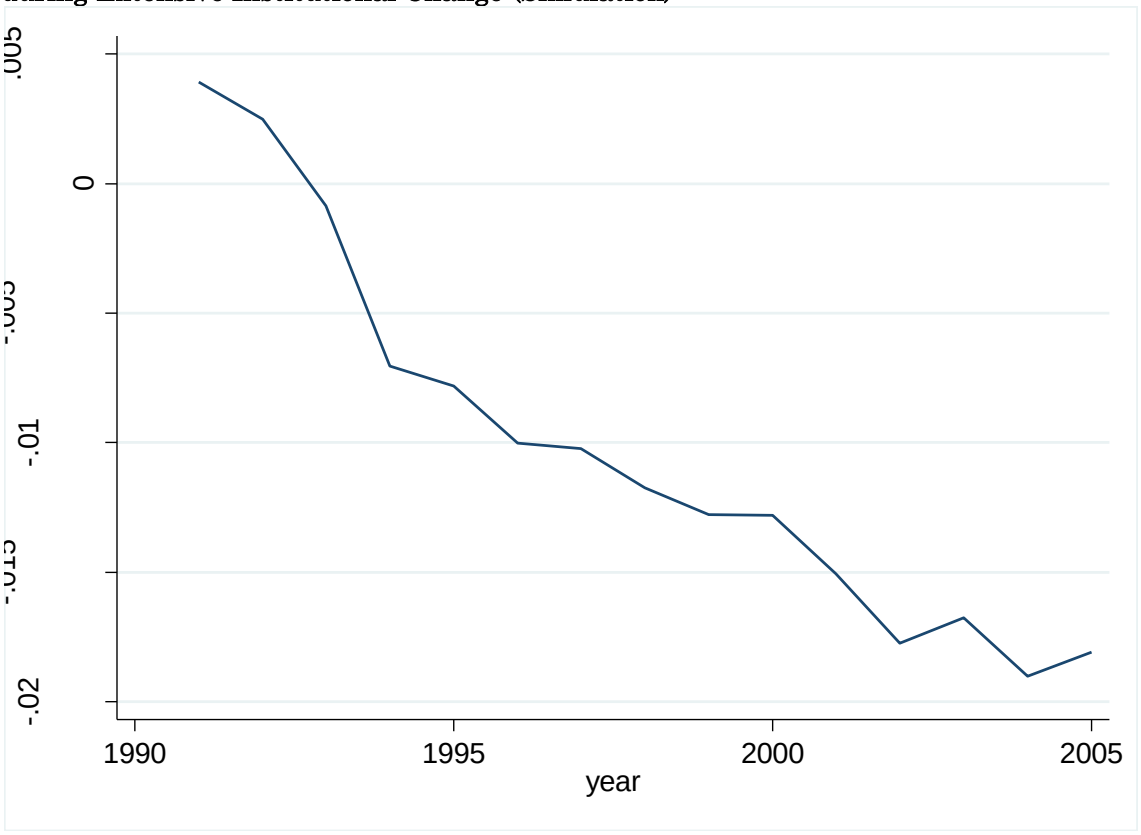
Figure 5

.

[16] More formerly,

$$\mathrm{Y}_{\iota,t} \widehat{-\mathrm{Y}_{\iota,1990}} = \hat{\beta}_0 + \hat{\beta}_1 \left|\left(\mathrm{F}_{i,t} - \mathrm{G}_{i,t}\right) - \left(\mathrm{F}_{i,1990} - \mathrm{G}_{i,1990}\right)\right| + \hat{\beta}_2 \frac{1}{n}\sum_{i=1}^{n}\frac{1}{T}\sum_{t=1}^{T}\left(\mathrm{L}_{i,t} - \mathrm{L}_{i,1990}\right) + \hat{\beta}_3 \frac{1}{n}\sum_{i=1}^{n}\frac{1}{T}\sum_{t=1}^{T}\left(\mathrm{K}_{i,t} - \mathrm{K}_{i,1990}\right) + \hat{\beta}_4 \frac{1}{n}\sum_{i=1}^{n}\frac{1}{T}\sum_{t=1}^{T}\left(\mathrm{DS}_{i,t} - \mathrm{DS}_{i,1990}\right) + \hat{\beta}_5 \frac{1}{n}\sum_{i=1}^{n}\frac{1}{T}\sum_{t=1}^{T}\mathrm{LE}_{i,t}$$

Figure 5: Predicted Output Fall caused by Loss of Institutional Complementarities during Extensive Institutional Change (Simulation)



5. Conclusion

Why does an extensive reform of a national political-economic system invite temporal, and often substantial, loss of economic output? Earlier, Prezeworski (1985) pointed out existence of "valley of transition" during transition from capitalism to socialism. Transitional economists explained the output fall during transition to the opposite direction, from communism to capitalism. Their range of application was, however, limited to transitions between capitalism and socialism/communism.

By utilizing recent developments in theories of institution and institutional change, this paper theoretically and empirically showed that extensive institutional change, including changes between different types of capitalism, invite inevitable output loss. I call such output loss during the change "valley of institutional change." It has broader range of application than Prezeworski's "valley of transition."

"Valley of institutional change" has strong implication for the VOC perspective. VOC has been criticized for being excessively static. Why not different patterns of capitalisms change to one way or another? Indeed, the Japanese case since the 1990s, which this paper empirically examined, was an attempt to change Japan from CMEs to LMEs. The existence of "valley of institutional change," however, can partially explain why different types of capitalism remain divergent and do not converge. In the other words, the dynamic analysis of this paper ironically legitimizes, to a certain extent, the static nature of VOC.

In Japan's "lost decade" debate, supply-siders often criticized Japanese policymakers for acting "too little, too late." However, results of this paper's analyses suggest that, what was crucial for Japanese policymakers was not just to accelerate pace of change but to maintain even pace of change among different spheres of political economy.

Analyses of this paper pose tough challenge for leaders of capitalist states. Existence of "valley of institutional change" makes firms and voters reluctant to accept major changes. Leaders determined to persuade firms and voters to endure a severe output fall in the short run can only initiate and sustain extensive change.

Appendix A ■JIP-MRI-DBJ table

JIP Number	JIP Industry Name	DBJ Number	DBJ (Industry Group)	MRI Number	MRI Industry Name	Industry Number	Industry
1	Rice,wheat production	—	—	—	—	47	Farming, Forestry, Fisheries
						48	Agriculture
						49	Various Agriculture
2	Miscellaneous crop farming					47	Farming, Forestry, Fisheries
						48	Agriculture
		—	—	—	—	49	Various Agriculture
3	Livestock and sericulture farming					47	Farming, Forestry, Fisheries
						48	Agriculture
						49	Various agriculture
						51	Sericulture
						52	Livestock
		1	Meat & daily products	—	—	53	Various livestock industries
4	Agricultural services					47	Farming, Forestry, Fisheries
						48	Agriculture
						49	Various agriculture
		—	—	—	—	50	Farmland
5	Forestry					48	Agriculture
						54	Forestry
		—	—	—	—	55	Lumber
6	Fisheries					48	Agriculture
						56	Fisheries and marine products
		59	Fishery	—	—	57	Various fisheries
7	Mining	60	Mining	**		1	Mining
				19	Coal mining		
				20	Miscellaneous mining		
8	Livestock products	1	Meat & daily products	**		37	Foods
				40	Dairy products	41	Other supplementary foods
				42	Processed meat		
				54	Fat		
9	Seafood products	59	Fishery	—	—	37	Foods
						41	Other supplementary foods
10	Flour and grain mill products	2	Grain Milling & Feeds	37	Grain mill products	37	Foods
						38	Rice
						39	Other staple diet
11	Miscellaneous foods and related products	4	Seasoning	**		37	Foods
		5	Confectionery & Bakery	38	Manufacture of sugar	39	Other staple diet
		6	Other foods	39	Cooking oil	41	Other supplementary foods
				41	Confectionery	42	Seasoning
				43	Miscellaneous foods and related products	43	Confectionery
				54	Fat		
12	Prepared animal foods and organic fertilizers	2	Grain Milling & Feeds	—	—	37	Foods
13	Beverages	3	Breweries	36	Breweries	37	Foods
						44	Beverage
						45	Alcohol
						46	Tea･Tabacco
14	Tobacco	6	Other foods	—	—	37	Foods
						46	Tea･Tobacco
15	Textile products	8	Spinning	**		31	Textiles
		9	Other textiles	44	Cotton and stable fiber	32	Filature
				45	Wolo and spinning	33	Spinning
				46	Linen, ramie and jute spinning	34	Sewing
				48	Other textile products		
16	Lumber and wood products					16	General equipment
						17	Furniture, Wood products
		58	Misc.Manufacturing	49	Lumber and wood products	55	Lumber
17	Furniture and fixtures					16	General equipment
						17	Furniture, Wood products
		58	Misc.Manufacturing	49	Lumber and wood products	18	Commodity
18	Pulp, paper, and coated and glazed paper	10	Paper&pulp	50	Pulp and paper	35	Paper, Pulp
19	Paper products			50	Pulp and paper	35	Paper, Pulp
20	rinting, plate making for printing and bookbindi	11	Printing	51	Printing	36	Printing
21	Leather,leather products and fur	—	—	62	Leather products		
22	Rubber products	20	Tires	**		19	General chemicals
		21	Other Rubber Products	60	Tires and tube	24	Rubber
				61	Miscellaneous rubber products		
23	Chemical fertilizers					19	General chemicals
		12	Chemicals-Major	58	Other chemical industries	26	Chemical fertilizer
24	Basic inorganic chemicals					19	General chemicals
		14	Inorganic chemicals	52	Inorganic chemical industries	20	Inorganic chemicals
25	Basic organic chemicals	13	Organic chemicals	**		19	General chemicals
				53	Organic chemical industries	21	Organic chemicals
				57	Petrochemical	22	Organic synthetic chemistry

26	Organic chemicals	12	Chemicals-Major	**		19	General chemicals
				53	Organic chemical industries	21	Organic chemicals
				58	Other chemical industries	22	Organic synthetic chemistry
27	Chemical fibers	12	Chemicals-Major	**		19	General chemicals
				47	Chemical fibers		
				58	Other chemical industries		
28	Miscellaneous chemical products	15	Oil, Fats & Cosmetics	56	Paints and inks	19	General chemicals
		16	Paints			23	Oil, paints
		12	Chemicals-Major				
29	Pharmaceutical products	17	Pharmaceuticals	55	Pharmaceutical products	25	Pharmaceuticals
30	Petroleum products	19	Petroleum	59	Oil refinement	5	Power, Fuel
31	Coal products	-	-	--	--	5	Power, Fuel
32	Glass and its products	23	Sheet glass	63	Glass	27	Ceramics
		24	Other Glass & Glassware			28	Glass, Fireproof products
33	Cement and its products					27	Ceramics
		22	Cement	64	Cement	29	Stone, Cement
34	Pottery					27	Ceramics
		25	Ceramic Wares	65	Pottery		
35	Miscellaneous ceramic, stone and clay product	26	Other Stone & Clay Pds.	**		27	Ceramics
				66	Fireproof products	30	Asbestus
				67	Carbon and black lead products		
				68	Miscellaneous stone and clay products		
36	Pig iron and crude steel	27	Iron & Steel-Major	**		6	Ordinary steel
		28	Ordinary Steel	69	Steel industries with blast furnace	8	Iron and steel products
37	Miscellaneous iron and steel	29	Special Steel	70	Miscellaneous iron and steel	7	Special steel, cast iron
		30	Other Steel Products	70	Miscellaneous iron and steel	8	Iron and steel products
38	Smelting and refining of non-ferrous metals	31	Nonderrous Metal Refining	71	Primary refining of non-ferrous metals	9	Metal
39	Non-ferrous metal products	32	NonFerrous Metal Rolling	**		9	Metal
		33	Wire & Cables	72	Rolling and drawing		
		34	Die Castings	73	Wires and cables		
40	ated constructional and architectural metal pr	35	Fabricated Metal Products	1	Metal products	9	Metal
41	Miscellaneous fabricated metal products	35	Fabricated Metal Products	1	Metal products	9	Metal
42	General industry machinery	36	Machine Tools	**		10	General machinery
		39	Chemical Plants & Tanks	3	Machine tools	11	Tools, parts
				7	Industry electric machinery	12	Industry machinery
43	Special industry machinery	37	Agricultural Machinery	**		10	General machinery
		38	Construction Machinery	3	Machine tools	11	Tools, parts
				7	Industry electric machinery	12	Industry machinery
44	Miscellaneous machinery	41	Other Machinery	**		10	General machinery
		42	Bearings	4	Miscellaneous industry machinery	12	Industry machinery
		43	Other Machinery Parts	6	Miscellaneous machinery parts	14	Electronic equipment
		47	Electric Measuring Instr.	7	Industry electric machinery		
45	Office and service industry machines	40	Office Machines	**		10	General machinery
				5	Office and household equipment	14	Electronic equipment
				8	Communication and household electric appliances		
46	Heavy construction equipment	45	Industrial Electric Eq.				
47	Household electric appliances	49	Household Electric Appl.	8	Communication and household electric appliance	10	General machinery
						14	Electronic equipment
48	ing machines, digital and analog computer equ					10	General machinery
		44	Computers & Electric Eq.	8	Communication and household electric appliance	14	Electronic equipment
49	Communication equipment	46	Communication Equipment	8	Communication and household electric appliance	10	General machinery
						14	Electronic equipment
						75	Communications
						76	Telegraph, telephone
						77	Radio wave
50	ronic equipment and electric measuring instru	45	Industrial Electric Eq.	**		10	General machinery
				8	Communication and household electric appliance	14	Electronic equipment
				17	Miscellaneous precision machinery	15	Precision machinery

51	Semiconductor devices and integrated circuits	44	Computers & Electric Eq.	**		10	General machinery
				8	Communication and household electric appliance	14	Electronic equipment
				17	Miscellaneous precision machinery	15	Precision machinery
52	Electronic parts	48	Electronic Eq. & Comp.	**		10	General machinery
				8	Communication and household electric appliance	14	Electronic equipment
				17	Miscellaneous precision instruments	15	Precision machinery
53	Miscellaneous electrical machinery equipment	50	Other Electric Equipment	9	Miscellaneous precision instruments	10	General machinery
						14	Electronic equipment
54	Motor vehicles	51	Automobiles	10	Motor vehicles	10	General machinery
						13	Transportation equipment
55	Motor vehicle parts and accessories					10	General machinery
		52	Auto Parts & Accessories	11	Motor vehicle body and parts	11	Tools, parts
56	Other transportation equipment	53	Shipbuilding-Major	**		10	General machinery
		54	Other Transportation Eq.	12	Shipbuilding and repair	13	Transportation equipment
				13	Railroad cars		
				14	Other transportation equipment		
57	Precision machinery & equipment	55	Optical Instruments	**		10	General machinery
		56	Other Precision Instr.	15	Watches	15	Precision machinery
				16	Cameras		
				17	Miscellaneous precision instruments		
58	Plasctic Products	57	Plastic Products				
59	Miscellaneous manufacturing industries	58	Misc.Manufacturing	18	Miscellaneous manufacturing industries	10	General machinery
						16	General tools
						19	General chemicals
						27	Ceramics
						31	Textiles
60	Construction	61	General Contractors-Major	21	Construction	62	Construction
		63	Dredging			63	Construction equipment･Building material
61	Civil engineering	62	General Contractors	21	Construction	58	Construction
						59	Civil engineering
						60	National land developpment
		64	Special Trade Contractors			61	Pland construction
62	Electricity	79	Electricity Supply	32	Electricity	2	Electricity
						4	Nuclear power
63	Gas, heat supply	80	Gas Supply	33	Gas	3	Gas
64	Waterworks	–	–	--	--		
65	Water supply for industrial use	–	–	--	--		
66	Waste disposal	–	–	--	--		
67	Wholesale	65	Wholesale Trade-Major	22	Wholesale		
		66	Other Wholesale Trade				
68	Retail	67	Department Stores	**			
		68	Chaine Stores	23	Department stores		
		69	Restaurant Operators	24	Other retails		
		70	Other Retail Trade				
69	Finance	–	–	--	--		
70	Insurance	–	–	--	--		
71	Real estate	71	Real Estate	25	Real estate	65	Real estate
72	Housing			--	--	64	Housing
73	Railway					66	Transportations･Traffic
						67	Transportations･Warehousing
		72	Railroads	26	Railway tracks	68	Railroads
74	Road transportation	73	Trucking			66	Transportations･Traffic
						67	Transportations･Warehousing
						69	Automobiles
						70	Cars
		78	Other Transportation	27	Road transportation	71	Freight tranport
75	Water transportation	74	Shipping	28	Water transportation	66	Transportations･Traffic
						67	Transportations･Warehousing
						72	Shipping
		77	Harbor Transportation			73	Vassels

76	Air transportation	75	Airlines	29	Air transportation	66	Transportations･Traffic
						67	Transportations･Warehousing
						74	Airlines
77	Other transportation and packing					66	Transportations･Traffic
		76	Warehousing	30	Warehousing	67	Transportations･Warehousing
78	Telegraph and telephone	81	Communication	--	--		
79	Mail	-	-	--	--		
80	Education (private and non-profit)	87	Other Services	--	--		
81	Research (private)	-	-	--	--		
82	Medical (private)	-	-	--	--		
83	Hygiene (private and non-profit)	-	-	--	--		
84	Other public services	-	-	--	--		
85	Advertising	-	-	--	--		
86	Rental of office equipment and goods	-	-	--	--		
87	Automobile maintenance services	-	-	--	--		
88	Other services for businesses	-	-	--	--		
89	Entertainment	86	Amusument Services	35	Movie and entertainment	78	Sightseeing
90	Broadcast	83	Broadcast	31	Broadcast	75	Communications
91	formation services and internet-based servic	82	Computer Services	--	--	75	Communications
92	NewspapersH	-	-	--	--		
93	nd information, character information product	84	Other Media	--	--		
94	Eating and drinking places	-	-	--	--		
95	Accommodation					78	Sightseeing
		85	Hotels	34	Accomodation and sightseeing	79	Hotels
96	Laundry, beauty and bath services	87	Other services	--	--		
97	Other services for individuals	87	Other services	--	--		

Appendix B: Data Source and Conversion Rules

1. JIP 2006

In grouping companies to industry, "JIP 2006" was used. The Japan Industrial Productivity Database 2009 (JIP 2006) is compiled in a collaborative effort between RIETI and Hitotsubashi University's G-COE Hi-Stat Program. The JIP 2006 database contains annual data on 108 sectors covering the entire Japanese economy from 1970-2006 that can be used for total factor productivity (TFP) analysis.

2. Conversion from MRI to JIP2006

In case JIP2006 rule was not available, we followed the categorization of "The Analysis of Business Management" released by Mitsubishi Research Institute (MRI) to sort each company to industry. This handbook is a survey reference which collects and examines the listed leading companies on each industry. The industries are grouped into 74. In order to unify all the industrial categorization with that of JIP 2006, in this book, the classification by MRI was converted to that of JIP 2006 by using the following formula:

To find out the values of each item of a company by industry based on JIP, we used the values on a basis of industry appearing in the MRI reference as follows:

$$\mathrm{JIP_i} = \frac{\sum_1^{\mathrm{i1N}} \mathrm{MRI_{i1n}} + \sum_1^{\mathrm{i2N}} \mathrm{MRI_{i2n}} + \cdots + \sum_1^{\mathrm{ikN}} \mathrm{MRI_{ikn}}}{\sum_1^{\mathrm{K}} \mathrm{nik}}$$

（$\mathrm{JIP_i}$: the value of i industry based on JIP classification. $\mathrm{MRI_{ik}}$: the value of ik industry based on MRI classification. nik: the number of companies of ik industry. k={1, 2,…,K}. $\forall$k, $\mathrm{MRI_{ik}} \in \mathrm{JIP_i}$）

3. NEEDS Financial QUEST

In collecting the financial data of the companies, we used NEEDS Financial QUEST. NEEDS Financial QUEST is a database including Corporate Financial and Stock Market and Macroeconomic data. We made use of these data to present Loan (Loan from bank), MBloan (Loan from main bank), Govloan (Loan from governmental institutions).

4. The number of industries (sample size)

The number of industries we took as sample was 65. We did not use industries such as government-linked industries and financial industries that were not theoretically adequate to take into account. In addition, industries with substantial missing data were removed.

Reference

Aoki, M. 1990. “Towards an economic model of the Japanese firm.” *Journal of Economic Literature*. 28:1-27.

_____. 1995/2000. *Keizai Sisutemu no Shinka to Tagensei*. Tokyo: Toyokeizai Shinposha. Translated into English by S. Gehrig as *Information, Corporate Governance and Institutional Diversity: Competitiveness in Japan, US and Transition Economies*. Oxford: Oxford University Press.

_____. 2001. *Toward Comparative Institutional Analysis.* Cambridge: MIT Press.

_____. and S. Kato. 2007. “Syakai Kagaku ha Tougou sarete-iku. [Integrating Social Science.]” *Ronza. July.* Tokyo: Asahi Shimbunsya.

Calvo, C. and F. Coricelli. 1992. “Stabilizing a Previously Centrally-Planned Economy: Poland 1990.” *Economic Policy*. April.

Hall, P. and D. Gingerich. 2009. “Varieties of Capitalism and Institutional Complementarities in the Political Economy: An Empirical Analysis.” *British Journal of Political Science*. 39:449-482.

_____, and D. Soskice. 2001. “An Introduction to Varieties of Capitalism.” In P.A. Hall and D. Soskice eds, *Varieties of Capitalism: The Institutional Foundations of Comparative Advantage.* New York: Oxford University Press.

Hancke, B., M. Rhodes. and M. Thatcher. Eds. 2007. *Beyond Varieties of Capitalism: Conflict, Contradictions and Complementarities in the European Economy.* Oxford: Oxford University Press.

Harada, Y. 1998. *Nihon no Ushinawareta Junen* [Japan’s Lost Decade]. Tokyo: Nihonkeizai Shimbunsha.

Hoff, K. and J.S. Stiglitz. 2001. “Modern Economic Theory and Development.” In Gerald M. Meier and Joseph E. Stiglitz eds. *Frontier of Development Economics*. New York: Oxford University Press.

Hoshi, T. and A. Kashyap. 2001. *Corporate Financing and Governance in Japan: The Road to the Future*. Cambridge: MIT Press.

Iwata, K. 2001. *Defure no Keizaigaku* [Economics of Deflation] Tokyo: Toyo Keizai Shimposha.

Jackson, G. and H. Miyajima. 2008. “Introduction: The Diversity and Change of Corporate Governance in Japan.” In M. Aoki, G. Jackson, and H. Miyajima eds. *Corporate Governance in Japan.* Oxford: Oxford University Press.

Johnson, C. 1982. *MITI and the Japanese Miracle.* Stanford: Stanford University Press.

Kato, S. 2009. “Caught between Two Worlds: Political Change in Japan.” *Global Asia*. Vol.4-1.

_____. 2011. “Institutional Complementarities, Institutional Changes, and Economic Outputs: Japanese Political Economy 1990-2005.” Ph.D. dissertation. University of Michigan. *Proquest*.

_____ 2012. “Bifurcated Process of Institutional Change: An Empirical Investigation.” *Mimeo*. International University of Japan.

Katz, R. 1998. *Japan: The System that Soured—The Rise and Fall of the Japanese Economic Miracle*. Armonk: M.E. Sharpe.

_____, 2010. “Japan’s Fake Economic Reforms: Why Tokyo Could Use a Little More Creative Destruction?” *Foreign Policy*. From http://www.foreignpolicy.com/articles/2010/01/08/japans_economic_reforms

Kenworthy, L. 2006. “Institutional coherence and macroeconomic performance.” Socio-economic Review. 4(1): Pp. 69-91.

Kobayashi, K. and S. Kato. 2001. *Nihon Keizai no Wana: Naze Nihon ha Chouki Teimei o Nukedase naino ka.* [Trapped Economy: Why Japanese Economy Cannot Recover from Prolonged Stagnation]. Tokyo: Nihon Keizai Shimbunsha.

Krugman, P. 1999. *The Return of Depression Economics.* New York: The Penguin Press.

Lechevalier, S. 2012. “The Great Transformation of Japanese Capitalism (1980-2010).” *Japan Spotlight*. Pp. 51-53. Vol.183-3-31.

Lincoln, E.J. 2001. *Arthritic Japan: The Slow Pace of Economic Reform*. Washington DC: Brookings Institution Press.

Murakami, Y. 1996. *An Anticlassical Political-Economic Analysis: A Vision for the Next Century.* Stanford: Stanford University Press.

Nakatani, I. 1996. *Nihon Keizai no Rekishi teki Tenkan* [The Historical Transformation of the Japanese Economy]. Tokyo Toyo Keizai Shinposha.

_____. 2008. *Shihon syugi ha Naze Jikai Shitanoka.*[Why did Capitalism Self-destruted?]. Tokyo: Syuueisya

Noguchi, Y. 2008. *Sengo Nihon Keizaishi [Post WWII Japanese Economic History]*. Tokyo: Shinchosya.

Ogawa, K. 2009. *Ushinawareta 10-nen no Shinjitsu.* [The Reality of the Lost Decade.] Tokyo: Nihonkeizai Shimbunsya.

Ohmori. 2007. *Kinnyu System wo Kangaeru* [Thinking about the Financial System]. Tokyo: Kinnyu Zaisei Jijou Kenkyukai.

Ono, Y. 1998. *Keiki to Keizaiseisaku* [Business Cycle and Economic Policy]. Tokyo: Iwanami Shoten.

Pempel, T.J. 1998/2000. *Regime Shift: Comparative Dynamics of the Japanese Political Economy*. Ithaca: Cornell University Press.

_____. and K. Tsunekawa 1979. “Corporatism without Labor? The Japanese Anomary.” In *Trends Towards Corporatist Intermidiation.* P. Shmitter and G. Lehmbruch eds. Pp.231-270. Beverly Hills: Sage.

Porter, M. E. 1980. "Industry Structure and Competitive Strategy: Keys to Profitability." *Financial Analysts Journal.* July-August.

_____. and A. McGahan. 1997. “How Much Does Industry Matter, Really?” *Strategic Management Journal.* 18:Pp. 15-30.

Posen, A.S. 1998. *Restoring Japan's Economic Growth*. Washington DC: Institute for International Economics.

Prezeworski, A. 1985. *Capitalism and Social Democracy*. Cambridge: Cambridge University Press.

Roland, G. 2000. *Transition and Economics: Politics, Markets, and Firms.* Cambridge: MIT Press.

_____. 2004. “Understanding Institutional Change: Fast-Moving and Slow-Moving Institutions. *Studies in Comparative International Development.*

_____. and T. Verdier. 1999. “Transition and the Output Fall.” Economics of Transition. 7(1): 1-28.

Sasada, H. 2011. *Seido Hatten to Seisaku Idea [Institutional Evolution and Policy Ideas]*. Tokyo: Bokutakusya.

Sato, S. and T. Matsuzaki. 1986. *Jiminto Seiken* [LDP Administration]. Tokyo: Chuo Koronsha.

Streeck, W. and K. Thelen. 2005. “Introduction: Institutional Change in Advanced Political Economies.” In *Beyond Continuity: Institutional Change in Advanced Political Economies*. Eds. W. Streeck and K. Thelen. 1-39. Oxford: Oxford University Press.

Teranishi, J. 2003. *Nihon no Keizai System [Japanese Economic System]*. Tokyo: Iwanami Shoten.

Toya, T. 2000. *The Political Economy of the Japanese Financial Big Bang: Institutional Change in Finance and Public Policy Making.* PhD book, Stanford University.

Vogel, S. K. 2006. *Japan Remodeled. How Government and Industry are Reforming Japanese Capitalism.* New York: Cornell University Press.

Williamson, O. E. 1996. *The Mechanism of Governance.* New York: Oxford University Press.

Yonekura, S. 1993. “Keizaidantai no Kinou [Functions of Trade Associations].” In Okazaki, T. and M. Okuno eds. *Gendai Nihon Keizai System no Genryu* [The Historical Origin of Contemporary Japanese Economic System]. Tokyo: Toyo Keizai Shimposya.

Yoshikawa, H. 1999. *Tenkanki no Nihon Keizai* [Japanese Economy under Transition]. Tokyo: Iwanami Shoten.