Institutional political dynamics:

political cycles between the liberal and the conservative

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Abstract

Although many system dynamicists point out the close relationship between institutional economics and system dynamic, the relationship between institutional political theory and system dynamics approach is not explicated appreciated yet. We developed a system dynamics model to investigate theoretical propositions of institutional politics. Our system dynamics model showed how the endogenous mechanism can explain the political changes as well as orders. Although simple in the causal structure, our model could show a complex behavior of political competition. Several simulation results imply that some unexpected change in election and power competition may come from the endogenous system rather than from exogenous factors.

1. Order and change in politics

There are lots of dynamics in political life. We observe continuing ebb and flow in the political support of parties, in the popularity of politicians, and in public interests of political issues (Richards 1992). It seems that political change is a rule rather than an exception.

Although political change seems to be a way of political life, it is hard to predict what kind of change will prevail next time and who will benefit from that change. Political changes are hard to predict. On the other hand, it is hard to think that political changes occur randomly. Although it is difficult to predict political changes, it is rather easy to find causal factors for them afterwards.

However, it is hard to find any political theory that explains the structural mechanism of political change. Political changes are usually explained in terms of historical events. Usually previous events are interpreted as a source of posterior events (Thelen 1999). However, chronological explanation is hard to give a necessary and sufficient structure of political

changes. Historical explanation only tries to give endless story of political changes.

Traditional political theory is more likely to stress political order rather than political change. Game theory emphasizes the equlibrium state rather than disequilibrium or changing states. Also institutional political theories tend to focus on order rather than change. Specifically, political theorists showed that the percentage of partisan voters will grow and the party system will become stable, unless there is a external crisis. This tendency of growing partisan voting behavior predict that there will be no power change in subsequent voting. (Leithner 1997)

However, recent theoretical deveoplment in the institutional political theory points out the gap between the traditional emphasis on the order and the political reality full of change. As pointed out by Greif and Laitin (2004), it is a central concern in political science today – that is, how to explain both institutional stability and change with endogenous causal mechanisms in politics. In this paper, we try to make a model that can show the endogenous mechanism of political change.

To make a dynamic model, we use a system dynamics approach. System dynamics model is powerful in constructing endogenous mechanism of changing system. And thus, system dynamicists have made several models for political change. Among them the studies on resource allocation in authoritarian regime and the resulting unstable cycles of political regime are most famous (Saeed 1998, Pavlov, Radzicki and Saeed 2005, Saeed and Pavlov 2006). They focus on the resource allocation mechanism as a endogenous engine for political change in authoritarian regime. In this paper, we want to make a dynamic model for a democratic political system focusing on its conflict resolution process.

2. Endogenous explanations of political cycle

Theories on political change can be characterized as endogenous vs. exogenous. Exogenous theory of political change finds the driving force of political change outside political systems, especially economic system. Endogenous approach tries to find a systematic mechanism of change inside the political system itself.

Political changes that repeat themselves create a pattern of political cycles. Many scholars in politics have recognized political ups and downs repeating in the political history of the world as well as America. Periods of political cycles range from several months to hundred years.

One of the longest period of political cycle reported is by Zvi Namenwirth. He analyzed patterns of changing values in party platforms. And he found there are long waves of 152 years length and short waves of 48 years length. He explained these patterns of political cycles as reflecting problems in the society, especially economic problems. In particular, he explained the short period of political cycle as reflecting the economic long wave of 50 to 60 years, that is, Kondratieff wave. In the period of increasing wealth, the liberal and progressive value will be emphasized in the party platforms. However, once the expansion turns its peak and economic contraction sets in, the conservative value begins to dominate the platform of political parties (Namenwirth 1973).

A political cycle resulted by the economic long wave is often regarded to determine war cycles. Goldstein points that the economic long wave is closely connected with the cyclical character of great world war. He argues that long-term economic upswings could increase the likelihood of war through several mechanisms; high competition for markets and resources, increase in military expenditures, and growing aggressiveness and expansionist mood conducive to war (Goldstein 1985).

Endogenous approach focuses on political mechanisms as a source of creating patterns of political changes, that is, political cycle. One of the most famous arguments is that of Huntington (1981). He observes that American politics experienced cyclic changes with interval of sixty years. At sixty-year interval in American history, significant numbers of Americans become angry at 'the ideals-versus-institutions gap' and engage in collective behavior to restore the seemingly corrupted institutions to the ethical level of the creed. He calls these time of political changes as reform periods and he observed them in the 1770s, the 1830s, the 1900s and the 1960s. Huntington concludes that the main force of political changes is a 'creedal passion' resulting from the gap between liberal ideals and conservative institutions. His perspective on political change focus on the reform periods. Smith observed that his data is consistent with the cycle of reform hypothesis (Smith 1990).

Although reform hypothesis gives an endogenous perspective on political cycles, it is not a sufficient mechanism for cycles to take place. While reform hypothesis can explain political change driven by the creedal passion, it alone cannot explain why the passion for reform disappears and substituted by political order.

The interest group cycle theory raised by McFarland gives why reform and order are alternating each other. Political interest group can be decomposed generally into the liberal (reform) and the

conservative (order). Political cycles are generated by interactions between the liberal (reform) and the conservative. The focal point in the interest group cycle theory is the excess resulted by power group, whether or not it is the liberal or the conservative. After the widespread perception of excess (exploitation by the power group), the public, the media and politicians become involved to correct the problems (p.263). The concept of the excess explains why the reform periods stops and the period of order succeeds and vice versa.

> "During reform periods, egalitarian social movements eventually produce actions that are viewed as excesses by a great majority of the politically active public. Calls for violence, flag burning and anti-Americanism, radical socialism or even trumpeting the need for zero economic growth act as a 'turn off' to general public support and participation. (McFarland 1991 p.268)"

McFarland observed rather short periods of political cycle. He points out that the liberal value and the conservative value alternates at every 30 years.

> "Interest-group cycles theory, then, means that during the 1890s, 1920s, 1950s and 1980s the power of economic producers was gaining within hundreds of issue areas at the expense of countervailing power groups. As stated here, cycle theory implies that during the reform periods – the 1900s, the 1930s, the 1960s and possible the 1990 – business and producer power weakens in hundreds of issue areas. (McFarland 1991 p.265)"

While these cycle theory offers endogenous mechanism for political cycles, recently institutionalist political theorists tried to find a structural mechasnism of political change. Firstly, Paul Pierson points out that institution itself is a reinforcing mechanism, because institutions is likely to continue and to reinforce certain kinds of political thoughts and values. He said if there is a force that weaken the institution, there comes the political change (Pierson 2000).

Again his theory is not sufficient to produce self-generating cyclic change. There needs a negative feedback loop that limit the force of positive feedback loop of reinforcing institutions (Greif & Laitin 2004). Lieberman argued that to explain political change one should relax emphasis on order in institutional perspective. He points out that political conflict as well as order is institutionalized in the political system, and they conflict, friction among multiple political order can give a starting point for institutional political change. His theory resembles to that of McFarland and Schlesinger.

Our study on building system dynamics model starts on these verbal theory of political change and cycle.

3. A system dynamics model for political change

Although Pierson argued institution as an order enforcing mechanism, all institutions are not made for maintaining previous order. Some institutions are designed to introduce change. Political party system is one of the institutions that institutionalize conflict, friction, and endogenous political changes.

We assume that there are two competing parties, conservative and liberal. Citizen can change their support toward the conservative and the liberal party. Also we included in our model the deprived and the radical, whose number is affected by the pro-capitalist of the conservative party.

Actors	Role / Goal	Affected By
Conservative Party	- Support pro-capitalist policy, - Decrease economic regulation	Supporting from citizen
Liberal Party	- Increase redistribution polity that will decrease the number of the deprived, - Increase economic regulation	Supporting from citizen
Citizen	- Change their support between the conservative party and the liberal party	If there are too many deprived, more citizen will support the liberal. If there are too many regulation, they will be afraid of economic decline and change their support to the conservative.
The deprived	- Enhance sympathy in the citizen to increase support for the liberal party	The pro-capitalist policy will increase the number of the deprived, while the redistribution policy will decrease it.
The radical	- Increase the oppression by the conservative - Decrease the economic efficiency	

<table 1> Actors and their roles in the model

As usually assumed by political scientists (Smith 1990), we assume that the liberal party can be characterized by reformist, regulatory and interventionist, and egalitarian. In contrast, the conservative is assumed to be less concerned about equality but to try to establish the adequate incentive for capital investment (Boix 1998).

In this paper, we assume the excess pointed by McFarland as a driving force to change political support by citizen. The excess by the conservative party is represented by the number the deprived that is increased by the pro-capitalist policy of the conservative. As the number of the deprived increase, people will have more sympathy for them, perceive the necessity of the redistribution policy and support the liberal party. As the liberal party gets more power, their redistribution policy will be reinforced to reduce the number of the deprived. But there is another excess coming from the liberal party, an increase in the economic regulation and the violence by the radical group, which decrease economic efficiency. As the economic efficiency goes down, public interest moves from human rights to economic stability and development. Thus, the conservative party gets more supporters and powers.

These excess mechanism forms two negative feedback loop, each for the conservative and the liberal. With these negative feedback loops, they recover their power when their power is low. But with the same feedback loops, their strong power may be constrained to reduce the excess created by their own power.

There are another feedback loops that accelerate the changing process. As many political thinkers pointed out, violence is oftentimes an important source of political dynamics (Saeed 1998, Morris 1993). Violence in political regime is a reciprocal process between the oppressor and the oppressed. In this sense, violence is reciprocal and forms a positive feedback loop (Kritzer 1977). As violence grows, oppression against them increase, which will increase the violence further.

In our model, we introduce two positive feedback loops of violence. The first is the reinforcing violence loop that works to increase the number of supporters of the liberal party. This loop is emotional. As the number of the deprived group grows, more people become radical, and more violence will take place. This makes the conservative unstable, and fear of violence increase. So, they begin to oppress the deprived, and the number of the deprived will increase.   And this makes the positive feedback loop, a vicious circle for the conservative.

The other feedback loop around violence is its effect on the economic efficiency. As there are

more violence in the society, economic efficiency will decrease. And thus more people think that economic efficiency is more important than the human rights. As more and more people support the conservative party, their power and their policy for pro-capitalist will be stronger. Finally, the number of deprived and the resulting violence will be increased. This positive feedback loop works to increase the power of the conservative rather than the liberal party.

Over all, the party competition system is composed of several negative and positive feedback loops. Firgure 1 shows the feedback structure of our model.

Figure 1. Feedback loops in the party competition model

The causal diagram is converted to simulation model composed of five stocks that show the states of political system and flows that change the system states. Citizen consists of supporters for the conservatives and the liberals. And other stocks are related with the excess created by the power group. The deprived and radical group describe the system states changed by the excess resulted by the power of the conservative, while the regulation is resulted by the power of the liberals.
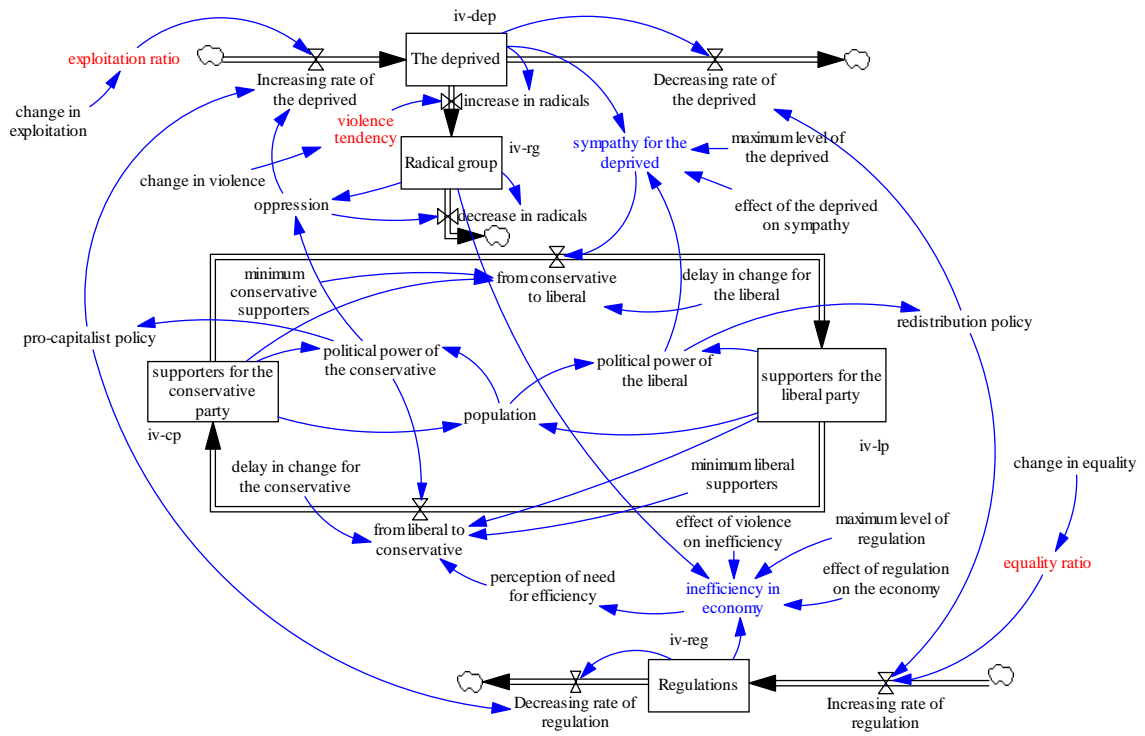

Figure 2. Flow-Stock diagram of simulation model for party competition

System dynamics model in figure 2 is a theoretical model rather than a model for describing real world. This is a highly simplified and abstracted model.This model can show how the complex behavior of political change can take place over and over again without exogenous factors.

4. Model behavior

In system dynamics model, only flows can change stocks. When all value of flows are zero, the system cease to be changed. That is the equilibrium in the system dynamics model. The equilibrium point of our model can be found when the value of the stock and parameters are set as follows.

Supporters of the conservative party = 1500
Supporters of the liberal party = 1500
The deprived = 5
Radical Group = 5
Regulations = 5
exploitation = 5
equality = 5
violence = 1/3

The existence of equilibrium point does not guarantee a stability of the system. If the equilibrium is not stable, system can be deviated from the equilibrium even with the small change in the parameters or stocks.

1) Instability with changes in initial values

The power competition of two party system is sensitive to the initial value of stock variables. If we increase the initial value of the supporters of the conservative party by 10%, there comes the fluctuating behavior in the supporters of the conservative and the liberals. It will take more than 30 years to return to the equilibrium state as shown in figure 3.

This means that if there are some external changes such as technological or economical development and thus some change in distribution of political supporters, the political system will evolve different way. We found that the political competition system is unstable and very sensitive to the all kinds of stocks. This result confirms that political systems are full of endowment effect and path dependency, as asserted by historical institutionalism in politics.
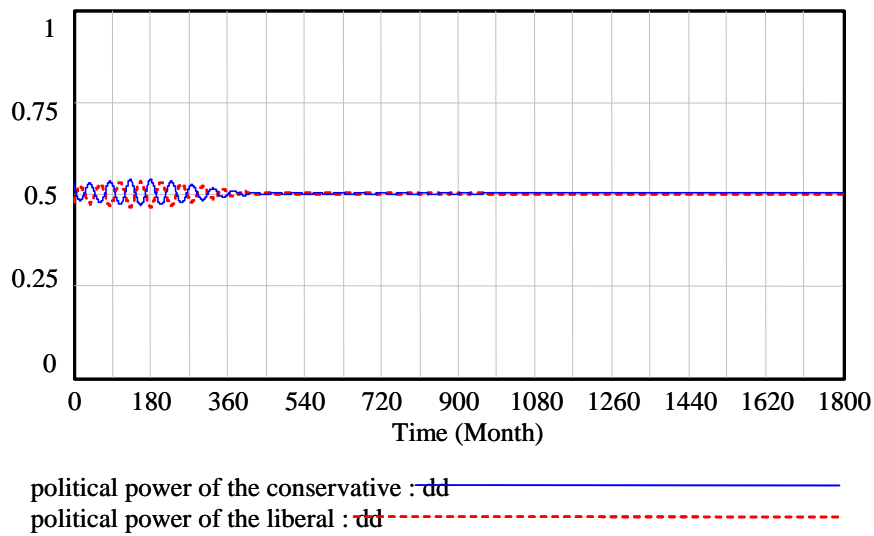
Figure 3. Political competition with 10% increase in the number of supporters for the conservative

2) Limit cycles

When one changes parameters in the model, the equilibrium can disappear completely. For example, when we change the exploitation by the conservative from 5 to 4, there comes the continuing cyclic behavior in the number of supporters as in figure 4. This limit cycle in the two party system implies that there will be endless alternation of power between the conservative and the liberal.

We must emphasize that this cyclic behavior comes from internal structure. The cyclic behavior of political supporters imply that timing of election will determine who will take power position. If the election day is scheduled at the time of high level of the conservative, the liberal party will loose the election.

When we reduce the exploitation further to 3, we can find that the equilibrium will come back after a long period of cycle in the power as in figure 5. But the resulting equilibrium is different from the previous one. In the new equilibrium, the conservative party will hold the power position continually. That is because the low exploitation will reduce the resistance from the deprived and the radical.
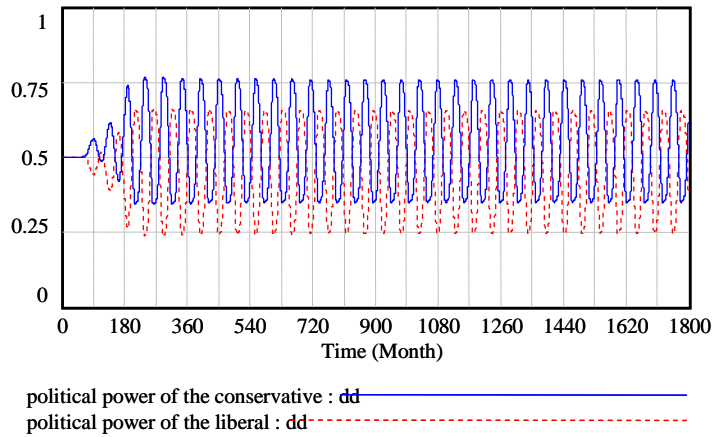
political power of the conservative : dd
political power of the liberal : dd

Figure 4. exploitation = 5 + step(-1, 60)

political power of the conservative : dd
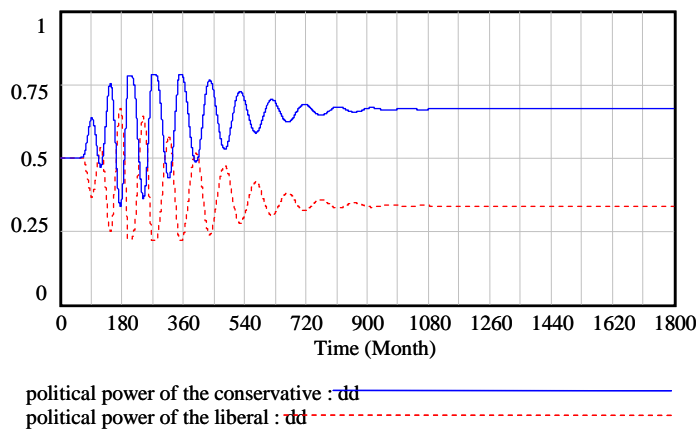political power of the liberal : dd

Figure 5. exploitation = 5 + step(-2, 60)

3) Chaotic Behavior

The political system can show more complex behavior. Politics in reality is not in equilibrium state nor they show the regular pattern of cycles. If we cannot show this complex or chaotic behavior, the model can be judged too simple and lack important mechanisms.

We found that our model also shows complex and chaotic behavior. When we introduced a slight change in the amount of exploitation, the system showed cycles of amplification and contraction as in figure 6. This implies that a slight change from the equilibrium state can produce some kind of chaotic fluctuation.

The system shows several long period of stability. Also, the period of order in figure 6 is similar to the punctuated equilibrium. But big fluctuation comes after the silent period of stability. In figure 6 one can find that a period of political stability continues for a long time around 40 years (540 month). Gradually, the politics becomes unstable. One party gets power at the expense of other party's defeat. This period of fluctuating power also continues around 40 years.
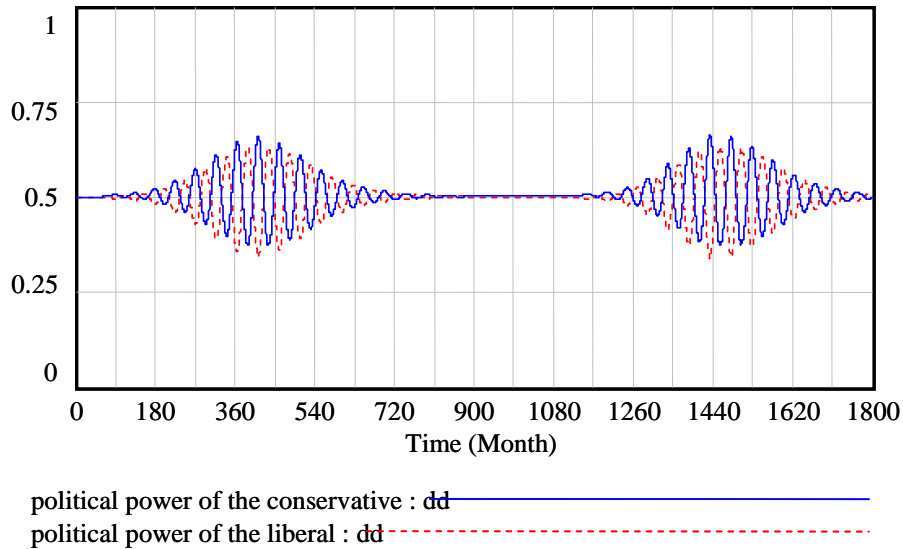

political power of the conservative : dd ⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯

political power of the liberal : dd -

Figure 6. Alternation of stable period and unstable period.

exploitation = 5 + step(-0.1, 60)

Alternating system behavior between stability and instability in figure 6 is similar to the 'reform period' suggested by Huntington. He pointed out that reform period come every 60 years. Figure 6 shows that the period of political instability comes every 80 years (900 month). Our simulation results offers analytical basis for the reform cycle observed by Huntington.

The 40 years period of stable politics shown in figure 6 can be interpreted as a political order resulted by institutional force. The succeeding abrupt destruction of peaceful stability might be interpreted as being introduced by external forces. That is because one cannot find any clue of the instability for more than 40 years. People tend to think there will be something outside the peaceful political regime that triggered the instability. But the unexpected unstable period of power change comes from internal structure not from external factors.

Fluctuating behavior in figure 6 can be decomposed into two cycles. One cycle is a short cycle, period of which is approximately 3 years (36 month). This cycle can be interpreted as being

resulted by negative feedback loops around the excess created by both parties.

The other cycle is a long cycle, period of which is about 80 years. We found that this cycle is affected by one of the positive feedback loop of violence. That is the feedback loop of "Radical group => violence => economic efficiency => supporters for conservative => power of the conservative => pro-capitalist policy => radical group". This feedback loop is activated when the number of Radical group is increased over time as shown in figure 7.
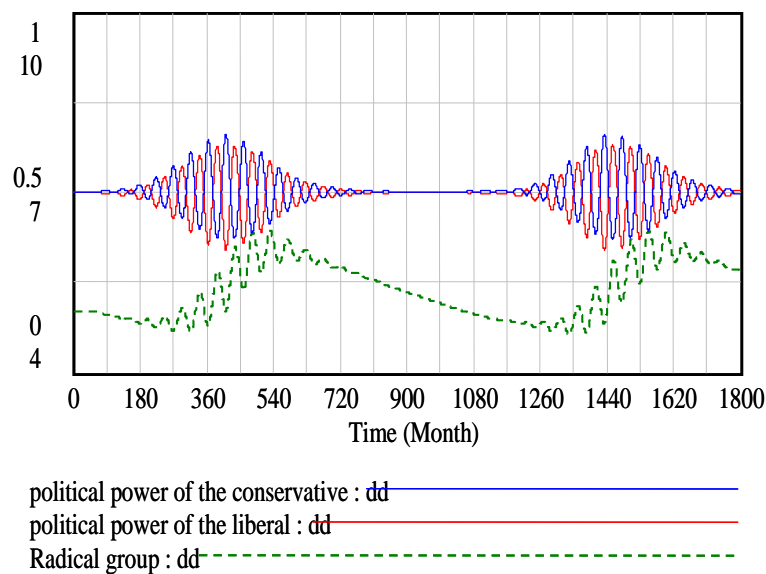

Figure 7. Radical group as a source of long term cycle

exploitation = 5 + step(-0.1, 60)

From this simulation result, we can conjecture that the long cycle of reform comes from the effect of violence on the economic efficiency. As the effect of violence by Radical group on the economic efficiency increases, the gain of the positive feedback loop increases, and this positive loop amplify the small fluctuation. In the peaceful days, the number of radical group is small and thus their violence. But in the days of reform, lots of radical group is accumulated and their violence will become critical in power shifting between the liberal and the conservative.

5. Discussion

Our system dynamics model shows why there are political changes as well as order from the endogenous factors. This model also can be used to look into the strategic implication of public policies.

1) Asymmetry of tolerance

Sometimes tolerance is said as the virtue of political parties toward opponents. In our simulation model, tolerance for the conservative means less exploitative policy, while it means less egalitarian policy for the liberal party.

With several experiments of introducing tolerance for both parties, we found that there are asymmetry of the tolerance effect between the conservative party and the liberal party. Figure 8 shows the simulation result of reducing the exploitation of the conservative from 5 to 3. Less exploitative policy benefits the conservative in the long run. In the new equilibrium, the conservative party will dominate the liberal party.
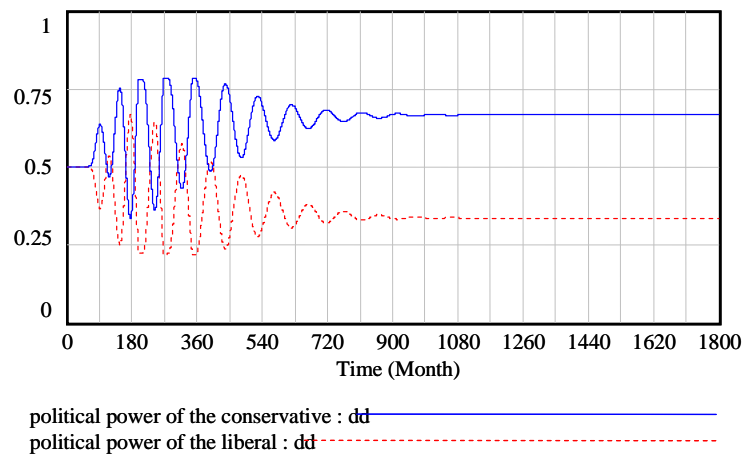

Figure 8. Reducing the exploitation of the conservative from 5 to 3 at 60 month.

On the contrary to the beneficial result for the conservative, the effect of tolerance is ambiguous for the liberal party. When we reduce the equality policy from 5 to 3 at 60 month, the liberal party could get great support at the first time period of around 15 years (180 months). But after that initial period, the conservative and the liberal compete for the power.
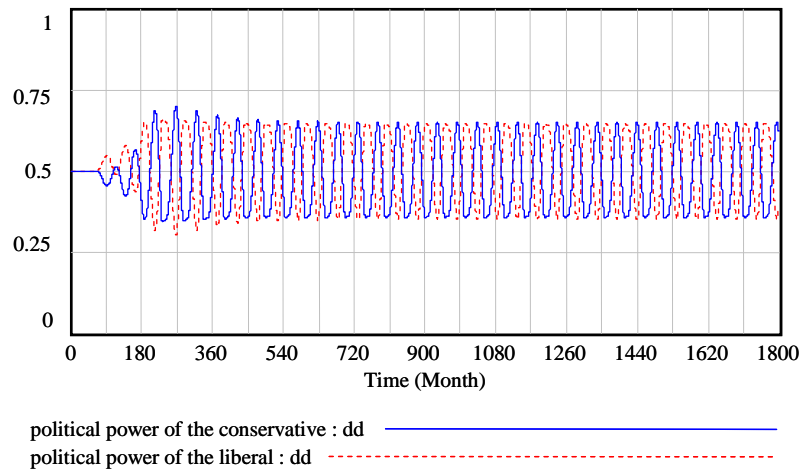
Figure 9. Reducing the equality policy of the liberal from 5 to 3 at 60 month.

Tolerance benefits the liberal party only in short term, while it benefits the conservative in the long run. In this sense, tolerance can be regarded as a virtue of the conservative that can be used in the long time. For the liberal, tolerance is a strategy that should be used in the short term.

2) Violence tendency of the society

If the tolerance is the virtue of the power taker, the non-violence is a virtue required for the people, especially the deprived and the radical group. From the civil right movement in 1960s non-violence is regarded as a crucial leverage for the success of equality policy.

But experiments with our system dynamics model shows that decerase in the violence tendency will benefit the conservative rather than the liberal. If the violence is decreased, the oppression of the conservative will be reduced also. And thus the number of the deprived will be decreased, which will reduce the sympathy for the weak people and thus the number of supporters for the liberal party.
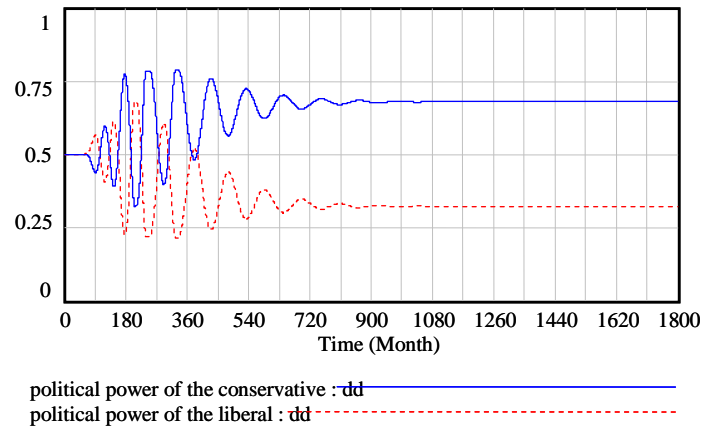
Figure 10. Effect of reducing violence tendency from 0.33 to 0.13 at 60 moth.

Our simulation shows two kinds of system behavior of reducing violence. The first is the long term benefit for the conservative. If we consider this effect only, we can say that non-violence is not beneficial to the liberal party. But the second effect of reducing violence is the cyclic power shift between the conservative and the liberal. This means that decrease in the violence may create new opportunity for the liberal to pursue their reform. By reducing the violence tendency of the people, one can create a chance for re-building power structure between the conservative and the liberal party.

6. Conclusion

Our system dynamics model showed how the endogenous mechanism can explain the political changes as well as orders. Although simple in the causal structure, our model could show a complex behavior of political competition. Several simulation results imply that some unexpected change in election and power competition may come from the endogenous system rather than from exogenous factors.

Our model incorporated some essential ideas raised by the institutional political theories. Although many system dynamicists point out the close relationship between institutional economics and system dynamics (Atkinson 2004, Radzicki 1988), the relationship between institutional political theory and system dynamics approach is not explicated appreciated yet. We hope that our system dynamics model can give a linking pin between institutional political theory and system dynamics.

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