Chapter 10

Optimal Sequence and Speed of Reforms toward Economic Integration

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1. Introduction

While recent research shows that economic integration can alleviate poverty (Winters et al. 2004), it also increase the inequality between the skilled and unskilled workers (Goldberg and Pavcnik 2007). Further, even if economic integration can reduce poverty on average, it creates economic winners and losers. This implies that considering political economy factors of economic integration is important for understanding (1) the potential conflict caused by economic integration and (2) how to avoid it. The political economy of policy reform is developed after observing the series of experience of transition from centrally-planned economies to market-oriented economy in East Europe, China and Vietnam. The first aim of this article is to introduce these arguments and apply to the situation of East Asian economic integration.

On the other hand, economic integration can enhance efficiency through exploiting relative advantage and utilizing international resources such as advanced technology and cheaper capital costs, it entails the reallocation of labor, capital and other economic resources. If there is no friction in the markets, then there would be no efficiency loss and the transition from the old equilibrium to the new equilibrium is at once, but in reality there is frictions in some markets and the transition might not be smooth. This leads to the potential benefit of gradualism. Furthermore, if the government can succeed in reducing such market frictions, then it is expected that the temporary adverse effect of economic integration on the national economy is reduced.

These two arguments suggest that the speed and sequence of economic reform could be an important issue in the course of economic integration from both economic and political economy standpoint. The next section provides the simple model which can help us understand the political economy problem in the course of reforms, followed by the section

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arguing the economic standpoint of optimal speed and sequence of reforms. The last section offers concluding remarks.

2. Optimal Sequence of Economic Integration

Since the any reforms create losers, the opposition from the losers can prevent the effective implementation of reforms which benefit the economy in total. On direct solution to this problem is to give compensating transfers to the losers from reforms. But in general, it is difficult to implement such transfers because it is almost impossible to identify who are the losers and how much the loss of each individual is. It might be possible, though quite difficult, to conduct a national survey on losers and give the "identified" losers an amount of "identified" compensation, but this creates another serious incentive problem. If individuals expect that they can be compensated if their economic outcomes after the reform are bad, then they would have less incentive to make success. This will prevent the reallocation of economic resources from old sectors to new profitable sectors and also reduce the effort for technological progress, with the result that the potential benefits of economic integration and reforms are not materialized.

In this section, we introduce simple models to understand what is the determinants of the optimal speed and sequence of reforms, based on Dewatripont and Roland (1995) and Roland (2000, Chapter 2).

2.1. Big Bang versus Gradualism

First we deal with the issue of big bang approach versus gradualism approach. Should we implement economic and social reforms at once, or should we allow a part of them to implement first and the other part of them to implement later? Economic integration consists of quite a large number of factors: reduction in tariff and other trade barriers, development of economic infrastructure which reduces transportation costs, simplifying the requirement of administrative procedure for export and import, reduce restrictions on foreign direct and portfolio investment, changes in domestic laws due to the commitment for WTO and FTA accession including reducing subsidies to domestic industry and downsizing the state owned enterprises, and so on. Gradualism might be a realistic option given the limited capability of the governments and a large volume of required changes, but here we rather focus on outcome uncertainty of the economic integration as a rationale for gradualism approach. This does not

mean that the capacity limitation is not important. The capacity limitation is indeed an important factor which have delayed policy and institutional changes which is necessary for effective economic integration in East Asia, but here we would like to argue that even if the capacity allows the government to implement the set of required reforms at once, there might be a case in which gradual reforms is optimal.

Consider two reforms toward economic integration, i =1,2 whose outcome depend on states of nature O_{1j} (j =1, 2, …, J) and O_{2k} (k =1, 2, …, K), respectively. O_{1j} and O_{2k} can be regarded as structural characteristics of the economy and international environment which affect the outcomes of economic integration such as its attractiveness for foreign investors, capacity of domestic labors, potential capacity of domestic entrepreneurs, investment strategies of multinational firms, and the degree of market frictions. Let $F(O_{1j},O_{2k})$ be the time-invariant flow payoff for the economy when both reforms are implemented (full reform) and $P(O_{1j})$ is the time-invariant flow payoff when only reform 1 is implemented (partial reform). For the simplicity, we only consider the case in which reform 1 is implemented first under gradualism. If any reform is not enacted, the payoff is zero.

We assume that $P(O_{1j})$ is much less than $F(O_{1j},O_{2k})$ due to the complementarities among the reforms: $P(O_{1j}) << F(O_{1j},O_{2k})$ for all k. But by observing $P(O_{1j})$, the economy can obtain the information on O_1. We denote such a signal observed when implementing reform 1 by S_n, where n =1, 2, …, N. We note that N is not necessarily equal to J and N can be 1, in which case the signal brings no information on O_{1j}. If N =J, then the signal is perfect and we can know precisely about O_{1j}. We seriate signals in terms of the expected payoff of full reform:

$$\underset{j,k}{E}\left[F(O_{1j},O_{2k})\,|\,S_n\right] \geq \underset{j,k}{E}\left[F(O_{1j},O_{2k})\,|\,S_{n'}\right] \quad \text{if } n > n'.$$

After observing the outcome of the reform(s), the government can reverse the reform(s) with costs. Let C be the cost of reversing both reforms and C_1 be the cost of reversing reform 1 only. Assume that reversing both reforms is more costly than reversing only reform 1: $C > C_1 > 0$. For the simplicity of the analysis, we also assume that partial reform is not beneficial per se and it is better to reverse it unless full reform will be implemented: $P(O_{1j}) < -C_1 < 0$. This assumption makes the analysis easier since we only have to compare the outcomes of full reform and non-reform when considering the future state.

First we consider the case of big bang strategy. Assume an infinite horizon with discount rate δ. Since it is possible that the reform is reversed if its outcome is quite negative and reversing the reform is not so costly relative to the present value of the negative future payoff

associated with the reform (e.g. $\frac{F(O_{1j},O_{2k})}{1-\delta} < -C$), the expected payoff of big bang strategy, *BB*, can be written as

$$BB = \underset{j,k}{E}\left[F(O_{1j},O_{2k})\right] + \delta \underset{j,k}{E}\max\left\{-C, \frac{F(O_{1j},O_{2k})}{1-\delta}\right\}. \qquad (1)$$

On the other hand, under gradualism strategy, after observing $P(O_{1j})$, or signal S_n, there can be either a reversal of reform 1 or a move to implement reform 2. After completing the second reform, the economy will enjoy the payoff of $F(O_{1j},O_{2k})$ each period. First consider the stage when reform 1 has been implemented and signal S_n has been observed. The expected payoff of implementing reform 2 evaluated at this stage, $V(S_n)$, can be written as

$$V(S_n) = \underset{j,k}{E}\left[F(O_{1j},O_{2k}) \mid S_n\right] + \delta \underset{j,k}{E}\max\left\{-C, \frac{F(O_{1j},O_{2k})}{1-\delta} \mid S_n\right\}.$$

Since $E_{j,k}\left[F(O_{1j},O_{2k}) \mid S_n\right]$ is increasing in n, define $\underline{n}$ such that $V(S_n) \geq -C_1$ if and only if $n < \underline{n}$. Then the ex ante expected payoff of gradualism strategy, GR_{12}, can be written as

$$GR_{12} = \underset{j}{E}\left[P(O_{1j})\right] + \delta \Pr(n < \underline{n})(-C_1) + \delta \Pr(n \geq \underline{n}) \underset{n \geq \underline{n}}{E}\left[V(S_n)\right], \qquad (2)$$

where $E_{n \geq \underline{n}}\left[V(S_n)\right] \equiv \sum_{m=\underline{n}}^{N} \frac{\Pr(n=m)}{\Pr(n \geq \underline{n})} V(S_m)$. Here notice that

$$E\left[V(S_n)\right] = \Pr(n < \underline{n}) \underset{n < \underline{n}}{E}\left[V(S_n)\right] + \Pr(n \geq \underline{n}) \underset{n \geq \underline{n}}{E}\left[V(S_n)\right]$$

by definition and

$$E\left[V(S_n)\right] = \underset{j,k}{E}\left[F(O_{1j},O_{2k})\right] + \delta \underset{j,k}{E}\max\left\{-C, \frac{F(O_{1j},O_{2k})}{1-\delta}\right\} = BB$$

by the law of iterated expectation.[1] By combining these two expressions, we can obtain

$$\Pr(n \geq \underline{n}) \underset{n \geq \underline{n}}{E}\left[V(S_n)\right] = BB - \Pr(n < \underline{n}) \underset{n < \underline{n}}{E}\left[V(S_n)\right].$$

By using this, we can write (2) as

$$GR_{12} = \underset{j}{E}\left[P(O_{1j})\right] + \delta \Pr(n < \underline{n})(-C_1) + \delta\left\{BB - \Pr(n < \underline{n}) \underset{n < \underline{n}}{E}\left[V(S_n)\right]\right\}$$

$$= \underset{j}{E}\left[P(O_{1j})\right] + \delta BB + \delta \Pr(n < \underline{n})\left\{-C_1 - \underset{n < \underline{n}}{E}\left[V(S_n)\right]\right\}. \qquad (3)$$

Therefore, we can derive the difference in the expected payoff between gradualism and big bang strategy as follows:

[1] The law of iterated expectation states the expected value of the conditional expected value of X given Y is the same as the expected value of X: $E(X|Y) = E(X)$.

$$GR_{12} - BB = \underset{j}{E}\left[P(O_{1j})\right] + \delta \Pr(n < \underline{n})\left\{-C_1 - \underset{n<\underline{n}}{E}\left[V(S_n)\right]\right\} - (1-\delta)BB. \qquad (4)$$

Notice that the first term is always negative by assumption $P(O_{1j}) < -C_1 < 0$. If the adverse shock of partial reform due to complementarities between the two reforms is large, big bang strategy will be preferred. The third term captures the lost benefit (or loss in case of $BB < 0$) of delaying full reform by one period under gradualism strategy. The larger the lost benefit of delaying reform, the more advantage big bang strategy has over gradualism. But if people value the future payoff as much as the present payoff, i.e. δ is close to 1, then this term becomes insignificant. The second term is the most interesting term, which represents the "option value of early reversal." By the definition of $\underline{n}$, $V(S_n) < -C_1$ and there will be reversal after implementing reform 1 under partial reform. Thus $-C_1 - E_{n<n}\left[V(S_n)\right] > 0$ if $\underline{n}$ exists. When the expected payoff of full reform is positive, i.e. $BB > 0$, this is the only term which is positive. This clearly shows that the important merit of gradualism is the possible early reversal after learning the outcomes of reform 1. The option value of early reversal is large when the probability of early reversal is large, i.e. $\Pr(n<\underline{n})$ is large, and when the expected outcome of full reform in case of $n < \underline{n}$ is substantially negative, i.e. $E_{n<n}\left[V(S_n)\right]$ takes a large negative value. $E_{n<n}\left[V(S_n)\right]$ could be large when signal S_n is quite precise and allows people to predict the outcome of full reform correctly since in such cases, bad signals (S_n with $n < \underline{n}$) can pick up the every negative case of $F(O_{1j}, O_{2k})$, which lowers $E_{n<n}\left[V(S_n)\right]$ with keeping $E_{j,k}\left[F(O_{1j}, O_{2k}) \mid S_n\right]$(=$BB$) or $V(S_n)$ constant.

In sum, gradualism strategy can be optimal in circumstances where

(1) option value of early reversal is high (probability of failure is high, the expected outcome in case of failure is substantially negative, or/and signals are very informative),

(2) adverse effect of partial reform due to complementarities is not so large,

(3) the expected benefit of full reform is not so high (or negative), and

(4) people value the future payoff highly,

or where there is a sufficient combination of these. On the other hand, big bang strategy reform can be optimal in circumstances where

(1) option value of early reversal is low (probability of failure is low, the expected outcome in case of failure is not substantially negative, or/and it is very difficult to obtain precise signals on the outcomes of full reform: e.g. if N=1, then the signal

does not contain any information on $O1_j$ and there is no learning, which reduce the option value to zero),

(2) adverse effect of partial reform due to complementarities is sufficiently large,

(3) the expected benefit of full reform is sufficiently high, and

(4) people do not care much about the future payoff highly,

or where there is a sufficient combination of these. Partial reform allows the economy to experiment the reforms since reversing it is not so costly than reversing full reform. This experimentation is valuable as long as implementing partial reform provide informative signals to predict the outcomes of full reform. Because of the option value of early reversal, gradualism can generate higher expected payoff in the circumstances stated above and it is possible to have $GR_{12} > 0 > BB$. If this is the case, gradualism strategy enables the reforms that can not be implemented under big bang strategy to start. Gradualism strategy can make reforms easier to start.

Developing the above model, Dewatripont and Roland (1995) also argue "flexible integration" approach of European integration. A subset of members of the European Union has the right to go ahead and implement a further stage in European integration without obliging other members to participate and on the other hand, nonparticipants do not have the right to exercise a veto over such reforms. This allows the countries who are eager for the next stage of European integration to bear the costs of experimenting with the new stage of integration while the more skeptical countries wait to learn about the outcomes of the reform and can decide to join after uncertainty has been resolved. In the contest of East Asian integration, such "flexible integration" approach has been unintentionally introduced from the start. It is often argued that in East Asia, a de facto economic integration has moved forward through the production networks of transnational corporations, but de jure integration has not taken place (Hiratsuka and Kimura, in press). This de facto economic integration effectively takes the form of "flexible integration" since it does not oblige any country to participate in East Asian integration and no country has a veto power over that. If the integration taken place in East Asia have rigorously required de jure integration which require a number of countries to agree, economic integration in East Asia would not proceed as fast as what it has done. The preceding success of economic integration in other countries help the remaining countries to resolve the uncertainty relating to economic integration and assist them to implement policies toward economic integration at later stages.

2.2. Optimal sequence of reforms toward integration

If gradualism is an optimal strategy, then in what order we should implement a series of reforms? The previous model also helps us understand the optimal sequence of reforms.

For simplicity, we assume that $F(O_{1j},O_{2k}) = O_{1j} + O_{2k}$ and $P(O_{1j}) = O_{1j} - Q$. Reform i has a good outcome $G_i > 0$ with probability p_i and a bad outcome $L_i < 0$ with probability $(1-p_i)$. Thus we can write the expected payoff from reform i as $E_i = p_iG_i + (1-p_i)L_i$. We abuse notation of G_i and L_i to denote the signals relating to reform i. Since here we consider the sequence of reforms, we make minor change in notation. $V_j(S_i)$ is the expected payoff of implementing reform j evaluated after implementing reform i and observing the signal S_i. GR_{ij} is the ex ante expected payoff of gradualism strategy firstly implementing reform i followed by reform j. In order to ensure that the signals are informative, we assume $V_i(G_j) > -C_j > V_i(L_j)$ and $V_j(G_i) > -C_i > V_j(L_j)$ where C_i is the cost of reversing reform i. Since reform j will be reversed if and only if $-C_j > V_i(S_j)$, the above assumption means that further reform i will be implemented if reform j generates good outcome G_j but reform will be reversed if bad outcome L_j is observed.

With these settings, the expected payoff of the ex ante expected payoff of gradualism strategy which firstly implements reform i followed by reform j, a modified version of (2), can be written as

$$GR_{ij} = (E_i - Q) + \delta p_i V_j(G_i) - \delta(1-p_i)C_i \tag{5}$$

where

$$V_j(G_i) = (G_i + E_j) + \delta p_j(G_i + G_j) + \delta(1-p_j)\max\left\{-C, \frac{G_i + L_j}{1-\delta}\right\}. \tag{6}$$

Using these expressions, we focus on three factors which can affect the optimal sequence of reforms: their expected outcomes, riskiness and proportion of benefiting groups.

2.2.1. Differences in Expected Outcome

First we consider the optimal sequence of reforms which differ only in E_i. Especially, we assume that two reforms are identical except that payoffs of reform i are higher than those of reform j by $A > 0$: $G_i = G_j + A$, $L_i = L_j + A$, $C_i = C_j = C_p$, $p_i = p_j = p$. These imply that $E_i = E_j + A$ and

$$V_j(G_i)-V_i(G_j)=\left[(G_i+E_j)-(G_j+E_i)\right]+\delta p\left[(G_i+G_j)-(G_j+G_i)\right]$$
$$+\delta(1-p)\left[\max\left\{-C,\frac{G_i+L_j}{1-\delta}\right\}-\max\left\{-C,\frac{G_j+L_i}{1-\delta}\right\}\right]$$
$$=0.$$

since all of the three terms turn out to be zero in this special case. Thus we can express $GR_{ij} - GR_{ji}$ as

$$GR_{ij}-GR_{ji}=(E_i-E_j)+\delta p\left[V_j(G_i)-V_i(G_j)\right]=A>0.$$

Starting with a reform whose payoffs are higher by A than the payoffs of another reform in any state generate higher expected payoff exactly by A. The advantage of GR_{ij} over GR_{ji} is purely from the benefit of experiencing a better payoff in the first period. The simple model here suggests that it is always better to start with the reform that has the higher expected outcomes.

In addition, consider the case in which two reforms are identical except that probability of good outcomes is higher in reform i than reform j: $G_i = G_j = G$, $L_i = L_j = L$, $C_i = C_j = C_p$, and $p_i > p_j$. These imply that $E_i - E_j = (p_i - p_j)(G - L)$,

$$p_iE_j-p_jE_i=p_i\left[p_jG+(1-p_j)L\right]-p_j\left[p_iG+(1-p_i)L\right]$$
$$=(p_i-p_j)L$$

and

$$p_iV_j(G_i)-p_jV_i(G_j)=\left[p_i(G+E_j)-p_j(G+E_i)\right]+\delta(p_ip_j-p_jp_i)2G$$
$$+\delta\left[p_i(1-p_j)-p_j(1-p_i)\right]\max\left\{-C,\frac{G+L}{1-\delta}\right\}$$
$$=(p_i-p_j)(G+L)+\delta(p_i-p_j)\max\left\{-C,\frac{G+L}{1-\delta}\right\}.$$

Thus we can express $GR_{ij} - GR_{ji}$ as

$$GR_{ij}-GR_{ji}=(E_i-E_j)+\delta\left[p_iV_j(G_i)-p_jV_i(G_j)\right]-\delta\left[(1-p_i)-(1-p_j)\right]C_p$$
$$=(p_i-p_j)(G-L)+\delta\left[(p_i-p_j)(G+L)+\delta(p_i-p_j)\max\left\{-C,\frac{G+L}{1-\delta}\right\}\right]+\delta(p_i-p_j)C_p$$
$$=(p_i-p_j)\left\{(1+\delta)G-(1-\delta)L+\delta\left[\delta\max\left\{-C,\frac{G+L}{1-\delta}\right\}+C_p\right]\right\}$$

Notice that if $G + L > 0$, $GR_{ij} - GR_{ji}$ is always positive. But if $G + L < 0$ and δ is close to 1, then $GR_{ij} - GR_{ji}$ can be negative. Contrary to the previous case, it is not always better to start with the reform that has the higher expected outcomes when $G + L < 0$ and δ is close to 1. This is due to the fact that implementing reform i first will be more likely to generate positive signal G, which induce the nation to implement the second reform. As long as $G + L$ is positive, this effect will benefit the nation. However, if $G + L$ is sufficiently negative and people highly value the future payoff, implementing the reform more likely to succeed first

will make the early reversal less likely to happen and can stuck the economy in an outcome that is worse than status quo if the cost of reversing full reform is very costly.

2.2.2. Differences in Riskiness

Next we consider the relationship between the optimal sequence of reforms and riskiness of the reforms. We consider two reforms which differ only in the gap between a good outcome and a bad outcome: $G_i > G_j$, $L_i < L_j$, $E_i = E_j$, $C_i = C_j = C_p$, $p_i = p_j = p$. These imply that

$$\begin{aligned} V_j(G_i) - V_i(G_j) &= \left[(G_i + E_j) - (G_j + E_i)\right] + \delta p\left[(G_i + G_j) - (G_j + G_i)\right] \\ &\quad + \delta(1-p)\left[\max\left\{-C, \frac{G_i + L_j}{1-\delta}\right\} - \max\left\{-C, \frac{G_j + L_i}{1-\delta}\right\}\right] \\ &= G_i - G_j + \delta(1-p)\left[\max\left\{-C, \frac{G_i + L_j}{1-\delta}\right\} - \max\left\{-C, \frac{G_j + L_i}{1-\delta}\right\}\right], \end{aligned}$$

which is positive since by assumption $G_i - G_j > 0$ and $\max\left\{-C, \frac{G_i+L_j}{1-\delta}\right\} - \max\left\{-C, \frac{G_j+L_i}{1-\delta}\right\} > 0$ because $G_i + L_j > G_j + L_i$. Since we can express $GR_{ij} - GR_{ji}$ as

$$GR_{ij} - GR_{ji} = \delta p\left[V_j(G_i) - V_i(G_j)\right],$$

We can conclude that $GR_{ij} - GR_{ji} > 0$ and thus implementing the risky reform first is the better strategy. This is because introducing the risky reform first increases the option value of early reversal, $\delta\ (1 - p)[-C1 - V_j(L_i)]$ in this case. When the risky reform (large positive payoff when the outcome is good but large negative payoff when the outcome is bad) is enacted first, if its outcome is not favorable, it is easier to take the option of reversal. If the outcome of the risky reform is good, then the total payoff will be still high irrespective of the outcome of the remaining safe reform. On the other hand, if the risky reform is implemented later, the success of the first outcome can be overwhelmed by the bad outcome of the risky reform in the following periods.

2.2.3. The role of heterogeneity in the population

Here we consider the relationship between the distributional impact of each reform and the sequence of reforms. We assume that the both reform is identical in the aggregate sense: $G_i = G_j$, $L_i = L_j$, $C_i = C_j = C_p$, $p_i = p_j = p$. What differs from the previous cases is the introduction of distributional effect. Assume that reform 1 bring an additional positive gain g to two-thirds of the population but hurt the other third by $-2g$. Thus reform 1 benefits a majority. In contrast, reform 2 benefits a minority and is assumed to yield $2g$ for one third of the

population but hurt the remaining two-thirds by $-g$. Thus from the ex ante point of view, these two reforms generate the same expected payoff to the population. But each reform is not ex post distributionally neutral. We assume that $G + L > -C > 2L$ so that the full reform is reversed only in the worst state of nature.

Here we compare the continuation payoff after implementing the first reform. Unlike the previous analysis, we focus on the payoff of the median voter whose preference determine the political outcome since we introduce heterogeneity in the population and it is no longer appropriate to focus only on the aggregate payoff of the economy. When reform 1 is implemented first, the median voter is among those who obtain the additional positive gain g. If outcome G is realized after the first reform, he will vote for continuation if

$$\frac{p(2G+g)+(1-p)(G+L+g)}{1-\delta} > -C_p. \qquad (7)$$

If L is realized, the condition for continuation is

$$\frac{p(G+L+g)+(1-p)C}{1-\delta} > -C. \qquad (8)$$

On the other hand, when reform 2 is implemented first, the median voter is among those who are hurt by reform 2 by g. If outcome G is realized after the first reform, he will vote for continuation if

$$\frac{p(2G-g)+(1-p)(G+L-g)}{1-\delta} > -C_p. \qquad (9)$$

If L is realized, the condition for continuation is

$$\frac{p(G+L-g)+(1-p)C}{1-\delta} > -C_p. \qquad (10)$$

Comparison between (7) and (9) and between (8) and (10) clearly shows that continuation is more difficult when reform 2 is implemented first. Thus in order for reforms to be taken place, we should start with the reform which benefit the majority.

In sum, we have discussed so far that

(1) a reform which generate higher expected payoff should be implemented first (especially in the case of $G + L > 0$),

(2) a more risky reform should be implemented first, and

(3) a reform which benefit a majority should be implemented first.

These provide a hint for understanding how we should implement domestic and regional reforms toward economic integration. It seems to make sense that economic integration in East Asia starts with the expansion of trade and attraction of foreign direct investment since

they are considered to generate higher expected payoffs. However, the fact that de jure integration is delayed might be hard to evaluate since we can regard it as being optimal if de jure integration generates only a small expected gain but also can regard it suboptimal if de jure integration is rather risky in the sense that the gap between a good outcome and a bad outcome is large. If de jure integration is implemented, it will become more difficult to buffer the unfortunate shock of economic integration whereas it will increase payoffs in good states of nature by providing transparence and commitment to economic integration.

However, the results above depends on the assumption of specific form of $F(O_{1j},O_{2k})$ and $P(O_{1j})$, and other assumptions. The observation that financial liberalization, which seems to be a risky reform, is not so advanced can be explained by that policy makers want to implement other reforms beforehand in order to elicit informative signals on the outcome of financial liberalization. Further detailed analysis which clearly focuses on the situation of East Asian economic integration is definitely a necessary step for further understanding of sequence of reforms.

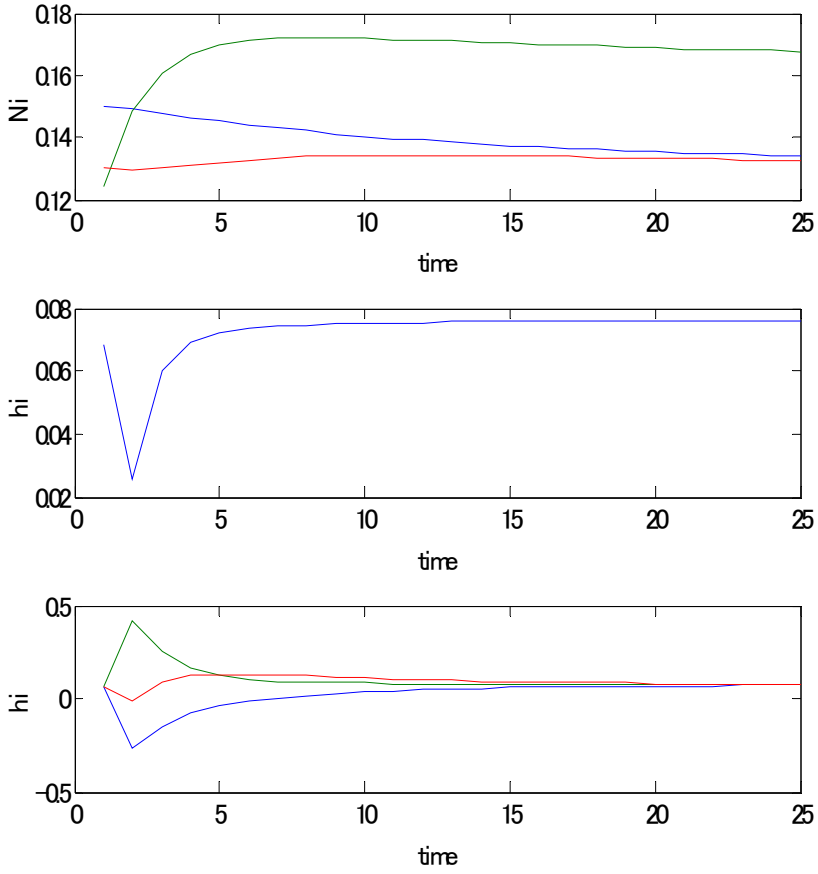
3. Optimal Speed of Economic Integration

Although many theories argue the benefit of trade and economic integration, there are a number of groups and NGOs who make objections against economic integration or globalization. In most cases they concern the possible losses of people who work in the sectors whose competition will become fiercer due to economic integration. In theories arguing the benefit of economic integration, those who lose jobs in shrinking sectors can immediately find jobs in expanding sectors and thus there will be no objection against economic integration. But in reality, rural workers can not become office workers immediately and low skill labors can not become IT experts immediately. It is usual that there are these kinds of frictions in labor market. Such frictions do not have to be confined to labor market. They can also exist in capital market, land market, or other markets. The purpose of this section is to briefly review the discussion of optimal speed of resource allocation among sectors in order to refer to the optimal speed of economic integration in East Asia.

Phelan and Trejos (2000) analyze the dynamic path of labor reallocation due to a permanent shock on demand composition when there are frictions in labor market. They construct a three-sector model. They consider labor reallocation due to a demand composition change from sector 1 to sector 2. Sector 3 do not experience any demand composition shocks.

Figure 1 below describes the socially optimal dynamic path of each sector after the occurrence of permanent shock. The first panel describes the response functions of the socially optimal number of the employed in each sector. The second panel is the total labor input. The last panel depicts the response function of the socially optimal working hours in each sector. In the first panel and the last panel, the blue line depicts the path of sector 1, the green line the path of sector 2, and the red line the path of sector 3.

Figure 1. Response to a permanent shock on demand composition



The first panel shows that the socially optimal number of the employed gradually increases in sector 2 and gradually decreases in sector 1. The optimal path is not a immediate jump to the new steady state but the gradual change toward the new steady state. This is due to the labor market frictions. If the shrinking sector, sector 2 here, cut off their labor immediately, then there will be a large number of the unemployed who do not produce anything because only a part of the unemployed can find a new job at a given period. The second panel shows that the change in demand composition indeed decrease the total labor input in spite of no occurrence of any aggregate negative macro shocks. A part of this is due to the increase in unemployment in sector 1 due to the labor market frictions and another part is due to the increase in the effort for recruiting activities in sector 2 to find new employees. The third panel shows that the working hours indeed increase in sector 2 but decrease in sector 1. Further, the working hours in sector 3 also decrease and the number of the employed in sector 3 also slightly decrease in the first few periods (the first panel, though not so clear from the figure). These have an important implication for economic integration. Economic integration will induce resource allocation among sectors in most cases, and if there are market frictions, then there will be a temporarily increase in unemployment and a resulting decrease in total output.

Maggi and Rodríguez-Clare (2007) construct a political economy model of FTA with imperfect factor mobility between sectors like Phelan and Trejos (2000). They also conclude that the optimal speed of the tariff reduction depends on the degree of factor mobility and that trade agreement should lead to deeper trade liberalization in sectors where factors of production are more mobile.

In sum, if there are unignorable market frictions, then the gradual economic integration strategy will be desirable and the optimal speed of economic integration will depend on the degree of the market frictions or factor mobility. Furthermore, since the low level of market frictions can alleviate the temporary reduction in employment and output, if the government can succeed in reducing such market frictions, then it is expected that the temporary adverse effect of economic integration will be decreased and the increase in employment and output will be observed earlier. Aghion, Burgess, Redding and Zilibotti (2007) analyze the impact of liberalization regarding to firm entry and production activity in India and find that industries located in states with pro-employer labor market institutions grew more quickly than those in pro-worker environments. Since labor market frictions will be larger in pro-worker labor market than in pro-employer labor market, this supports the discussion above: reducing the

market frictions can provide a basis for success in economic integration. Thus we can argue that before economic integration take place, it is necessary to implement policy and institutional reforms which reduce the market frictions in the economy.

4. Conclusion

In this article, we argue the optimal speed and sequence of reforms toward economic integration from the view point of political economy and market frictions. We mainly argued that concerning the speed of reform,

- Gradualism strategy will be preferred when the option value of early reversal is high (probability of failure is high, the expected outcome in case of failure is substantially negative, or/and signals are very informative)
- Gradualism strategy will be preferred when there are unignorable market frictions.

and relating the sequence of reform,

- a reform which generate higher expected payoff should be implemented first (especially in the case of $G + L > 0$),
- a more risky reform should be implemented first,
- a reform which benefit a majority should be implemented first, and
- a reform which reduces market frictions should be implemented first.

In this article we only focus on several issues and our argument is far from comprehensive. As we have argued earlier, the desirable speed and sequence of reform will also depend on the capacity of that country and other factors. Some results of the analysis above also depend on some arbitrary simplifying assumptions. To deepen our understanding of economic integration in East Asia, we need further theoretical models and well designed empirical investigation. Constructing a dynamic general equilibrium model of East Asian countries will also help us to predict the effect of given reforms, which also enable us to discuss the desirable speed and sequence of reforms toward economic integration.

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