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of Adoration Labor

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Abstract

This study theoretically analyzes world revolution by a communist dictatorship in light of the efficiency of resource allocation. The presented results show that a productivity increase by those workers that have been influenced by the propaganda of a revolutionary underground organization in a foreign country leads to an increase in adoration labor to a dictator in a communist host country. An increase in adoration labor to dictators such as Joseph Stalin, Mao Zedong, Kim ilsung, and Kim jongil can thus be interpreted as resulting from the increase in the productivity of those workers influenced by the propaganda espoused by revolutionary underground organizations.

Key words: Communist dictatorship, World revolution, Adoration labor

JEL Classification Codes: P29, P51

1. Introduction

This study analyzes world revolution by a communist dictatorship in light of the efficiency of resource allocation. According to communist theory, workers are exploited by capitalists. Communist theory insists that exploitation explains their state of poverty. Therefore, workers aim to abolish capitalism and create a communist society where no one is exploited and everyone is affluent. To abolish capitalism, workers have to revolt and change capitalist governments across the world.

A dictatorship can be interpreted as a kind of slavery. According to Chwe (1990, p. 1119), victims of violence in worker-firm or similar relationship tend to be poor people that have few alternatives. Fenoaltea (1984) proposed a transaction cost model to allow for varying costs and benefits of supervision, incentives, and rewards in different effort-intensive and stressful activities. He also insisted that land-intensive activities are effort-intensive rather than being stressful and that the supervision of land-intensive activities can easily counter ill will. One of his important conclusions is that supervision, threats, and his levels of anxiety enhance overall productivity in land- and effort-intensive activities but not in

capital-intensive and stressful activities.

To the best of our knowledge, this study is the first attempt to model world revolution by a communist dictatorship. Acemoglu and Robinson (2006) included the possibility of a people's revolution in their dictatorship model, while Kurosaka (2008) proposed a model that incorporated adoration labor to a dictator. Kurosaka (2008) defined adoration labor as the labor devoted to adoration toward the dictator. As for modeling revolution, Grossman (1991) considered the resource allocation problem between labor for defense, labor for attack, and labor for the production of goods.

The presented analysis shows that a productivity increase by a revolutionary organization guided by a dictator in a foreign country leads to an increase in adoration labor to a dictator. It also shows that an increase in the number of underground revolutionary organizations in foreign countries allows a dictator to allocate more adoration labor. The presented findings suggest that the increases in adoration labor in the former Soviet Union, China in the Mao Zedong era, and North Korea were brought about by an increase in the number or size of revolutionary organizations guided by a dictator.

The remainder of this paper is organized as follows. Section 2 briefly explains world revolution by a communist dictatorship. Section 3 provides the model and presents the propositions. Section 4 summarizes the main results and provides areas of future research.

2. World Revolution by a Communist Dictatorship

Communist theory suggests that the capitalist class exploits the working class and commits them to a state of poverty. Thus, the working class aims to abolish exploitation by overthrowing the present capitalist government. To do so, the working class should be led by a communist party that has scientific knowledge of the principles that allow human society to develop, such as historical materialism. To abolish capitalism across the world, communist parties must be organized globally. The Soviet Union, as the first state that abolished exploitation by the capitalist class, was the base of this movement. Joseph Stalin, as the supreme leader of world communism, forced communist parties around the world to adore him and express high loyalty to him (Stalin (1954), pp. 53-54). He defined the Soviet Union as the base of the global communist movement and ordered all communist parties to induce a revolution in their respective countries.

Since the communists that would subsequently come into power would be loyal to Stalin and the Soviet Union, their countries would become satellite states. In many cases, a satellite state is ordered to dedicate many types of resources and goods to the host country, in this case the Soviet Union. From a communist standpoint, the

presentation of resources and goods to the host country is progressive behavior since it contributes to advancing human society. A communist host country should therefore be the leader of the world since exploitation by the capitalist class has been abolished.

Following this line of argumentation, communists in foreign countries promulgate that having a friendly relationship with and donating resources to the communist host country contributes to world peace. If this propaganda were to succeed, residents of western countries would think that their governments should have friendly relations with communist countries and thus donate resources to communist countries to maintain world peace. In this way, communists in foreign countries express loyalty to the communist host country, implying that they have played a similar role to that of revolutionary underground organizations, as explained in more detail later.

In Japan, Kenji Miyamoto (1950, pp. 10), the supreme leader of the Japanese Communist Party (JCP) from 1958 to late 1990s, insisted that JCP members recognize that the communist party of the Soviet Union was theoretically armed by Marxism-Leninism and, Stalinism. He also insisted that members of the JCP be aware that Stalin had led the Soviet Union. This was a clear statement of loyalty to Stalin and the Soviet Union. Ueda (1973, pp. 13) added Stalin's contribution should be properly appreciated since he offered a clear outlook on a socialist revolution and the construction of socialism by one country.¹

In North Korea, Kim Il-sung, a loyal follower of Stalin, defined the government of South Korea as a puppet of U. S. imperialism (see Kim (1966)). From this standpoint, North Korea is the base of the revolutionary movement against the pseudo government of South Korea. To attain this goal, Kim Il-sung created underground revolutionary organizations in South Korea by smuggling armed soldiers and secret agents into the country (see Han (2012)). Kim Il-sung and subsequently Kim Jong-il have also placed underground revolutionary organizations in Japan. Chang (1999), a member of a revolutionary underground organization composed of Korean residents in Japan, witnessed his organization abducting Japanese people and donating considerable sums of money to Kim Il-sung and Kim Jong-il. The abduction of Japanese people means the presentation of human resources to North Korea since abducted Japanese can be used as teachers of the Japanese language and culture to North Korean secret agents, who need to disguise themselves as Japanese in order to avoid detection. Indeed, Kim (2013) insisted that there has been no essential change in this tactic despite North Korea showing superficial friendliness toward the South Korean government.

From the standpoint of resource allocation, we can interpret revolutionary

¹ Ueda was a theoretician of the JCP.

movements by communist parties or underground revolutionary organizations in capitalist countries as aiming to encourage the flow of resources and goods into the communist host country. Following this view, in the present study, we model world revolution by a communist dictatorship.

3. The Model

Consider that the dictator and the people live in a communist host country. People produce goods, such as agricultural products. Labor, denoted by L , is required to produce these goods. The production function is assumed to take the following form, where X denotes output, and A productivity:

$$X = AL^\gamma \quad A > 0 \quad (1)$$

The labor endowment of the people is denoted by $\bar{L}$, and the labor devoted to adoration toward the dictator (termed, adoration labor hereafter), is denoted by $\bar{L} - L$. The dictator permits the people to obtain a certain amount of goods in the economy. Suppose that α is the share of production that a dictator receives, and the rest, $1 - \alpha$, goes to the people. The dictator pays the real wage w for each unit of adoration labor. Thus, the income of the people, Y , is obtained as follows:

$$Y = (1 - \alpha)X + w(\bar{L} - L) \quad (2)$$

We assume that the people's reservation income is given by ω . For the dictator to govern the people under his control, he has to guarantee that they will earn more than the reservation income. The aggregate reservation income is given by $\omega\bar{L}$, and the people's participation constraint is given as follows:

$$(1 - \alpha)X + w(\bar{L} - L) \geq \omega\bar{L} \quad (3)$$

The dictator can drive the people down to their reservation income level. Thus, inequality (3) can be modified into the following:

$$(1 - \alpha)X + w(\bar{L} - L) = \omega\bar{L} \quad (4)$$

Following Acemoglu and Robinson (2006), we assume that the people can revolt, and that after a revolution, a proportion, μ , of society's resources is destroyed and the remainder is divided among the people. After the revolution, the dictator is no longer in power. Therefore, there is no need to continue with adoration labor. Further, post revolution, production can be distributed among the people equally. If

we denote post-revolution income per person as ω^R , we obtain the following:

$$\omega^R = (1 - \mu)A\bar{L}^{\gamma-1} \quad (5)$$

For the dictator to avoid a revolution, he has to guarantee that the people earn more than they would after a revolution. If these two values are equal, we assume that the people do not revolt. Hereafter, we assume that $\omega^R \geq \omega$. Then, the participation constraint of the people is given by the following:

$$(1 - \alpha)X + w(\bar{L} - L) \geq (1 - \mu)A\bar{L}^\gamma \quad (6)$$

For the dictator, there is no incentive to provide the people with more income, as shown in equation (6). Therefore, inequality (6) can be changed as follows:

$$(1 - \alpha)X + w(\bar{L} - L) = (1 - \mu)A\bar{L}^\gamma \quad (7)$$

The people allocate their labor in order to maximize income. The first-order condition for optimization is given by the following:

$$(1 - \alpha)\gamma A\bar{L}^{\gamma-1} = w \quad (8)$$

Considering the participation constraint of the people denoted by equation (7) and the incentive constraint of the people denoted by equation (8), the dictator shows the people their share of production and the real wage for adoration labor. By using equation (7), the net product of the dictator received from the people in the communist host country is obtained as follows:

$$\alpha X - w(\bar{L} - L) = X - (1 - \mu)A\bar{L}^\gamma \quad (9)$$

We assume that the dictator derives utility from his consumption and from the product of adoration labor. We also assume that there is a minimum necessary level of consumption for a dictator, denoted by C^M . If the level of consumption becomes lower than this in equilibrium, the dictator cannot enjoy an extravagant life. We assume that the utility function of the dictator is of the following type:

$$U = g \frac{(C - C^M)^{1-\theta}}{1-\theta} + (1-g) \frac{(\bar{L} - L)^{1-\sigma}}{1-\sigma} \quad 0 < g < 1$$

$$0 \leq \theta \leq 1 \quad 0 \leq \sigma \leq 1 \quad (10)$$

The parameter g denotes the consumption preference of the dictator. The dictator

receives revenue from underground revolutionary organizations in foreign countries since they earn money and resources by managing small organizations and performing many types of political activities. They aim to change the policies of the foreign countries in which they live to those favorable for the communist host country. If the foreign government begins to consider that aiding the communist host country is progressive and peaceful behavior, the foreign government voluntarily sends considerable resources, including financial resources, to the communist host country. This is the objective of the propaganda of revolutionary underground organizations.

The resources sent by revolutionary underground organizations are denoted as X^R . The labor of revolutionary underground organizations, denoted by N , is required to produce these resources, which can be interpreted as resulting from the propaganda espoused by revolutionary underground organizations (termed propaganda labor hereafter). The production function is thus assumed to take the following form, where a denotes productivity:

$$X^R = aN^\varepsilon \quad a > 0 \quad 0 < \varepsilon < 1 \quad (11)$$

Suppose that t is the share of production by revolutionary underground organizations that a dictator receives, and the rest, $1 - t$, goes to these organizations. Parameter a signifies the productivity of propaganda labor by workers in revolutionary underground organizations.

Assume that revolutionary underground organizations manage small organizations in order to conceal their identities. The labor endowment of revolutionary underground organizations is denoted by $\bar{N}$ and the labor devoted to production by small organizations is denoted by $\bar{N} - N$. The production function is assumed to take the following linear form, where a^F denotes productivity:

$$X^F = a^F(\bar{N} - N) \quad a^F > 0 \quad (12)$$

Suppose that δ is the share of production by revolutionary underground organizations that a dictator receives, and the rest, $1 - \delta$, goes to these organizations. The parameter a^F signifies the productivity of a small organization managed by revolutionary underground organizations. The dedication of revolutionary underground organizations to the dictator is $X^R + \delta X^F$. Moreover, revolutionary underground organizations allocate their labor in order to maximize their income as follows:

$$\varepsilon a(1 - t)N^{\varepsilon-1} = (1 - \delta)a^F \quad (13)$$

We assume that there is no participation constraint for revolutionary underground organizations, since they are loyal to and have strong bonds with the dictator. By modifying equation (13), we obtain the following:

$$t = 1 - \frac{(1 - \delta)a^F N^{1-\varepsilon}}{\varepsilon a} \quad (14)$$

The dictator's consumption is the sum of the gifts by the people as well as the revolutionary underground organizations in foreign countries.

$$C = AL^\gamma - (1 - \mu)A\bar{L}^\gamma + \frac{1}{\varepsilon}[\varepsilon a N^\varepsilon - a^F\{\varepsilon \delta \bar{N} + (1 - \delta - \varepsilon \delta)N\}] \quad (15)$$

By using equations (7) and (8), the real wage and share of production in the communist host country are given by the following. We denote an equilibrium level of labor allocated for production as L^* .

$$1 - \alpha = \frac{(1 - \mu)\bar{L}^\gamma (L^*)^{1-\gamma}}{L^* + \gamma(\bar{L} - L^*)} \quad (16)$$

$$w = \gamma A \frac{(1 - \mu)\bar{L}^\gamma}{L^* + \gamma(\bar{L} - L^*)} \quad (17)$$

The structure of the game is summarized as follows. At the beginning, the dictator shows the people the income that they can earn under his control. On recognizing this, the people decide whether to revolt. If a revolution occurs, the dictatorship collapses and the people distribute the produced income equally. If the people decide not to revolt, the dictatorship is sustained. The dictator shows the people their share of production and the real wage for their adoration labor. Based on these values, the people determine their labor allocation to maximize income. Simultaneously, the dictator shows revolutionary underground organizations the share of results based on their use of propaganda. Based on this value, these organizations determine their allocation of labor to maximize income. By using backward induction to solve the game, we obtain a sub-game perfect equilibrium. Specifically, by substituting equation (15) into the dictator's utility function (10), we obtain the following:

$$U = g\left\{\frac{(AL^\gamma - (1 - \mu)A\bar{L}^\gamma + \frac{1}{\varepsilon}[\varepsilon aN^\varepsilon - a^F\{\varepsilon\delta\bar{N} + (1 - \delta - \varepsilon\delta)N\}] - C^M)^{1-\theta}}{1 - \theta} + (1 - g)\frac{(\bar{L} - L)^{1-\sigma}}{1 - \sigma}\right\} \quad (18)$$

The equilibrium level of propaganda labor by revolutionary underground organizations is obtained as the following:

$$N^* = \left[\frac{\varepsilon^2 a}{a^F\{1 - \delta(1 + \varepsilon)\}}\right]^{\frac{1}{1-\varepsilon}} \quad (19)$$

The equilibrium share of results based on the use of propaganda by revolutionary underground organizations is obtained as the following:

$$t^* = \frac{1 - \delta - \varepsilon}{1 - \delta(1 + \varepsilon)} \quad (20)$$

In order for equilibrium to exist, the following inequality needs to be satisfied:

$$\delta < \frac{1}{1 + \varepsilon} \quad (21)$$

Inequality (21) signifies the maximum share of production by a small organization where revolutionary underground organizations present both types of gifts to the dictator. The total amount of gifts offered by revolutionary underground organizations, denoted as T^F , is given by the following:

$$T^F = [a^F\{1 - \delta(1 + \varepsilon)\}]^{\frac{-\varepsilon}{1-\varepsilon}} a^{\frac{1}{1-\varepsilon}} \varepsilon^{\frac{2\varepsilon}{1-\varepsilon}} - a^F\delta\bar{N} \quad (22)$$

Thus, we obtain Propositions 1 and 2.

Proposition 1

In a communist dictatorship in which revolutionary underground organizations in foreign countries presents gifts to the dictator, the equilibrium level of propaganda labor by these organizations increases with the productivity of propaganda labor, but decreases with the share of production and productivity by a small organization managed by these revolutionary organizations.

Proposition 2

In a communist dictatorship in which revolutionary underground organizations in foreign countries presents gifts to the dictator, the total amount of gifts offered by these organizations increases with the productivity of propaganda labor when the share of production by a small organization managed by these revolutionary organizations is positive.

Hence, the equilibrium level of production by the people that maximize the dictator's utility is obtained by the following:

$$\begin{aligned} \gamma A(L^*)^{\gamma-1} g(A(L^*)^\gamma - (1-\mu)A\bar{L}^\gamma + \frac{1}{\varepsilon}[\varepsilon a(N^*)^\varepsilon - a^F\{\varepsilon\delta\bar{N} + (1-\delta-\varepsilon\delta)N^*\} - C^M]^{-\theta} \\ = (1-g)(\bar{L} - L^*)^{-\sigma} \end{aligned} \quad (23)$$

The left-hand side of equation (23) provides the marginal utility of labor from consumption, while the right-hand side provides the marginal utility of adoration labor. For an efficient allocation of labor, both sides must equal. Given that the equilibrium level of propaganda labor is provided by equation (19), we obtain the equilibrium level of labor for production by the people from equation (23). We need to confirm the existence of a solution. The horizontal axis is given by the value of labor allocated for production. We define $F(L)$ as the left-hand side of equation (23) and $G(L)$ as the right-hand side of equation (23). If the following inequality is satisfied, a point of intersection of both graphs exists:.

$$\mu\bar{L} > [\frac{a^F}{\varepsilon A}\{\varepsilon\delta\bar{N} + (1-\delta-\varepsilon\delta)N^*\} - \frac{a}{A}(N^*)^\varepsilon]^\frac{1}{\gamma} \quad (24)$$

Insert Figure 1 around here

The equilibrium level of real wage and share of production in the communist host country are obtained by substituting the equilibrium level of labor for production, L^* into equations (16) and (17). The results of the comparative statics by using the main exogenous variables are summarized in Table 1.

Table1: Labor for production and the main exogenous variables

	A	$\bar{L}$	C^M	μ	g	$\bar{N}$	a	a^F	δ
L^*	$\pm$	+	+	−	+	−	$\pm$	$\pm$	$\pm$

These results can be interpreted as follows. The equilibrium level of labor allocated for production in the communist host country is given by equation (23). If the cost of revolution increases and the other conditions remain unchanged, the marginal utility of consumption decreases. To equate both sides of equation (23), it is imperative that labor allocated for production decreases, causing the marginal utility of consumption to increase. We can similarly interpret the other cases. From these results, we obtain Proposition 3.

Proposition 3

In a communist dictatorship in which revolutionary underground organizations in foreign countries presents gifts to the dictator, the equilibrium level of labor for production increases with the labor endowment of the people, the minimum necessary level of consumption by the dictator, and the dictator's consumption preferences. It also decreases with the cost of revolution and labor endowment of revolutionary underground organizations in foreign countries. Productivity and the share of production by a small organization managed by these revolutionary underground organizations have an ambiguous effect on labor allocation, however.

From these results, we can conclude that a decrease in labor endowment because of a severe famine in a communist host country, for example, incentivizes the dictator to decrease labor for production and increase adoration labor. An increase in the number of underground revolutionary organizations also incentivizes the dictator to decrease labor for production and increase adoration labor. Hence, an increase in adoration labor to dictators such as Stalin, Mao Zedong, Kim ilsung, and Kim jongil can be interpreted as resulting from a productivity increase in propaganda labor by revolutionary underground organizations. As stated before, an increase in the cost of revolution, which might be caused by strengthening security organizations, such as the KGB and National Security Police in China and North Korea, forces the dictator to increase adoration labor. Strengthening security organizations can thus be interpreted as intensifying adoration labor in the communist host country.

3. Concluding Remarks

In the present study, we analyzed world revolution by a communist dictatorship in light of the efficiency of resource allocation. Our results showed that a productivity increase in propaganda labor by revolutionary underground organizations in foreign countries leads to an increase in adoration labor to a dictator in a communist host country. An increase in adoration labor to dictators such as Stalin, Mao Zedong, Kim ilsung, and Kim jongil can thus be interpreted as resulting from a productivity increase in propaganda labor by revolutionary underground organizations.

Our limitation of this study is that we did not analyze the effects of the repression or arrest of members of revolutionary underground organizations by foreign governments. The success of any revolution in foreign countries depends on how revolutionary underground organizations evade these threats. Future research should thus aim to analyze the economic effect of such repression or arrest by foreign governments.

Mathematical appendix

The main results for the calculation of comparative statics on the equilibrium level of labor for production are as follows:

$$\frac{\partial^2 U}{\partial L^2} = U_{LL} = -\theta g(C - C^M)^{-\theta-1} (\gamma A)^2 L^{2\gamma-2} + g(C - C^M)^{-\theta} \gamma (\gamma - 1) A L^{\gamma-2} - \sigma(1 - g)(\bar{L} - L)^{-\sigma-1} < 0$$

$$\frac{\partial^2 U}{\partial L \partial A} = U_{LA} = g(C - C^M)^{-\theta-1} \gamma L^{\gamma-1} [(1 - \theta)A\{L^\gamma - (1 - \mu)\bar{L}\} + T^F - C^M]$$

$$\frac{\partial L^*}{\partial A} = -\frac{U_{LA}}{U_{LL}}$$

$$\frac{\partial^2 U}{\partial L \partial \bar{L}} = U_{L\bar{L}} = \sigma(1 - g)(\bar{L} - L)^{-\sigma-1} > 0$$

$$\frac{\partial L^*}{\partial \bar{L}} = -\frac{U_{L\bar{L}}}{U_{LL}} > 0$$

$$\frac{\partial^2 U}{\partial L \partial C^M} = U_{LCM} = \theta g(C - C^M)^{-\theta-1} \gamma A L^{\gamma-1} > 0$$

$$\frac{\partial L^*}{\partial C^M} = -\frac{U_{LCM}}{U_{LL}} > 0$$

$$\frac{\partial^2 U}{\partial L \partial \mu} = U_{L\mu} = -\theta g(C - C^M)^{-\theta-1} \times A\bar{L} < 0$$

$$\frac{\partial L^*}{\partial \mu} = -\frac{U_{L\mu}}{U_{LL}} < 0$$

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Figure 1

