Reducing the Inflow of Unskilled Foreign Workers

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Abstract
This paper investigates the effects of minimum wages on the inflow of unskilled foreign workers in a two-country macroeconomic model. We assume that all workers are unskilled and workers move from a country of lower expected real-consumption wages to a country of higher ones. This paper shows that, in cases where minimum wages are not introduced, workers move from a country with a larger domestic labor force to a country with a smaller one. If minimum wages are introduced into a country with a smaller domestic labor force, such migration can probably be reduced.

JEL Classification: F41; F22; J38

Keywords: International migration of unskilled labor; Minimum wages; Two-country macroeconomic model

1. Introduction

Today most workers moving among countries are unskilled workers migrating from developing countries to developed countries. Many developed countries are now experiencing large inflows of unskilled foreign workers. It is reasonable for un-skilled workers to migrate, since working conditions in their home countries are inferior to those in developed countries. However, many developed countries, including Japan where about 80% of foreign workers are estimated to be unskilled, are reluctant to accept unskilled foreign workers, while welcoming skilled foreign work-

ers[1]. This is because the large inflow of unskilled foreign workers is likely to help preserve low-wage industries and hinder the improvement of working conditions and labor productivity[2]. For these reasons, many developed countries are trying to reduce the inflow of unskilled foreign workers, mainly by implementing immigration control laws and government regulations. However, such laws and regulations are not always effective in reducing the inflow of unskilled foreign workers, since, as mentioned earlier, seeking better working conditions is rational behavior, which is difficult to control. Accordingly, we need to examine this problem in terms of economics and have to find a way to reduce the inflow of unskilled foreign workers by considering the rationality of their behavior.

International migration of labor is strongly connected with open macroeconomies. It has close relations to markets in macroeconomies, exchange rates and policy authorities' behavior. However, it has not been sufficiently analyzed in the context of open macroeconomic frameworks except by Agiomirgianakis (1998). Since the inflow of unskilled foreign workers is one of the most serious migration problems and we are trying to reduce it by governmental economic policies, we need to employ open macroeconomic models for the analysis.

Therefore we focus in this paper on the reduction of unskilled foreign workers' inflow in an open macroeconomic model. In particular, we explore the effectiveness of policy authorities' manipulation of minimum wages. For this purpose, we assume a two-country economy with different domestic labor forces in the absence of international migration of labor (different initial labor endowments) and workers migrating between two countries because of differences in expected real-consumption wages, that is, nominal wages divided by the consumer price index and multiplied by the employment probability.

Our analysis shows that unskilled workers migrate from a foreign country with a larger domestic labor force to a home country with a smaller one if there are no minimum wages. This is because the home country with a smaller domestic labor force has higher nominal wages and a lower consumer price index, which implies that it has higher expected real-consumption wages. And unskilled workers are assumed to migrate from a country with lower expected real-consumption wages to a country with higher ones. If minimum wages are introduced into the home country with a smaller domestic labor force, the home country can reduce unskilled workers' immigration from the foreign country with a larger domestic labor force by

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1. Ministry of Health, Labour and Welfare, Japan (2002).
2. In Japan, the government formally takes the position of not accepting unskilled foreign workers. Actually, many unskilled foreign workers continue to enter Japan as foreign students or foreign trainees.

increasing the home country's minimum wages. This is because, by increasing minimum wages, the home country with a smaller domestic labor force reduces its employment probability and increases its real-consumption wages, and the former effects are stronger than the latter effects.

In what follows, we first set out a two-country economic framework with different domestic labor forces between two countries and assume factors initiating international migration of labor. We then examine how unskilled workers migrate between two countries in the case where minimum wages are not introduced and we also examine the effects of minimum wages on unskilled foreign workers' immigration. We finish the paper with a discussion of the implications of our findings.

2. The Model

We consider a two-country economic model where home and foreign countries are almost symmetric in their economic structures. They are interdependent through international trade in goods and international migration of labor. In each country, there are unskilled workers, a firm and a policy authority. The model, however, disregards skilled workers and labor unions.

Each country's labor market is perfectly competitive in a case where minimum wages are not introduced. In such a case, each country's nominal wages and employment levels are determined to equalize labor demand and labor supply.

Workers can move between the two countries. In a case where workers born in a foreign country migrate to a home country, the home country's labor force consists of workers born in home and foreign countries. In another case where workers born in the home country migrate to the foreign country, the foreign country's labor force consists of workers born in foreign and home countries.

In each country, a firm demands labor to produce a single kind of product. The home country's product (Foreign country's product) is not only demanded in the home country (the foreign country) but also in the foreign country (the home country), and is exported there. The home and foreign countries' products are imperfect substitutes.

We assume that each country has its money market and money is the only financial asset held by its domestic residents.

The model is summarized by Equations (1)-(7). Structural equations of this paper are the same as those employed by Jensen (1993), Zervoyianni (1997), Agiomirgianakis (1998) and Shimada (2000). Variables are expressed in logs unless otherwise defined. Variables without stars refer to the home country and variables with stars refer to the foreign country.

$$y = al, \ y^* = al^*, \ 0 < a < 1. \tag{1}$$

$$1 = -\frac{1}{1-a}(w-p) + \frac{1}{1-a}\ln a, \ l^* = -\frac{1}{1-a}(w^*-p^*) + \frac{1}{1-a}\ln a. \tag{2}$$

$$z \equiv e + p^* - p. \tag{3}$$

$$y - y^* = bz, \ b > 0. \tag{4}$$

$$q \equiv p + cz, \ q^* \equiv p^* - cz, \ 0 < c < 1/2. \tag{5}$$

$$w_c \equiv w - q, \ w_c^* \equiv w^* - q^*. \tag{6}$$

$$m = p + y, \ m^* = p^* + y^*. \tag{7}$$

Eq. (1) is the production functions of the home and foreign countries' firms, where y is output of the home country's firm (the home country's national product), y^* is output of the foreign country's firm (the foreign country's national product), l is the home country's employment level, l^* is the foreign country's employment level, and α is a constant not expressed in the log. Eq. (2) is the labor demand functions of home and foreign countries' firms, where w is the home country's nominal wage, w^* is the foreign country's nominal wage, p is the home country's product price and p^* is the foreign country's product price. They are derived from the profit maximization of each country's firm. Eq. (3) is the definition of the real exchange rate z, where e is the nominal exchange rate measured as units of home country's currency per unit of foreign country's currency. Eq. (4) is the equilibrium condition of both countries' trade balances, where b is a constant not expressed in the log. If the real exchange rates have stronger effects on the trade balance than the difference in the two countries' national product, then b is larger than 1.[3] Eq. (5) is definitions of the

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3. The home country's trade balance TB and the foreign country's trade TB^* are defined as,
$TB = -TB^* = \alpha_1 z - \alpha_2(y - y^*), \ \alpha_1, \alpha_2 > 0,$ where α_1 and α_2 are constants not expressed in logs. The equilibrium of both countries' trade balances requires $y - y^* = (\alpha_1/\alpha_2)z$.

   Replacing α_1/α_2 with b, we get Eq. (4). In a case where the real exchange rates have stronger effects on the trade balance than the difference in the two countries' national product, α_1 is larger than α_2 implying b is larger than 1. In another case where the difference in the two countries' national product has stronger effects on the trade balance than the real exchange rates, α_2 is larger than α_1 implying b is smaller than 1.

home country's consumer price index q and the foreign country's consumer price index q^*, where c is a constant not expressed in the log.[4] Eq. (6) is definitions of the home country's real-consumption wages w_c and the foreign country's real-consumption wages w_c^*. Eq. (7) is the equilibrium conditions of home and foreign countries' money markets, where m is the home country's money stock and m^* is the foreign country's money stock. We assume that each country's policy authority does not manipulate its money stock, which implies m and m^* are constants throughout the analysis.[5]

In this paper, workers are assumed to migrate because of differences in expected real-consumption wages between two countries. Assuming workers in each country have the same employment opportunity, in other words, native and foreign workers in the same country have the same employment probability, if the home country's expected real-consumption wages $l - l^f + w_c$ are higher than the foreign country's expected real-consumption wages $l^* - l^{*f} + w_c^*$, then workers born in the foreign country migrate to the home country by $d\{l - l^f + w_c - (l^* - l^{*f} + w_c^*)\}$, where l^f is the home country's effective labor force, l^{*f} is the foreign country's effective labor force and d is a positive constant not expressed in the log.[6] On the other hand, if the foreign country's expected real-consumption wages are higher than those in the home country, then workers born in the home country migrate to the foreign country by $d\{l^* - l^{*f} + w_c^* - (l - l^f + w_c)\}$.

Assumptions on international migration of labor lead to the following definitions of the home country's effective labor force l^f and the foreign country's effective labor force l^{*f}.

$$l^f \equiv \bar{l} + d\{l - l^f + w_c - (l^* - l^{*f} + w_c^*)\}, \tag{8.1}$$

$$l^{*f} \equiv \bar{l}^* + d\{l^* - l^{*f} + w_c^* - (l - l^f + w_c)\}, \tag{8.2}$$

where $\bar{l}$ is the home country's domestic labor force in the absence of international

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4. The home country's consumer price index not expressed in the log is $P^{1-c} (EP^*)^c$ and the foreign country's consumer price index not expressed in the log is $P^{*1-c} (P/E)^c$, where $P \equiv \exp p$, $E \equiv \exp e$ and $P^* \equiv \exp p^*$. The home (foreign) country's residents are assumed to have a preference for home (foreign) country's goods so that $0 < c < 1/2$.

5. In this paper, the policy authorities' role is limited to manipulating minimum wages. See section 3.

6. Unskilled foreign workers' evaluations of expected real-consumption wages are different depending on their attitudes toward risks. This paper assumes that unskilled foreign workers are risk-averse. However, as pointed out by a referee, some of them are not risk-averse and move to wealthy countries even if the employment probability in those countries is low.

migration of labor (the home country's initial labor endowment) and $\bar{l}^*$ is the foreign country's domestic labor force in the absence of international migration of labor (the foreign country's initial labor endowment). This paper assumes that $\bar{l}$ is smaller than $\bar{l}^*$.[7] The two countries' economic structures are symmetrical except for the difference in their domestic labor forces.

Through appropriate substitutions, Eqs. (1)-(7) can be solved for l, l^*, y, y^*, p, p^*, z, q, q^*, w_c, w_c^* as functions of w, w^*, m, m^*.

$$l = m - w + \ln a. \tag{9.1}$$

$$l^* = m^* - w^* + \ln a. \tag{9.2}$$

$$y = a(m - w) + a \ln a. \tag{9.3}$$

$$y^* = a(m^* - w^*) + a \ln a. \tag{9.4}$$

$$p = (1 - a)m + aw - a \ln a. \tag{9.5}$$

$$p^* = (1 - a)m^* + aw^* - a \ln a. \tag{9.6}$$

$$z = \frac{a}{b}\{m - w - (m^* - w^*)\}. \tag{9.7}$$

$$q = \left(-a + \frac{ac}{b}\right)(m - w) + m - \frac{ac}{b}(m^* - w^*) - a \ln a. \tag{9.8}$$

$$q^* = \left(-a + \frac{ac}{b}\right)(m^* - w^*) + m^* - \frac{ac}{b}(m - w) - a \ln a. \tag{9.9}$$

$$w_c = \left(1 - a + \frac{ac}{b}\right)(w - m) - \frac{ac}{b}(w^* - m^*) + a \ln a. \tag{9.10}$$

$$w_c^* = \left(1 - a + \frac{ac}{b}\right)(w^* - m^*) - \frac{ac}{b}(w - m) + a \ln a. \tag{9.11}$$

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7. Shimada (2001) explicitly introduced capital stock and labor into the model as factors of production and investigated the effects of international migration on the per capita income differences in the case where two countries have different capital stocks and initial labor endowments.

Substituting labor demand functions (Eq. 2) into production functions (Eq. 1), we obtain aggregate supply functions that positively relate the product price to output in each country. As money stocks increase, the curves equilibrating money markets (Eq. 7) shift upward to the right, resulting in increases in output and product prices (see Eqs. 9.3-9.6). Increases in nominal wages shift the aggregate supply curves upward to the left, causing decreases in output and increases in product prices (see Eqs. 9.3-9.6). Since each country's output is an increasing function of each country's employment level, the employment levels increase as we increase money stocks and decrease as we increase nominal wages (see Eqs. 9.1 and 9.2).

Increases in the home country's money stock and/or decreases in the home country's nominal wages decrease the home country's net exports by increasing its output. Decreases in the foreign country's money stock and/or increases in its nominal wages increase the foreign country's net exports by decreasing its output. To keep the equilibrium of both countries' trade balances, real exchange rates have to depreciate, in other words, z has to increase (see Eq. 9.7).

Increases in the home country's money stock not only increase the home country's product price, but also increase the foreign country's product price expressed in terms of the home country's currency by increasing its output and depreciating real exchange rates (increasing z). Accordingly, increases in the home country's money stock lead to increases in the home country's consumer price index (see Eq. 9.8). On the other hand, decreases in home country's nominal wages decrease the home country's product price, while they increase the foreign country's product price expressed in terms of the home country's currency by increasing its output and depreciating real exchange rates (increasing z). Accordingly, the effects of the home country's nominal wages on its consumer price index are ambiguous (see Eq. 9.8).

Increases in the foreign country's money stock and/or decreases in its nominal wages decrease the foreign country's product price expressed in terms of the home country's currency by increasing the foreign country's output and appreciating real exchange rates (decreasing z). Accordingly increases in the foreign country's money stock and/or decreases in its nominal wages lead to decreases in the home country's consumer price index (see Eq. 9.8).

Therefore increases in the home country's money stock, decreases in the foreign country's money stock and/or increases in the foreign country's nominal wages bring about decreases in the home country's real-consumption wages by increasing the home country's consumer price index (see Eq. 9.10).

Increases in the home country's nominal wages increase its real-consumption wages directly. They also increase its real-consumption wages by appreciating real

exchange rates (decreasing z) and decreasing its consumer price index. On the other hand, increases in the home country's nominal wages decrease its real-consumption wages by increasing its product price and its consumer price index. Since the former two effects are stronger than the latter effects, increases in the home country's nominal wages lead to increases in its real-consumption wages (see Eq. 9.10).

We can explain Eqs. (9.9) and (9.11) in the same way as we do Eqs. (9.8) and (9.10).

3. Minimum Wages and International Migration of Labor

In this section, we first try to show that in the absence of minimum wages, workers in the foreign country with a larger domestic labor force migrate to the home country with a smaller domestic labor force, then we introduce minimum wages into the home country and investigate their effects on migration of foreign country's workers to the home country.

In the case where minimum wages are not introduced, all of the effective labor force are employed in each country, consequently Eqs. (8.1) and (8.2) are rewritten as,

$$l^f \equiv \bar{l} + d(w_c - w_c^*), \tag{8.1'}$$

$$l^{*f} \equiv \bar{l}^* + d(w_c^* - w_c). \tag{8.2'}$$

From the equilibrium condition of the home country's labor market $l=l^f$, the equilibrium condition of the foreign country's labor market $l^*=l^{*f}$ and Eqs. (9.1), (9.2), (9.10), (9.11), we get the following equations.

$$\left\{1 + d\left(1 - a + \frac{2ac}{b}\right)\right\}(m-w) - d\left(1 - a + \frac{2ac}{b}\right)(m^* - w^*) = \bar{l} - \ln a. \tag{10}$$

$$-d\left(1 - a + \frac{2ac}{b}\right)(m-w) + \left\{1 + d\left(1 - a + \frac{2ac}{b}\right)\right\}(m^* - w^*) = \bar{l}^* - \ln a. \tag{11}$$

Substituting $m-w$ and $m^* - w^*$ solved from Eqs. (10) and (11) into Eqs. (9.10), (9.11), (8.1)' and (8.2)', we get both countries' effective labor forces in the absence of minimum wages.

$$l^f = \bar{l} + d\left(1 - a + \frac{2ac}{b}\right)\left\{1 + 2d\left(1 - a + \frac{2ac}{b}\right)\right\}^{-1}(-\bar{l} + \bar{l}^*). \tag{12.1}$$

$$l^{*f} = \bar{l}^* + d\left(1 - a + \frac{2ac}{b}\right)\left\{1 + 2d\left(1 - a + \frac{2ac}{b}\right)\right\}^{-1}(-\bar{l}^* + \bar{l}). \tag{12.2}$$

Eqs. (12.1) and (12.2) show that l^f is larger than $\bar{l}$ and l^{*f} is smaller than $\bar{l}^*$ under the assumption $\bar{l} < \bar{l}^*$. This implies that workers born in the foreign country migrate to the home country. We can explain this result as follows. The smaller initial labor endowment of the home country makes its employment level and output smaller than those of the foreign country. This implies that the home country's nominal wages are higher than the foreign country's nominal wages and the appreciation of the real exchange rates. Since $z < 0$, the home country's consumer price index is lower than the foreign country's consumer price index, if the product prices do not differ between two countries. On the other hand, the home country's product price is higher than the foreign country's product price. Since the former two effects are stronger than the latter effects, the home country's real-consumption wages are higher than the foreign country's real-consumption wages[8, 9]. Therefore it is rational for many of the foreign country's workers to migrate to the home country.

We have shown that the home country faces the inflow of unskilled workers from the foreign country. Let us investigate whether the home country's policy authority can reduce the inflow by manipulating its minimum wages. For this purpose, we assume two things. One assumption is that the home country's policy authority determines the value of the minimum wage w_{min} to be equal to or higher than the nominal wage that equalizes labor demand and labor supply. Another assumption is that the home country's firm sets its nominal wages to be equal to minimum wages.[10] Under these assumptions, the home country's employment level is determined by the labor demand of the home country's firm and it is possible that some of the home country's effective labor force will not be employed.[11]

Since not all of the home country's effective labor force are employed and all of the foreign country's effective labor force are employed, Eqs. (8.1) and (8.2) are rewritten as,

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8. From Eqs. (9.10), (9.11), (9.1) and (9.2), the difference in real-consumption wages between two countries is $w_c - w_c^* = -(1 - \alpha + 2\alpha c/b)(l - l^*)$. Before migration, w_c is higher than w_c^* since $l - l^* = \bar{l} - \bar{l}^*$ and $\bar{l} < \bar{l}^*$.

9. In this paper migration does not equalize real-consumption wages between two countries. We can explain this as follows. Let us assume that real-consumption wages are equalized by migration. Equilibrium conditions of labor markets and $\bar{l} + d(w_c - w_c^*) = m - w + \ln a$, and $\bar{l}^* + d(w_c^* - w_c) = m^* - w^* + \ln a$, imply that $m - w$ and $m^* - w^*$ take different values, since $\bar{l} < \bar{l}^*$. However, if $m - w$ and $m^* - w^*$ are different, real-consumption wages take different values between two countries according to Eqs. (9.10) and (9.11).

10. Of course, this is not the only way for the home country's firm to set its nominal wages.

11. The profit of the home country's firm does not change provided the home country's employment level is determined by the labor demand of the home country's firm.

$$l^f = \bar{l} + d(l - l^f + w_c - w_c^*), \tag{8.1''}$$

$$l^{*f} = \bar{l}^* + d\{w_c^* - (l - l^f + w_c)\}. \tag{8.2''}$$

From Eqs. (8.1''), (9.1), (9.10) and (9.11), the home country's effective labor force becomes,

$$l^f = \frac{1}{1+d}\bar{l} - \frac{d}{1+d}\left(-a + \frac{2ac}{b}\right)(m - w_{\min}) + \frac{d}{1+d}\ln a + \frac{d}{1+d}\left(1 - a + \frac{2ac}{b}\right)(m^* - w^*). \tag{13}$$

Substitution of Eqs. (9.11), (9.1), (13) and (9.10) into Eq. (8.2'') and the equilibrium condition of the foreign country's labor market $l^* = l^{*f}$ give us,

$$m^* - w^* + \ln a$$

$$= \bar{l}^* + \frac{d}{1+d}\bar{l} - \frac{d}{1+d}\ln a + \frac{d}{1+d}\left(-a + \frac{2ac}{b}\right)(m - w_{\min}) - \frac{d}{1+d}\left(1 - a + \frac{2ac}{b}\right)(m^* - w^*). \tag{14}$$

Substituting $m^* - w^*$ solved as a function of $m - w_{\min}$ into the right-hand sides of Eqs. (13) and (14), we get both countries' effective labor forces in the case where minimum wages are introduced into the home country.

$$l^f = \bar{l} + \frac{d}{1+d}\left\{1 + \frac{d}{1+d}\left(1 - a + \frac{2ac}{b}\right)\right\}^{-1}\left\{-\bar{l} + \bar{l}^* - \left(-a + \frac{2ac}{b}\right)(m - w_{\min}) - \left(-a + \frac{2ac}{b}\right)\ln a + \left(-a + \frac{2ac}{b}\right)\bar{l}^*\right\}. \tag{15.1}$$

$$l^{*f} = \bar{l}^* - \frac{d}{1+d}\left\{1 + \frac{d}{1+d}\left(1 - a + \frac{2ac}{b}\right)\right\}^{-1}\left\{-\bar{l} + \bar{l}^* - \left(-a + \frac{2ac}{b}\right)(m - w_{\min}) - \left(-a + \frac{2ac}{b}\right)\ln a + \left(-a + \frac{2ac}{b}\right)\bar{l}^*\right\}. \tag{15.2}$$

Before examining the effects of manipulations of minimum wages, let us consider a special case where the home country's policy authority sets the value of the minimum wage to be equal to the home country's equilibrium nominal wage. In this case, all of the effective labor force are employed in both countries. In such a case, Eqs. (15.1) and (15.2) coincide with Eqs. (12.1) and (12.2) respectively and workers born in the foreign country migrate to the home country.

We then raise the home country's minimum wages from the home country's equilibrium nominal wage. According to Eq. (15.1), their effects on the home country's effective labor force are ambiguous. However, if $b > 1$, then increases in the

home country's minimum wages decrease the home country's effective labor force.[12] This result can be explained as follows. As we increase the home country's minimum wages, the employment probability in the home country $l - l^f$ decreases, while the difference in real-consumption wages between two countries $w_c - w_c^*$ increases.[13] If $b > 1$, then the former effects are stronger than the latter effects, which implies that the difference between the home country's expected real-consumption wages and the foreign country's real-consumption wages becomes smaller as we increase home country's minimum wages. Therefore in the case $b > 1$, fewer unskilled workers migrate from the foreign country to the home country as the home country's minimum wages increase.[14] In other words, under the condition $b > 1$, the foreign country's workers can get higher real-consumption wages by migrating to the home country. However, if they migrate to the home country, their employment probability becomes smaller as minimum wages increase. Consequently it is rational for many of the foreign country's workers not to migrate to the home country.

On the other hand, if $b < 1$, then the increases in the home country's minimum wages increase the home country's effective labor force and decrease the foreign country's effective labor force. This result implies that in the case $b < 1$, more unskilled workers migrate from the foreign country to the home country as the home country's minimum wages increase.

Results derived above are summarized as follows. If $b > 1$, then the home country can reduce unskilled workers' immigration from the foreign country by increasing the home country's minimum wages. On the other hand, if $b < 1$, then increases in the home country's minimum wages encourage unskilled workers' immigration from the foreign country.

Whether b is larger than 1 or not, that is, whether the real exchange rates have stronger effects on the trade balance than the difference in two countries' national product or not is an empirical problem. However, according to Agiomirgianakis (1998, footnote 9), for most countries empirical evidence suggests that the real exchange rates have stronger effects and this allows us to conclude $b > 1$. Therefore it is very likely that by increasing its minimum wages, the home country can reduce the inflow of unskilled workers from the foreign country.[15]

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12. $dl^f / dw_{min} = d(1+d)^{-1}\{1+d(1+d)^{-1}(1 - \alpha + 2\alpha c/b)\}^{-1}(- \alpha + 2\alpha c/b)$. If $b > 1$, then $dl^f / dw_{min} < 0$.
13. $d(l - l^f)/dw_{min} = - \{1+d(1+d)^{-1}(1 - \alpha + 2\alpha c/b)\}^{-1}\{2d(1+d)^{-1}(1 - \alpha + 2\alpha c/b)+d(1+d)^{-1}\} < 0$.
$d(w_c - w_c^*)/dw_{min} = \{1+d(1+d)^{-1}(1 - \alpha + 2\alpha c/b)\}^{-1}(1+2d)(1+d)^{-1}(1 - \alpha + 2\alpha c/b) > 0$.
14. If the home country's policy authority continues to increase its minimum wages, it will soon happen that the home country's workers will migrate to the foreign country.
15. Increases in the home country's minimum wages might have negative effects on unskilled native workers' employment, if native and foreign workers have the same employment probability as as-

4. Conclusions

Many developed countries are now suffering from the inflow of unskilled foreign workers. However, it is difficult for these countries to prevent this inflow only by immigration control laws and government regulations, since it is rational for unskilled foreign workers to migrate to countries where they can get better working conditions. Using an open macroeconomic framework, this paper tried to find a way to reduce the inflow of unskilled foreign workers by considering the rationality of their behavior. This paper showed that it is very likely a home country with a smaller domestic labor force can reduce the inflow of unskilled workers from a foreign country with a larger domestic labor force by increasing the home country's minimum wages. Our result suggests that if we want to reduce the inflow of unskilled foreign workers effectively, we should utilize means that appeal to the workers' rational behavior as well as measures such as laws and regulations that do not appeal to the workers' rational behavior.

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sumed in this paper. However, in actual economies, unskilled native workers are likely to have a higher employment probability than unskilled foreign workers and many firms usually reduce their employment by dismissing foreign workers first. In such a case, the negative effects of increases in minimum wages on unskilled native workers' employment will not be so large as those on unskilled foreign workers' employment.