Volume 31, Issue 4

Emigration promotion and urban unemployment

Shigemi Yabuuchi
Aichi University

Abstract

Unemployment is present in many developing countries. Thus, the government of a country that suffers from chronic unemployment often wants to emigrate some workers to foreign countries. This paper investigates whether such a policy is successful for reducing domestic unemployment.

1. Introduction

Unemployment is a significant problem in many developing countries. In those countries, rural workers are attracted to "the city lights," and they migrate to urban areas at the risk of unemployment, even though they can be fully employed in rural areas at the prevailing rural wage rate. Harris and Todaro (1970) formulated this labor allocation mechanism between the rural and urban areas in developing countries. Various aspects of the Harris-Todaro model (HT, hereafter) have been discussed by several trade theorists, such as Bhagwati and Srinivasan (1974), Corden and Findlay (1975), Khan (1980), Batra and Naqvi (1987), Beladi and Naqvi (1988), Hazari and Sgro (1991), Marjit and Beladi (2003), Neary (1991), Gupta (1993), Yabuuchi (1993), Chao and Yu (1996), Chaudhuri (2005), Marjit and Kar (2005), and Beladi et al. (2008)

An extensive movement of labor continues to occur among countries: for example, immigration from African countries to EU countries, that from South Asian countries to Australia, and so on. Thus, the governments of countries that suffer from chronic unemployment want to emigrate some of their workers to foreign countries in order to reduce the pressure of unemployment. Such a policy has deep historical roots: for example, the Irish migrated to the United States, and the Japanese migrated to Brazil in the early 20th century.

Two factors may influence changes in the number of migrant workers. On the one hand, 1) emigration tends to increase if the country of emigrant origin provides a subsidy or easing quantity control. 2) On the other hand, some developed countries restrict foreign immigration for social or political considerations. If the foreign wage rate increases and/or if the host countries decide to accept more immigrants, then emigration from the source country increases. In any case, an important concern for the policy makers of the developing country with a labor surplus is how to mitigate the pressure of unemployment. Thus, this paper investigates whether such policies are successful for reducing domestic unemployment.

2. The model and assumptions

Let us consider a small open economy in which there are two sectors. One sector produces good 1, and the other sector produces good 2. For simplicity, we label sectors 1 and 2 as agricultural and manufacturing sectors, respectively. The production of goods 1 and 2 requires labor and capital.

The following symbols will be used in the formal presentation of the model.

X_j: output of sector j (j=1,2)

L_u: unemployment

L^*: foreign migrants

p_j: price of good j (j=1,2)

w_j: wage rate in sector j (j=1,2)

w^*: foreign wage rate

r: rate of return to capital

L: labor endowment

K: capital endowment.

Variables w_2, L^*, p_j, w^*, L, and K are fixed, while the other variables, X_j, L_u, w_1, and r are endogenous.

Under perfect competition, we have

$$p_1 = a_{L1}w_1 + a_{K1}r, \tag{1}$$

$$p_2 = a_{L2}w_2 + a_{K2}r, \tag{2}$$

where a_{ij} is the amount of the ith factor used in the jth industry to produce one unit of the output. We assume that all goods are tradable and, therefore, that their prices are exogenously given.

In the standard HT model, it is assumed that the wage rate in (manufacturing) sector 2 (w_2) is set at a relatively high level and that it is rigid due to some political and/or institutional considerations, whereas the wage rate in (agricultural) sector 1 (w_1) is flexible. In addition, there is a possibility of emigrating abroad. We assume that emigration is possible only from the urban area because of institutional or geographical restrictions. It is assumed that the foreign wage rate (w^*) is fixed because the country is assumed to be small. Thus, a fixed number of workers, chosen randomly from the urban labor force, are allocated to migrating temporarily and earning wage w^* with certainty. Hence, the labor movement is temporary migration under a work permit scheme, rather than permanent migration. It is natural to assume that the foreign wage rate (w^*) is higher than the urban wage rate (w_2) of the developing country. In this situation, the rural workers have two alternatives: staying in rural areas in order to obtain a secure job at a low wage rate, or migrating to urban areas or

foreign countries in order to seek a high wage income at the risk of unemployment. Thus, the labor allocation mechanism between the sectors is shown as follows:

$$w_1 = w_2 L_2 / (L_2 + L_u + L^*) + w^* L^* / (L_2 + L_u + L^*), \qquad (3)$$

where $L_2 (= a_{L2} X_2)$, L_u and L^* are the employed, the unemployed labor in the urban area, and the foreign migrants, respectively. In the labor market equilibrium, therefore, the wage rate in sector 1 (w_1) equals the expected wage income in the urban area, which equals the manufacturing wage rate (w_2), times the probability of finding a job in the urban manufacturing sector, plus the foreign wage rate (w^*), times the probability of obtaining a job in the foreign country. According to the standard HT labor allocation mechanism, it is implicitly assumed that unemployed labor is supported by employed labor, such as other members of the family, or that a job is allocated daily (or monthly and so on) to all applicants by lottery. Otherwise, unemployed labor cannot survive since an unemployment allowance is not considered in the standard HT model.

Exogenously given endowments impose the following resource constraints:

$$a_{L1} X_1 + a_{L2} X_2 + L^* + L_u = L, \qquad (4)$$
$$a_{K1} X_1 + a_{K2} X_2 = K. \qquad (5)$$

This completes the specification of our model with the fixed endowment of factors and the internationally determined prices. We have five unknown variables w_1, r, X_1, X_2, and L_u, which are solved by equations (1)–(5) for given parameters, w_2, w^*, p_1, p_2, L, K, and L^*.

In the following discussion, the factor intensities between factors play an important role. Thus, we make the following assumption:

Assumption 1: *Sector 2 is capital-intensive relative to labor compared to sector 1 in the value sense, i.e.,*

$$rK_2 / w_2 L_2 > rK_1 / w_1 L_1 \Leftrightarrow \Lambda \equiv w_1 \lambda_{L1} \lambda_{K2} - w_2 \lambda_{L2} \lambda_{K1} > 0,$$

where $k_j = K_j / L_j$, $(j = 1,2)$, and λ_{ij} is the allocative share of the ith factor in the jth industry (e.g., $\lambda_{K2} = a_{K2} X_2 / K$).

This assumption is the Khan-Neary stability condition, which is well known in the literature.

3. Emigration and unemployment

Now let us examine the effect of promoting emigration on urban unemployment. Migrant workers increase either because of a subsidy from the home country or from an exogenous increase in the foreign wage rate. Immigrants will also increase if foreign governments relax immigration regulations or if the home country imposes migration limits. These situations can be captured by an increase in the foreign wage rate (w^*) or an increase in the number of migrants (L^*).

It can be seen that the model is decomposable between price side and quantity side. Thus, the price variables, w_1 and r are fixed from (1) and (2) under the constants w_2, p_1, and p_2. This implies that all input coefficients, a_{ij}, are also constant in our model.

Totally differentiating (3) – (5), we obtain

$$\begin{bmatrix} \lambda_{L1} & \lambda_{L2} & l_u \\ \lambda_{K1} & \lambda_{K2} & 0 \\ w_1\lambda_{L1} & w_2\lambda_{L2} & 0 \end{bmatrix} \begin{bmatrix} \hat{X}_1 \\ \hat{X}_2 \\ \hat{L}_u \end{bmatrix} = \begin{bmatrix} -l^* \\ 0 \\ -w^*l^* \end{bmatrix} \hat{L}^* + \begin{bmatrix} 0 \\ 0 \\ -w^*l^* \end{bmatrix} \hat{w}^*, \qquad (6)$$

where $\hat{A} = dA / A$ for any variable A, $l_u = L_u / L$ and $l^* = L^* / L$. It is assumed that the foreign wage rate (w^*) is higher than the urban wage rate (w_2). Thus, it can be expressed as

$$w_2 = aw_1 + (1-\alpha)w^*, \quad 0 < \alpha < 1.$$

By solving (6) with respect to L^*, we obtain

$$\hat{L}_u / \hat{L}^* = l^*(w_1 - w^*)(\lambda_{L1}\lambda_{K2} - \alpha\lambda_{L2}\lambda_{K1}) / \Delta, \qquad (7)$$

$$\hat{L}_u / \hat{w}^* = -w^* l^* (\lambda_{L1}\lambda_{K2} - \lambda_{L2}\lambda_{K1}) / \Delta, \tag{8}$$

where $\Delta = -l_u(w_1\lambda_{L1}\lambda_{K2} - w_2\lambda_{L2}\lambda_{K1}) = -l_u\Lambda < 0$, expressing the value of the determinant of the coefficient matrix of (6).

It can be shown that

$$\Lambda \equiv w_1\lambda_{L1}\lambda_{K2} - w_2\lambda_{L2}\lambda_{K1} = w_1\lambda_{L1}\lambda_{K2} - \{\alpha w_1 + (1-\alpha)w^*\}\lambda_{L2}\lambda_{K1}$$
$$= w_1(\lambda_{L1}\lambda_{K2} - \alpha\lambda_{L2}\lambda_{K1}) - (1-\alpha)w^*\lambda_{L2}\lambda_{K1} > 0$$

Then, it holds that $w_1(\lambda_{L1}\lambda_{K2} - \alpha\lambda_{L2}\lambda_{K1}) > (1-\alpha)w^*\lambda_{L2}\lambda_{K1} > 0$. Also, we have

$$(\lambda_{L1}\lambda_{K2} - \lambda_{L2}\lambda_{K1}) > (w_1\lambda_{L1}\lambda_{K2} - w_2\lambda_{L2}\lambda_{K1}) > 0,$$

since $w_1 < w_2$. Thus, it can be shown that $\hat{L}_u / \hat{L}^* > 0$ and $\hat{L}_u / w^* > 0$. Thus, the results are summarized in the following proposition.

Proposition 1. *In an economy with urban unemployment, emigration-promotion policy increases unemployment.*

At first sight, the increase in foreign emigration (L^*) may be considered to be beneficial to the economy as an effective policy to reduce unemployment. However, it induces a large amount of domestic migration from rural to urban areas, which exceeds the increase in both urban employment and foreign migration, resulting in an increase in urban unemployment. An increase in the foreign wage rate (w^*) also has a similar effect on the labor movement. Thus, a policy aimed at promoting migration and/or exogenous changes in favor of emigration cannot solve the problem of unemployment. Though the result is very pessimistic, our result shows the possibility of an unexpected outcome by focusing on the indirect effect through the domestic labor movement from rural to urban areas. Contrary to

expectation, one implication of these results is that restriction on temporary migration will reduce unemployment. Furthermore, our results depend crucially on the assumption that in order to migrate, a worker has to be a part of the urban labor force. This suggests the importance of examining the issue under the assumption that migrants are taken from the agricultural labor force. In addition, policy makers need to consider some other policies—for example, wage and production subsidies, and capital inflow from abroad. Our model provides a useful framework for examining the effectiveness of these alternative policies in an economy with unemployment and foreign migration.

References

Batra, R. N. and N. Naqvi (1987) "Urban Unemployment and the Gains from Trade," *Economica* 54, 381-395.

Beladi, Hamid, Chaudhuri Sarbajit, and Shigemi Yabuuchi (2008) "Can International Factor Mobility Reduce Wage Inequality in a Dual Economy?" *Review of International Economics* 16, 893-903.

Bhagwati, J. N. and T. N. Srinivasan (1974) "On Reanalysing the Harris-Todaro Model: Policy Rankings in the Case of Sector-Specific Sticky Wages," *American Economic Review* 64, 502-508.

Chao, C. C. and E. S. H. Yu (1996) "International Capital Mobility, Urban Unemployment and Welfare," *Southern Economic Journal* 62, 486-92.

Chaudhuri, S. (2005) "Labour Market Distortion, Technology Transfer and Gainful Effects of Foreign Capital," *The Manchester School* 73, 214-227.

Corden, W. M. and R. Findlay (1975) "Urban Unemployment, Intersectoral Capital Mobility and Development Policy in a Dual Economy," *Economica* 42, 59-78.

Gupta, M. R. (1993) "Rural-urban Migration, Informal Sector and Development Policies," *Journal of Development Economics* 41, 137-151.

Harris, J. R. and M. Todaro (1970) "Migration, Unemployment and Development: A Two-Sector Analysis," *American Economic Review* 60, 126-142.

Hazari, B. R. and P. M. Sgro (1991) "Urban-Rural Structural Adjustment, Urban Unemployment with Traded and Non-traded Goods," *Journal of Development Economics* 35, 187-196.

Khan, M. A. (1980) "Dynamic Stability, Wage Subsidies and the Generalized Harris-Todaro Model," *Pakistan Economic Review* 19, 1-24.

Marjit, S. and H. Beladi (2003) "Possibility or Impossibility of Paradoxes in the Small Country Harris-Todaro Framework: A Unified Analysis," *Journal of Developing Economics* 72, 379–385.

Marjit, Sugata and Saibal Kar (2005) "Emigration and Wage Inequality," *Economics Letters* 88, 141-45.

Neary, J. P. (1981) "On the Harris-Todaro Model with Intersectoral Capital Mobility," *Economica* 48, 219-234.

Yabuuchi, S. (1993) "Urban Unemployment, International Capital Mobility and Development Policy," *Journal of Development Economics* 41, 399-403.