E C O N O M I C S B U L L E T I N

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Outward FDI from a Free Trade Area: the Small Open Economy Case

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Abstract

In a simple three-country model where two countries sign a free trade agreement eliminating restrictions on trade and investment between them, this paper shows that any benefits accruing to the investing country from engaging in outward FDI will depend on the difference between the net return from investing in the third country and the equilibrium return on investment between the two signatories, as well as the direction of the initial capital flow between the signatories. Furthermore, the spillover effect created by the outward FDI may benefit the other signatory that initially owns some of the capital stock of its counterpart.

Keywords: Outward FDI; Free Trade Agreement
JEL classification: F15; F21

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1. Introduction

Regional economic integration has flourished throughout the world in recent years, perhaps due to the slow and difficult process of integration through the WTO. Most countries, regardless of the extent of their economic development, have signed regional trade agreements to become more economically integrated with other countries. Several hundred free trade agreements have been signed in recent decades. The North American Free Trade Agreement (NAFTA) signed by the US, Canada and Mexico and the Asian Free Trade Area (AFTA) encompassing 10 South East Asian countries are famous examples of such agreements.

For various reasons, a few member countries of regional trade blocs have engaged in outward foreign direct investment (FDI) in nonmember countries, as evidenced by the outward FDI engaged in by the US in China and the UK and by Singapore in the Netherlands and Taiwan. A significant number of studies have paid attention to the issues related to FDI (e.g., Brecher and Findlay (1983), Bhagwati et al. (1992), Markusen and Venables (1999), Baldwin et al. (2005), Wagner (2006), and Greenaway and Kneller (2007), etc.). Moreover, there are also some papers that have investigated the FDI engaged in by nonmember countries in the trade blocs, as well as the capital flows among bloc members (e.g., Miyagiwa and Young (1986), Wooton (1988), Webb (1990), Wang and Tsai (1996), Stevens (1998), Gao (2005), Buch et al. (2006), and Altomonte (2007), etc.). However, the effects of outward FDI from bloc members have been ignored in these earlier studies.

This paper examines some important economic effects of the outward FDI in a third country engaged in by one of the signatories to a free trade agreement where all barriers to trade and investment between signatories are abolished, while those barriers between the signatories and the rest of the world remain. It is shown that the outward FDI could benefit the other signatory who initially owns some of the capital stock of its counterpart. Furthermore, this paper identifies the important factors determining whether the signatory will benefit from the outward FDI. These include the difference between the net return obtained from investing in the third country and the equilibrium investment return between the signatories, as well as the direction of the initial capital flow between the signatories.

The remainder of this paper is organized as follows. Section 2 introduces the approach together with the model setting adopted. The related effects of the outward FDI engaged in a third country by a signatory to a free trade agreement are analyzed in Section 3. The conclusion is provided in Section 4.

2. The Basic Framework

The approach adopted in this paper was pioneered by Dixit and Norman (1980). Three countries, *A*, *B*, and *C*, and two goods, *1* and *2*, are taken into account in the model. The three countries are price takers in the world market. Countries *A* and *B* sign a free trade agreement in which all barriers to trade and investment between countries *A* and *B* are removed completely, while those barriers between the two countries and the rest of the world are maintained. Good *1* is produced by using capital and labor and good *2* by using land and labor with production technology exhibiting constant returns to scale. Country *A* exports good *1* to partner *B* and imports good *2* from partner *B*.

Free capital movements are only allowed between partners *A* and *B*. The initial total capital flow from country *A* to country *B* is referred to as k^{AB} that can be positive or negative. The outward FDI from country *A* into nonmember country *C* must be approved by the government of country *C* and the initial total outward FDI of country *A* approved is denoted by $\bar{k}^{AC}$. The capital stock owned by country $j\ (=A,B,C)$ is denoted by κ^j. Accordingly, the respective capital stocks in each of the three countries are $k^A = \kappa^A - k^{AB} - \bar{k}^{AC}$, $k^B = \kappa^B + k^{AB}$, and $k^C = \kappa^C + \bar{k}^{AC}$.

Define r^j as country *j*'s revenue from producing goods *1* and *2*, which is simply denoted as a function of the capital stock of country *j*. The subscript denotes partial differentiation in the analysis that follows. Thus, r_k^j is the return on investment obtained by investing in country *j*. Because of the complete capital mobility between countries *A* and *B*, the two countries' returns on investment are equal in equilibrium, i.e.,

$$r_k^A(k^A) = r_k^B(k^B) = i^{FTA}. \tag{1}$$

Next, e^j is defined as the expenditure incurred by country *j* to achieve national welfare ω^j and is simply denoted as a function of the national welfare. In the model, total expenditure for each country equals the revenue from producing goods and the total return on investment, i.e.,

$$e^A(\omega^A) = r^A(k^A) + k^{AB} i^{FTA} + \bar{k}^{AC} r_k^C, \tag{2}$$

$$e^B(\omega^B) = r^B(k^B) - k^{AB} i^{FTA}, \tag{3}$$

$$e^C(\omega^C) = r^C(k^C) - \bar{k}^{AC} r_k^C. \tag{4}$$

This paper will analyze the related effects of the outward FDI engaged in by signatory

A using the model in the next section.[1]

3. Outward FDI Induced by a Higher Return

This section will discuss the related effect of some outward FDI, $d\bar{k}^{AC}(>0)$, applied for by country *A* to country *C* and approved by country *C*, which is induced by a higher return on investment in country *C* (i.e., $r_k^C > i^{FTA}$). Because of the diminishing returns on investment (i.e., $r_{kk}^j < 0$),[2] the capital outflow from country *A* to country *C* causes the return on investment of country *A* to rise above that of country *B*, and results in the movement of capital from country *B* to country *A*. Consequently, the capital stock of the two countries is lowered, and is captured by the following equation:

$$dk^m = -[r_{kk}^n / (r_{kk}^A + r_{kk}^B)]d\bar{k}^{AC} < 0, \qquad m \neq n, \quad m, n = A, B. \tag{5}$$

From Eq. (5), it can also be easily derived that $|dk^A| < d\bar{k}^{AC}$, $|dk^B| < d\bar{k}^{AC}$ and $|dk^A| + |dk^B| = d\bar{k}^{AC}$. In addition, $|dk^A| > (<)|dk^B|$ when $r_{kk}^A > (<) r_{kk}^B$; in particular, $|dk^A| = |dk^B| = (1/2)d\bar{k}^{AC}$ if the effect on both countries' return on investment of a capital outflow is the same (i.e., $r_{kk}^A = r_{kk}^B$).

Now, let us turn to the effect of the outward FDI on investing country *A*'s national welfare. Totally differentiating Eq. (2) and using Eq. (5) gives:

$$e_\omega^A \, d\omega^A = [(r_k^C + \bar{k}^{AC} r_{kk}^C) - i^{FTA}]d\bar{k}^{AC} + k^{AB} r_{kk}^A \, dk^A. \tag{6}$$

Eq. (6) tells us that country *A* becomes either better off or worse off investing in country *C*, depending on the following two factors: (*i*) the difference between the net return on investment obtained from investing in country *C* and the equilibrium return in the bloc and (*ii*) the direction of the initial capital flow between countries *A* and *B*.

For a more detailed understanding of the two factors mentioned above, let us define $\eta = -(\partial r_k^C / r_k^C)/(\partial k^C / k^C) = -k^C r_{kk}^C / r_k^C > 0$ as the investment return elasticity of country *C* and $s = \bar{k}^{AC} / k^C$ as the share of country *A*'s total direct investment in the capital stock of country *C*. The net return on investment obtained as a result of

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[1] It is noted that consideration of the trade between the free trade area and country *C* only complicates the model without affecting the conclusion and the analysis of the investment made by country *B* in country *C*, which can easily be derived from the paper, is similar to that of the investment made by country *A* in country *C*. These two pieces of information are provided for interested readers.

[2] Denote p_i^* as the world price of good i, v^j as land used in the production of good *2* in country *j* and l_i^j as labor employed in the production of good *i* in country *j*. The production functions of goods *1* and *2* in country *j* are $x_1^j = f_1^j(k^j, l_1^j)$ and $x_2^j = f_2^j(v^j, l_2^j)$, respectively. Thus, country *j*'s revenue function can be expressed as $r^j(k^j) = \sum_{i=1}^2 p_i^* x_i^j(p_1^*, p_2^*, k^j, v^j, l^j)$ where $l^j = \sum_{i=1}^2 l_i^j$ is the total labor in country *j*. The assumption that f_i^j is concave gives rise to the property that $r_{kk}^j < 0$.

country *A* investing in country *C* can be expressed as

$$r_k^C + \bar{k}^{AC} r_{kk}^C = (1 - s\eta) r_k^C > (<) 0 \quad \Leftrightarrow \quad \eta < (>) 1/s. \tag{7}$$

In Eq. (7), it is seen that the smaller s and η are, the more likely it is that the net return on investment will be positive. Therefore, the net return on investment obtained from investing in country *C* is determined by the values of s, η and r_k^C.

Next, the outward FDI from country *A* to country *C* pushes up the returns on investment of countries *A* and *B*, leading to a rise in the total return on investment obtained from the initial total capital flow between countries *A* and *B*. As a result, the investment by country *A* in country *C* causes country *A* to obtain more benefits from the initial total investment in country *B* if the direction of the initial capital flow between the two signatories is from country *A* to country *B* (i.e., $k^{AB} > 0$). By contrast, country *A* obtains less benefits from the outward FDI in the case where $k^{AB} < 0$. In particular, if $k^{AB} = 0$, the second term in the right-hand side of Eq. (6) and the effect disappear.

From the above analysis, the investment return elasticity of country *C* plays a key role in estimating the benefits obtained by country *A* from investing in country *C*. In particular, an investment return elasticity that is sufficiently low becomes the necessary condition for investing country *A* to benefit from the capital outflow when the direction of the initial capital flow between the two signatories is from country *B* to country *A*.

However, if there is no investment by country A in country *C* initially (i.e., $\bar{k}^{AC} = 0$), then $s = 0$ and the net return on investment turns out to be r_k^C. In this case, for country *A* to be better off by investing in country *C*, the difference in the total return obtained between investing in country *C* and the bloc must be large enough to compensate for the possible loss from the total return on investment of the initial capital flow between countries *A* and *B*.

For country *B*, whether or not the outward FDI engaged in by country *A* in country *C* gives rise to a beneficial spillover effect will depend on the direction of the initial capital flow between countries *A* and *B*. Country *B* is made better off (worse off) by the outward direct investment of country *A* when the direction of the initial capital flow is from country *B* (*A*) to country *A* (*B*). Additionally, the outward FDI will not affect country *B*'s welfare if country *B* has never invested in country *A* before. By totally differentiating Eq. (3), the result stated above can be obtained:

$$e_\omega^B \, d\omega^B = -k^{AB} r_{kk}^B \, dk^B > (<, =) 0 \quad \Leftrightarrow \quad k^{AB} < (>, =) 0. \tag{8}$$

We also can understand the effect of the outward FDI on the national welfare of

nonmember country *C* by totally differentiating Eq. (4):

$$e_{\omega}^{C}\, d\omega^{C} = -\bar{k}^{AC} r_{kk}^{C} d\bar{k}^{AC} > (=)0 \quad \Leftrightarrow \quad \bar{k}^{AC} > (=)0, \tag{9}$$

which means that if country *A* has invested in country *C* before, the total return on *A*'s investment paid for by country *C* is lowered because the capital inflow from country *A* reduces the return on investment in country *C*. However, country *C*'s welfare is independent of the capital flow without the initial direct investment from country *A* approved by country *C*.

Finally, adding Eqs. (6), (8) and (9) together gives

$$e_{\omega}^{A}\, d\,\omega^{A} + e_{\omega}^{B}\, d\omega^{B} + e_{\omega}^{C}\, d\omega^{C} = (r_{k}^{C} - i^{FTA}) d\bar{k}^{AC} > 0. \tag{10}$$

That is, if everything else remains the same, the outward FDI from a signatory to the free trade agreement to a third country will be beneficial to the world in the case where the return on investment in the nonmember country is higher than that in the free trade area.

4. Conclusion

From the viewpoint of a nation as a whole, this paper uses a simple model to show that the benefits accruing to a country that signs a free trade agreement with another country from investing in a third country because of a higher return depend on the difference between the net return from investing in the third country and the equilibrium investment return between the two signatories to the agreement, as well as the direction of the initial capital flow between the two signatories. This paper also shows that a spillover effect is indeed created by the outward FDI, but whether or not this effect will benefit the other signatory also depends on the direction of the initial capital flow between the two signatories. In addition, the world will benefit from the increase in resource efficiency arising from the capital mobility.

It can also be derived from the results of this paper that if the third country is a member of another regional trade bloc with perfect capital mobility among members, e.g., the UK in the European Union (EU), the outward FDI will also cause the capital of the third country to flow into the other members of the bloc, and will hence give rise to a benefit or a loss for the other members (i.e., another spillover effect).

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