

Title	TRADE LIBERALIZATION AND CAPITAL INFLOWS: IS THERE A CONFLICT?
Sub Title	
Author	GUHA-KHASNOBIS, Basudeb
Publisher	Keio Economic Society, Keio University
Publication year	1999
Jtitle	Keio economic studies Vol.36, No.1 (1999.) ,p.79- 86
JaLC DOI	
Abstract	This paper invokes the Stolper-Samuelson properties of two alternative production models in order to describe exactly how the nature of interlinkage between trade liberalization and sector-specific foreign capital depends on the structure of production in a particular country. The possible coexistence of traditional and modern exportable sectors plays the crucial role in the analysis. It is shown that the desire to attract foreign capital will slow down trade liberalization if a country has a sizeable traditional exports sector. On the other hand, a country that has only a modern exportable sector that uses foreign capital, both tariff reductions as well as currency devaluations increase the returns to foreign capital unambiguously. These results help in the understanding of certain stylized facts about foreign capital flows associated with foreign direct investment in recent years.
Notes	Note
Genre	Journal Article
URL	https://koara.lib.keio.ac.jp/xoonips/modules/xoonips/detail.php?koara_id=AA00260492-19990001-0079

慶應義塾大学学術情報リポジトリ(KOARA)に掲載されているコンテンツの著作権は、それぞれの著作者、学会または出版社/発行者に帰属し、その権利は著作権法によって保護されています。引用にあたっては、著作権法を遵守してご利用ください。

The copyrights of content available on the KeiO Associated Repository of Academic resources (KOARA) belong to the respective authors, academic societies, or publishers/issuers, and these rights are protected by the Japanese Copyright Act. When quoting the content, please follow the Japanese copyright act.

TRADE LIBERALIZATION AND CAPITAL INFLOWS: IS THERE A CONFLICT?

Basudeb GUHA-KHASNOBIS

Indian Council for Research on International Economic Relations, New Delhi, India

First version received July 1997; final version accepted December 1998

Abstract: This paper invokes the Stolper–Samuelson properties of two alternative production models in order to describe exactly how the nature of interlinkage between trade liberalization and sector-specific foreign capital depends on the structure of production in a particular country. The possible coexistence of traditional and modern exportable sectors plays the crucial role in the analysis. It is shown that the desire to attract foreign capital will slow down trade liberalization if a country has a sizeable traditional exports sector. On the other hand, a country that has only a modern exportable sector that uses foreign capital, both tariff reductions as well as currency devaluations increase the returns to foreign capital unambiguously. These results help in the understanding of certain stylized facts about foreign capital flows associated with foreign direct investment in recent years.

1. INTRODUCTION

It is commonly acknowledged that foreign capital plays an important role in developing countries. Foreign capital, especially in the form of Foreign Direct Investment (FDI), benefits the host country in a number of ways: (a) it provides additional capital resources to finance investment activities (b) it is often accompanied by new and better technology which can generate positive externalities in the host country (c) foreign investors have better international market links and hence can boost the host country's exports.

There are many ways that a country can receive capital inflows from abroad. These can be outright aid, long and short term borrowings from international lending agencies, foreign institutional investments, and last but not the least, foreign direct investment. A distinctive hallmark of capital flows under FDI is that multinational corporations (MNC) account for the majority of these flows. When an MNC invests in a foreign country, it usually does so in the same sector of the foreign country as in the home country because by undertaking a similar activity abroad, an MNC can reap the benefits of its specialized skills and experience. Therefore, capital inflows associated

Acknowledgement. The author is thankful to an anonymous referee of this journal whose comments substantially improved the focus and exposition of this paper. Any remaining error is the sole responsibility of the author.

with FDI tend to be *sector-specific*. For any MNC foreign production becomes profitable if three conditions are met: (1) they possess ownership advantages over firms from other nationalities, often in the form of intangible assets that are exclusive in the short run. (2) it is more profitable for the MNC to produce itself rather than sell or lease such rights to firms from a potential host country. (3) it is profitable to use its unique advantages *in conjunction* with some factor(s) located in the host country (say, labor).

Recent trends in capital flows associated with FDI reveal that the share of the non-OECD countries as hosts increased from about 20 to 35 percent between 1990 and 1995. It is also noticed that U.S. FDI into Asia increased by over 66 percent between 1994 and 1995. The corresponding figure for Latin America was 35 percent. A notable feature of this trend is that non-OECD countries, even with relatively restricted trade regimes, are becoming increasingly attractive hosts of foreign capital. This paper focuses on the fate of the reward to such capital (*i.e.*, condition (3) described above) in the wake of trade liberalization in the host country. Since the profitability of capital resources deployed in a specific sector of the host country is a major driving force behind FDI, the results of this paper enables one to understand the interaction between trade liberalization and one of the major incentives behind FDI.

In light of the positive association between foreign capital inflows and tariff rates, and also to place the following analysis in the right perspective, it will be useful to invoke one of the leading theories that describes the relationship between trade policy and FDI. This is known as the *tariff jumping* theory, which suggests that if a country imposes a tariff on importables, foreign producers will find it profitable to start producing within the tariff-imposing country and serve its market directly, instead of exporting from their home bases. Thus, according to this theory, there can be a positive correlation between tariff rates imposed by a country and the amount of FDI (equivalently, capital inflows) that it is able to attract. A crucial assumption behind the tariff jumping argument is that foreign capital comes into the import competing sectors of the host economy. A main contribution of this paper is that a positive correlation between tariff rates and inward capital flows can prevail even if they are not restricted only to the import competing sectors, but may flow into the exportable sectors of a developing country as well. We shall examine two alternative scenarios about the trade and production structure of the host country. The Stolper-Samuelson properties of these alternative production models are invoked in order to describe exactly how the nature of interlinkage between trade policy in the host country and the profitability of foreign capital depends on the structure of production in a country.

The comparative statics of the models lead to the following main conclusions: (1) a country that has a sizeable traditional exportable sector where only domestic factors of production are used, and a relatively small modern exportable sector where foreign capital is used, will find it difficult to speed up tariff reductions because that will hurt the returns to foreign capital. (2) a country that is chiefly dependent on the export of modern manufacturing that is produced with the help of foreign capital and has a relatively insignificant traditional exportable sector, will find it easier to step up tariff re-

ductions without hurting foreign capital. Thus, result (1) vindicates the empirical implication of the tariff jumping theory (*viz.*, a positive association between higher tariffs and higher capital inflows), but under very different assumptions about the structure of production compared to the earlier theory. Apart from explaining the positive correlation between tariff rates and FDI inflows, results (1)–(2) of the paper throw some light on why some countries implement tariff reforms very slowly relative to others, even after formally choosing free trade and export promotion as their development strategies.

In Section 2.1 it is shown that if foreign capital flows into the sole exportable sector of the host economy, tariff reductions and currency devaluations pull domestic wages in opposite directions. However, the change in the returns to foreign capital is unambiguously positive. When traditional and modern exportable sectors coexist, the model in Section 2.2 shows that the same change is now at best ambiguous. *Ceteris paribus*, currency devaluations tend to improve the returns to foreign capital whereas tariff reductions tend to hurt the same. In this model, it is the domestic wage rate that gains unambiguously from trade liberalization if the importable sector is capital-intensive compared to the traditional exportables. We shall discuss further the policy options for the respective government after establishing the analytical results.

2. THE RETURN TO FOREIGN CAPITAL

The following notations are used throughout the paper.

E : the nominal exchange rate (domestic currency per unit of the foreign currency).

Y : the quantity of the traditional exportable good.

X : the quantity of the modern exportable good.

M : the quantity of the importable good.

P_Y, P_Y^* : domestic and world prices of traditional exportables, respectively.

P_X, P_X^* : domestic and world prices of modern exportables, respectively.

P_M, P_M^* : domestic and world prices of importables, respectively.

$T=(1+t)$, *i.e.*, one plus the initial tariff rate t on imports.

L, K, Z : fixed supplies of labor, domestic capital and foreign capital.

w : wages.

r_Z, r_K : the rewards to foreign and domestic capital, respectively.

a_{ij} : the amount of the i th factor used in the j th sector.

θ_{ij} : share of the i th factor in the j th sector.¹

λ_{ij} : proportion of the i th factor used in the j th sector.

Also, in the discussion to follow, a “^” over a variable will denote a proportionate change. That is $\hat{E}=dE/E$ and so on.

The small-country assumption implies that for all traded goods,

$$P_i = E P_i^*$$

¹ For instance, θ_{LM} is the share of labor in the importable sector and is equal to $w a_{LM}/P_M$.

where $i=X, Y, M$.

2.1 Case 1: One (modern) exportable and one importable sector

Let X denote the one and only exportable sector in the home country that is in pursuit of liberalization. There is an initial tariff of $T=(1+t)$ on importables M . It is assumed that each sector is characterized by constant returns-to scale technologies. Perfect competition prevails in all the markets. Exportables are produced with the help of foreign capital (Z) and domestic labor (L). Importables use domestic capital (K) and domestic labor. The supplies of all the factors of production are fixed within a period. All prices are flexible. The host country is "small", taking prices of the traded goods (quoted in the foreign currency, say, dollars) as given. The country has a fixed nominal exchange rate system, where E denotes local currency per unit of the foreign currency. E can be changed (devalued) at the discretion of the government.

The competitive, or zero profit conditions in the two traded sectors are given by:

$$(1) \quad a_{LM}w + a_{KM}r_K = P_M = EP_M^*T$$

$$(2) \quad a_{LX}w + a_{ZX}r_Z = P_X = EP_X^*$$

The competitive profit equations may be differentiated in order to obtain the following.²

$$(3) \quad \theta_{LM}\hat{w} + \theta_{KM}\hat{r}_K = \hat{E} + \hat{T}$$

$$(4) \quad \theta_{LX}\hat{w} + \theta_{ZX}\hat{r}_Z = \hat{E}$$

The full employment condition of the (fixed) labor supply implies:

$$(5) \quad a_{LX}X + a_{LM}M = \bar{L}$$

The supplies of M and X are bound by the availabilities of K and Z , respectively. Thus,

$$(6) \quad X = \frac{\bar{Z}}{a_{ZX}}$$

and,

$$(7) \quad M = \frac{\bar{K}}{a_{KM}}$$

After substituting for M and X , the full-employment condition of labor may be fully differentiated in order to obtain the following.

$$(8) \quad \lambda_{LX}(\hat{a}_{LX} - \hat{a}_{ZX}) + \lambda_{LM}(\hat{a}_{LM} - \hat{a}_{KM}) = 0$$

The elasticities of labor's marginal product in the two sectors are defined as:

² The expressions are simplified as the terms involving the \hat{a}_{ij} 's vanish since the producers minimize unit costs. For a complete description, see Jones (1965).

$$\gamma_{LX} = -\frac{(\hat{a}_{LX} - \hat{a}_{ZX})}{(\hat{w} - \hat{E})}$$

$$\gamma_{LM} = -\frac{(\hat{a}_{LM} - \hat{a}_{KM})}{(\hat{w} - \hat{E} - \hat{T})}$$

Making these substitutions in the last equation yields:

$$(9) \quad \hat{w} = \frac{\hat{E}\beta + \hat{T}\beta_M}{\beta}$$

where

$$\beta = \lambda_{LX}\gamma_{LX} + \lambda_{LM}\gamma_{LM}$$

is the elasticity of labor-demand for the whole economy, and

$$\beta_M = \lambda_{LM}\gamma_{LM}$$

In general, the sign of \hat{w} is ambiguous since \hat{E} is positive (devaluation) and \hat{T} is negative (tariff reduction). Currency devaluations and tariff-reductions pull the wage rate in opposite directions. Substituting \hat{w} in Equation 4, the change in the returns to foreign capital is obtained as follows.

$$(10) \quad \hat{r}_Z = \frac{1}{\theta_{ZX}}(\hat{E} - \theta_{LX}\hat{w})$$

or,

$$(11) \quad \hat{r}_Z = \hat{E} - \frac{\hat{T}\beta_M\theta_{LX}}{\beta\theta_{ZX}}$$

From (11) it is clear that the returns to FDI (*i.e.*, Z) is *unambiguously* positive if the currency is devalued and tariffs are reduced.

Now consider the policy options of a government that has rejected the old system of an artificially pegged (“overvalued”) exchange rate and opted either for a sizeable devaluation or a flexible system where the currency would automatically attain its lower market value or both, as is the case with India.³ From the expressions derived it is seen that higher values of \hat{E} (devaluations) benefit both labor and foreign capital. For a given \hat{E} , higher values of $|\hat{T}|$, in other words, faster tariff reduction, depresses the rise in wages and spills even more of the benefit over to foreign capital. In that sense, devaluation, tariff reduction and foreign capital attraction are mutually compatible goals for the government.

To secure political support for the reform process at home, the government can ensure that the domestic wage rate would also rise due to the same reforms. It is easy to

³ The rupee was devalued by 20% in July 1991. The degree of flexibility of the exchange rate system was gradually increased until the rupee became fully market determined in 1993. Since then it has depreciated by close to 40%. Thus, between the announcement of liberalization in 1991 and the present, the rupee depreciated by roughly 80% and the trend continues.

verify that the wage rate rises if and only if

$$|\hat{E}| \beta > |\hat{T}| \beta_M$$

or

$$|\hat{T}| < \frac{\hat{E} \beta}{\beta_M}$$

For \hat{w} to remain positive, \hat{T} must be less than $|\hat{E}| (\beta/\beta_M)$. Higher values of β but lower values of β_M raise the upper limit of the rate of tariff-reduction, given \hat{E} . In other words, higher values of the elasticity of substitution between labor and capital in the exportable sector enables faster tariff reduction and increasing profitability of foreign capital *without hurting wages*. Thus, in a country where the exportable sector can be readily mechanized with the help of foreign capital, trade liberalization presents very few problems for the government, especially in terms of balancing the interests of the various stakeholders.

2.2 Case 2: Two exportables (modern and traditional) and one importable sector

Some developing countries are still dependent on traditional exports. For them the pressures to change the pattern of exports are many. Traditional exports often constitute primary products that are subject to factors beyond the control of economic agents such as the climate. Primary exports also tend to have low income elasticities of demand, making them relatively unproductive foreign exchange earners from the developed world. Such exports have also come under serious criticisms from the environment angle of sustainable development. Thus, developing countries are increasingly on the look-out for newer items for export. The traditional exportables continue to exist, perhaps even constitute the majority of exports, but modern exportable items are on the rise in many of these countries, especially with the onset of liberalized economic regimes there. A case in point is India. Alongside its traditional exportable industries such as Tea, Leather, Gems and Jewellery and Textiles, India also has a rapidly developing modern exportable sector. Important industries in this sector are the Software and Consumer Electronics industries, the former being one of the biggest attractors of foreign capital in India.

Let X denote the modern exportable sector of a small open economy. Let M and Y represent the importable and traditional exportable sectors, respectively. It is assumed that foreign capital Z is employed only in the modern exportables (X) sector. Indigenous capital K is used in the importables and the traditional exportables sector. Labor is used as a factor of production in all the three sectors. The structure of production is thus a combination of the Heckscher–Ohlin (the M and Y sectors) and Specific-Factor models (the X sector). This three-sector three-factor hybrid model of production was invented by Gruen & Corden (1970) and has been the basis of many interesting results in classical trade theory since then.

The competitive profit conditions, after differentiation are as follows:

$$(12) \quad \theta_{LX}\hat{w} + \theta_{ZX}\hat{r}_Z = \hat{E}$$

$$(13) \quad \theta_{LY}\hat{w} + \theta_{KY}\hat{r}_K = \hat{E}$$

$$(14) \quad \theta_{LM}\hat{w} + \theta_{KM}\hat{r}_K = \hat{E} + \hat{T}$$

The last two equations may be solved simultaneously to obtain an expression for the change in the wage rate.

$$(15) \quad \hat{w} = \hat{E} - \frac{\theta_{KY}}{(\theta_{KM} - \theta_{KY})}\hat{T}$$

Unlike the previous case, factor intensities play the key role in deciding the fate of the wage rate after a devaluation and tariff reductions are simultaneously applied. If the importable sector is capital-intensive compared to the traditional exportables (as seems plausible for a developing country), the wage rate increases on account of both the measures. The expression for the change in the rewards to foreign capital is once again given by

$$\hat{r}_Z = \frac{1}{\theta_{ZX}}(\hat{E} - \theta_{LX}\hat{w})$$

On substituting the value of \hat{w} , the expression for \hat{r}_Z becomes,

$$(16) \quad \hat{r}_Z = \hat{E} + \frac{\theta_{LX}\theta_{KY}\hat{T}}{\theta_{ZX}(\theta_{KM} - \theta_{KY})}$$

From (16) it is clear that in contrast to the previous model it is the change in the returns to FDI that is ambiguous. In comparison to the earlier case, the policy options for the government are diametrically opposite in nature. Given \hat{E} , higher rates of tariff reductions tend to depress the returns to foreign capital. Therefore, when FDI flows only into the modern exportable sector (while the traditional exportables continue to use domestic factors of production), the ease with which the government can reduce tariffs and devalue the currency is restricted. The two policies pull the returns to foreign capital in opposite directions. The resulting dilemma is likely to slow down the pace of liberalization.

3. CONCLUSIONS

Devaluation and tariff reduction are two common trade reforms that are expected of countries that opt for liberalization. These countries also depend on foreign capital in many important ways. This paper explored the possibility of a conflict between trade reforms and the attraction of foreign capital. It showed that under certain structures of production, currency devaluations coupled with tariff reduction can diminish the return to foreign capital and discourage FDI. Such a possibility may reduce the speed of tariff reduction by a developing country and subject it to the criticism of being a *slow reformer* by the outside world. However, in a situation described in section 2.2, such

criticisms can be self-defeating if the foreign government is actually trying to protect the interests of its MNCs who have, or are planning to invest in the country that is carrying out trade reforms, *albeit* slowly.

Also, the possible conflict between tariff reduction and inward FDI flow can explain the positive correlation often observed between high tariffs and more FDI inflows in a way that is entirely different from the prevailing explanation provided in the “tariff jumping” literature in trade theory. To explain this empirical observation with the help of theory, it is not necessary to assume that foreign capital flows only in the importable sector of the host country. The result can be obtained even if foreign capital flows only into the exportable sectors. The possible coexistence of modern and traditional exportable sectors in a country holds the key to the fate of the reward to foreign capital in the wake of trade liberalization.

REFERENCES

- Bond, Eric & Samuelson, L., “Tax Holidays As Signals” *American Economic Review*, 1986.
- Bond, Eric, Chiu, Steve & Estache, Antonio., ‘Trade Reform Design As A Signal To Foreign Investors’ *The World Bank*, Policy Research Working Paper No. 1490, 1995.
- Gruen, F. H. & Corden, W.M., “A Tariff That Worsens The Terms Of Trade” in Shape, R. H. (ed) *Studies in International Economics: Monash Conference Papers* (North-Holland Amsterdam), 1970.
- Jones, R. W., “The Structure Of Simple General Equilibrium Models” *The Journal of Political Economy*, 1965.
- Jones, R. W., “A Three-Factor Model In Theory, Trade, And History”, in J. Bhagwati *et al.* (ed) *Trade, Balance of Payments and Growth* (North-Holland Amsterdam), 1971.
- Motta, Massimo., “Multinational Firm and the Tariff-Jumping argument: A Game Theoretic analysis with some unconventional conclusions” in *European Economic Review*, 1992.
- Neven, Damien & Siotis, George., “Technology Sourcing and FDI in the EC” in *Universite de Lausanne Cahiers de Recherches Economiques: 9508*, 1995.
- Yanagawa, Noriyuki., “Foreign Direct Investment for Tariff-Jumping” in *Economic Studies Quarterly*, 1990.