A CRITICAL COMMENT ON MR. TIRONI'S THEORY OF DISTRIBUTION OF BENEFITS FROM REGIONAL TRADE LIBERALIZATION[1]

Tsuneo Nakauchi

I Scope of This Paper

The purpose of this brief paper is to show the salient portion of Mr. Tironi's achievements on the distribution of benefits from regional trade liberalization when foreign capital is present,[2] and to add a few critical comments to them.

Mr. Tironi's paper has been constructed on the basis of neo-classical framework with usual assumptions of perfect competition, divisibility and well behaved production functions. He has invented a device to analyse the problem of distribution of benefits brought forth from a regional economic integration into labour and capital.

Due to the two-dimensional geometrical constraints of the analysis, a great extent of simplification has been inevitable. However he has succeeded in drawing clear-cut results which is quite worth noting from the policy oriented viewpoint as well.

The main results are bogged down to the two main issues: (i) If the less developed countries export capital intensive products under the existence of foreign capital, whereas gross welfare may be increased, net national welfare may most probably be reduced. Needs arise to watch, therefore, the distribution of the benefits among indigenous and foreign entrepreneurs. (ii) As regards the distribution of the benefits among the countries which have been integrated, the welfare of those countries exporting capital intensive goods is likely to be reduced.

These conclusions are indeed clear contribution if we think of the simplicity of the analytical apparatus. Mr. Tironi has laboriously extended the domain of what geometrical analysis can show within neo-classical assumptions. In this respect, the characteristics of his works resemble those of J. Vanek as he wrote "General Equilibrium of International Discrimination" in his effort to explore as much usefulness as possible from the potentials of the theoretical implication.

My comments in this paper is limited to the one within the theoretical framework of the neo-classical system and not extended to the exogenous criticism which totally refuse the relevance of the assumptions which underlie the system. The present paper is constituted of the following two sections namely the salient feature of Mr. Tironi's contributions and my critical comments on them.

II Mr. Tironi's Model and the Main Points of His Analysis

The model assumes an ordinary Hecksher-Ohlin trade model with two goods and two factors available in fixed supply. In addition, there are two more assumptions namely (i) Of the two factors, one is exclusively owned by foreigners. (ii) The second assumption is that throughout the analysis, all income earned by factors from abroad is consumed locally and not transfered abroad.

Now if capital, as assumed above is totally owned by foreigners, what will be the welfare impact of an economic integration? It depends on the effects of integration on the relative price of labour which depends on the factor intensity of production. It therefore makes difference whether the exported goods are labour intensive or capital intensive. If it is labour intensive, as Samuelson and Stolper demonstrated, wage will increase and improve its relative share to capital. Labour will, in this case, secure greater gain of an increase in the gross income level.

If, total capital is foreign owned and exports are assumed to be capital intensive, the economic integration will give favourable effects to capital, which result in a reduction in national income which consists of labour's share.

Mr. Tironi's geometrical illustration indicates the device to show the relative shares of labour and capital by demarcating the ordinary transformation curve into two parts. Figure 1 indicates a smaller transformation curve (La La) inside of an ordinary transformation curve (Ta Ta). If X is labour intensive good, indigenous industry is labour intensive so that it is tilted towards X axis. When self sufficient point is A, OA′ indicates the relative share of labour and AA′ that of capital. Since all the capital is assumed to be foreign owned, AA′ belongs to foreigners and the remaining OA′ is the net national income.

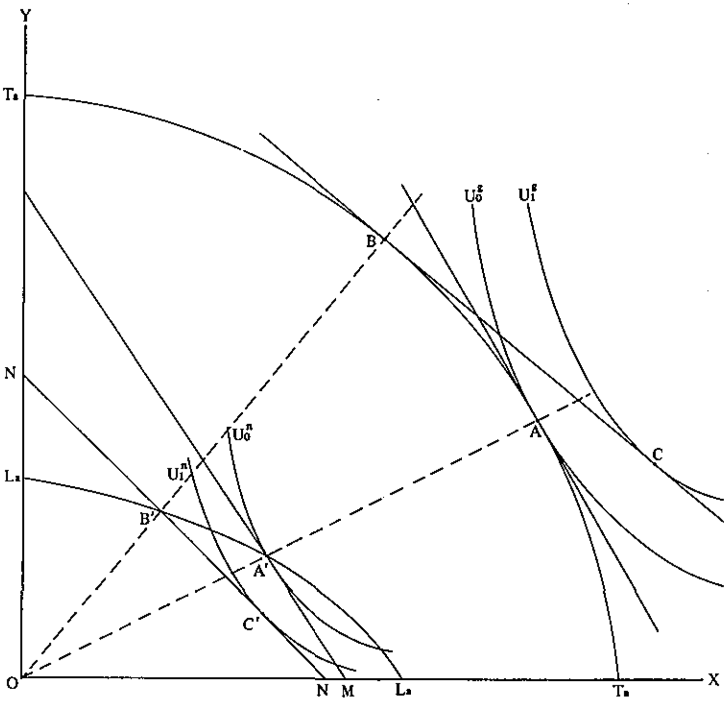

Figure 1

This is a very convenient way to demarcate the distribution into labour and capital. If foreign trade is opened, production equilibrium point moves to B on Ta Ta and consumption equilibrium point shifts from autarkic A to C which is on the higher level of welfare. (U_1^g >

$U_0{}^g$). This indicates that gross total gains from trade which is brought forth by economic integration is positive. In the case of exporting capital intensive good Y, however, it is not prima facie clear that the liberalization of trade will also increase the net national income (namely labour's share). In Figure 1, labour's budget is indicated by NB′N, parallel line to the terms of trade passing through B. This is shown, in this case, to be lower than MA′M, the one corresponding to the autarky case. The real net national income level is reduced from $U_0{}^n$ to $U_1{}^n$.

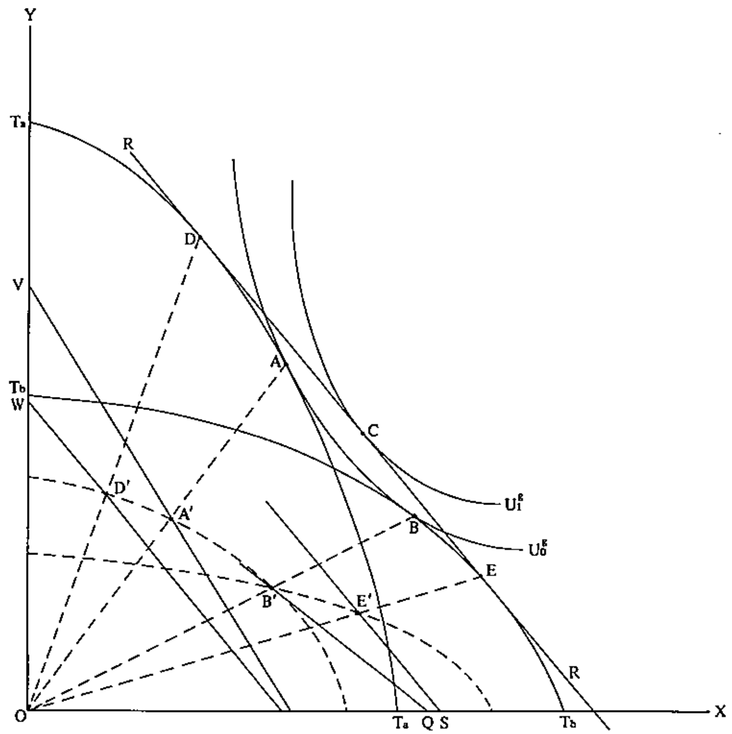

Figure 2

What about the distribution of the gains from trade between individual countries when foreign capital is present? Figure 2 indicates that the gross gains from trade is increased as a result of economic integration as the new consumption point C is located on the higher utility indifference curve $U_1{}^g$, higher than $U_0{}^g$ where original equilibrium points of production A and B was located.

The shares of labour namely net national incomes of the two countries do not, however, increase in the same manner. If the transformation curves of labour in the two countries are both assumed to be tilted towards labour intensive good X, it is evident from Figure 2 that the net national income of country B which is exporting labour intensive product X is increased from B′Q to E′S while that of country A which is exporting capital intensive product Y is reduced from VA′ to WD′.

If tariff revenue under autarky is paid to labour, it is obvious from Figure 1, that the country which exports capital intensive good Y would have to reduce net national income because labour's real wages would fall as a result of trade liberalization and then the workers total income would necessarily fall further as a consequence of the additional disappearance of their income derived from tariff revenue. In the case of country B which is exporting labour intensive good X, whether or not there is a net increase in the net national income depends on the relative size of tariff revenue and the increase in real wage due to trade liberalization. The net national income will increase if the former is smaller than the latter, namely if the tariff revenue budget line is located between B′Q and E′S in Figure 2.

III Critical Comments on Mr. Tironi's Analysis

As was mentioned in section one, the strong merit of this paper lies in the fact that the author obtained a very clear result with regard to the net effect of trade liberalization on the net national income when foreign capital is present. As was said also above, the net national income of the country exporting capital intensive good was concluded to be reduced.

The connotation of this conclusion in the present context of economic development of so called newly industrializing countries is very important. The presence of foreign capital becomes rather dubious concerning their contribution to the net national income.

The reason why this paper has come out with rather negative conclusion depends partly because of the static analysis of the problem. The author does not consider the case of comparative statics introducing the expansion of an economy, if he had done so, the picture might have been sizably different. In fact, the author strictly limits the analysis within the case of stationary picture without admitting any change of the small transformation curves. It is not always the case that the geometrical conclusion will support the author's present analysis.

Even if we confine our analysis to the static framework to follow Mr. Tironi, it is still quite arbitrary that we come to the same conclusion as himself with respect to the crucial issue of whether net national income will *always* decline when trade liberalization takes place under the presence of foreign capital. In fact the budget line of NN in Figure 1 or WD′ in Figure 2 may well cut across MM or VA′ respectively. It all depends on the shape of gross utility curves and their location as well as the shape of gross transformation curve. As a matter of fact, one will have to exert a good deal of trial to depict the same case as Mr. Tironi's neat analysis. It is obvious from this that Mr. Tironi's conclusion is one of possible alternatives and we should not generalize the particular case.

With respect to the assumption that all the capital is owned by the foreigners, it is much too simple an assumption even within the neoclassical framework. In view of the fact that most of the joint ventures in the developing countries do not have majority of capital shares but under 50 per cent, the conclusion obtained on the basis of present paper's assumption would not be reliable to base policy formulation even of the normative nature.

It would be more productive if we can admit the arbitrariness from the beginning and take piece meal approach by showing various cases depending upon the shapes of transformation curves and indifference curves admitting preferably the outward expansion of transformation curves. The model might as well be modified to accommodate capital accumulation of domestic sources. Otherwise in the present paper, it always benefit the country exporting labour intensive products at the sacrifice of capital, then dynamic advantage brought forth by the accumulation of capital will have no chance to occur.

It is much too regretful to analyse the negative effect of foreign investment alone with the exclusion of the positive effects on economic development. As a matter of fact, to give the tariff revenue in addition to the wage of labour intensive industry which already has enjoyed a comparative advantage would probably have to pay an opportunity cost of potential economic growth of capital intensive sectors. All these shortcomings have been caused mainly due to the analysis based on the static analysis based on the one set of transformation without paying consideration to the comparative statics. It seems desirable that we may obtain broader conclusion including such dynamic factors as capital accumulation, economic development and even technological innovation by pursuing one step further towards comparative statics. For it is in such a dynamic context that pro and con of foreign capital investments becomes real issue.

(January 1981)

Notes

(1) This brief paper is based on the report presented at the sixth world conference of International Economic Association (IEA) at Mexico City in Aug. 1980 and on the comments made by myself.

(2) This is mainly based on his report at the 6th IEA meeting held in Mexico City in Aug. 1980. There are following papers closely related to the subject written by the same author:

i) Bhagwati, J. and Tironi, E., "Tariff Change, Foreign Capital and Immiserization: A Theoretical Analysis", *Journal of Development Studies*, 1980.

ii) Tironi, E., "Customs Union Theory in the Presence of Foreign Firms", *Oxford Economic Papers*, 1980.

ティローニ氏の地域貿易自由化の利益分配論批判
〈要　　約〉

中　内　恒　夫

この論文は，昨年八月にメキシコ・シティで行われたIEA 第6回世界大会におけるティローニ氏の地域における貿易自由化による貿易利益の貿易当事国間における分配をめぐる報告の要点を紹介し，その貢献を記述すると同時に，同大会において行われた筆者のコメントを簡約して述べたものである。

ティローニ氏の報告の貢献は，新古典派分析の正統的思考を基礎としていて,「貿易の幾何学的分析」で分析しうる範囲をできるだけ拡大して題目に迫っているところに存する。極めて護教論的であり，幾何学的分析という制約の中で，外資が存在するばあいの貿易自由化の利益分配がどうなるかを適確な推論で追求する。手法は往年のJ・ヴェネック氏の国際的差別の一般均衡分析を想起させるものがあるが，二者ともカトリックの知的情操的背景を共有しているのは興味ある一致である。

さて分析ツールは単純明快であり，資本はすべて外国が所有し，労働はすべて自国に所属するという単純化の下に生産可能性曲線によって包囲される領域を二分化し,（報告には陽表的に述べられていないが）一次同次関数を仮定してあるため，アウタルキーと開放体系における地域的粗所得水準の増大と純国民所得の増大とを比較することができる。ティローニ氏は，外資存在のものでは前者が増大しても後者は減少するという結論を導いている。これは驚くべく明快である。

だが，問題がないわけではない。第一に，上記の一見明快な結論が，作

図の仕方によっては，つまり生産関数の形によっては実は偶然の結果であって，そうでない他の形がいくつもありうることを無視している点があげられる。外資に対する先入的懐疑がこの偶然を一般論と誤認したのでないことを望みたい。第二に，幾何学的分析でも，十分比較静学的図示によって，資本蓄積や技術進歩による可能性曲線の外方的拡張が示され，その結果が純国民所得の増大につながる点が忘却されている。これらは新古典派分析の枠内に限定したとしても生ずる欠落である。イデオロギーから自由な客観分析が数少なかった大会だけにこの点が惜しまれる。