

**THE FALLACY OF COMPOSITION:
A REVIEW OF THE LITERATURE**

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DISCUSSION PAPERS

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THE FALLACY OF COMPOSITION: A REVIEW OF THE LITERATURE

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Abstract

The paper reviews the literature on the fallacy of composition with an emphasis on labour-intensive manufactures. It briefly addresses the protectionist and the partial-equilibrium versions of the argument before focusing on general-equilibrium considerations and the debate on the manufactures terms of trade of developing countries. The review indicates a potential fallacy of composition problem in labour-intensive manufactures, where competition among different groups of developing countries for export market shares may constitute a new form of the fallacy of composition. The likelihood of a country that exports labour-intensive manufactures to become subject to the fallacy of composition rises with the increasing integration of several strongly populated low-income countries into world markets, while it declines with continuous structural change and favourable aggregate demand conditions particularly in developed and the advanced developing countries.

INTRODUCTION

The rapid economic development of the newly industrialized economies (NIEs) in East Asia over three decades was associated with rapid growth in exports of manufactures to developed countries. Some commentators have recommended that other developing countries follow the development path pioneered by these countries and direct their economies towards large-scale exports, in particular of labour-intensive manufactures, to developed countries.

Others have dismissed this recommendation as a feasible strategy only for a limited number of small economies arguing that it is a fallacy of composition to generalize from a part to the whole. The fallacy of composition – sometimes also called “adding-up problem” – means that what is viable for one small exporter acting in isolation may not be viable for a group of exporters acting at the same time: if all, in particular large, developing countries try to substantially increase exports of labour-intensive manufactures, there will be a risk that they encounter rising protective resistance from developed countries and/or that the terms of trade decline to such an extent that the benefits of any increased volume of exports is more than offset by losses due to lower export prices. Concern in this regard has become particularly acute by two events, first, the shift since the mid-1980s of several strongly populated low-income countries, notably in South Asia, towards more export-oriented strategies, which has strongly increased competition in world markets for labour-intensive manufactures, and second, China’s entry into the World Trade Organization (WTO), which is likely to give additional impetus to the strong rise in the exports of labour-intensive manufactures – in particular clothing, as well as parts and components in the electronics sector – that China has experienced over the past few years. Based on a review of the literature, the objective of this paper is

to discuss the implications of these two events on the fallacy of composition in labour-intensive manufactures.¹

Bhagwati (1958) first discussed the fallacy of composition in the context of immiserizing growth. Since then, at least four distinct versions of the fallacy of composition have been presented in the literature, namely (i) an early version pioneered by Cline (1982) who emphasizes protectionist tendencies in developed countries – beyond some critical level of import penetration, exports from developing countries will face rapid escalation of protective barriers in developed countries, (ii) a more recent version used by Faini, Clavijo and Senhadji-Semlali (1992) who focus on the elasticity of export demand from a partial equilibrium point of view – the elasticity of export demand for a group of countries is smaller in absolute value than the corresponding elasticity for an individual country, and (iii) a version identified by Havrylyshyn (1990) and first tested by Martin (1993) that highlights the general equilibrium nature of the fallacy of composition. Studies of the first or the second version have usually found evidence supporting the hypothesis that there is a fallacy of composition, while studies adopting the third approach have come to mixed results as far as overall exports for developing countries are concerned, but have often found support for the fallacy of composition argument with respect to labour-intensive manufactures.

The general equilibrium approach treats all products the same way. While this is justified from a balance-of-payments perspective, it constitutes a serious shortcoming from a developmental point of view because different products have different developmental potential. The process of structural change, which is central to the development process, is characterized by a decline of the agricultural sector – first as a share of GDP and then in absolute terms – brought about by a combination of three effects: Engel effects (the relatively low income elasticity of demand for food which, *ceteris paribus*, causes the price of food to decline in the world as a whole); Rybczynski effects (with relative commodity prices constant, changing relative factor supplies away from land and labour towards capital and skills increase output in sectors that use capital and skills intensely and reduce output in sectors that use other factors intensely), and differential rates of technical change (it is generally believed that productivity growth rates in agriculture are lower than in manufacturing).² Thus, manufactures can be considered as having dynamic properties that give them greater development potential than primary commodities. As a matter of fact, over the past few decades countries have not succeeded in growing rich by focusing exclusively on primary commodities (diamond-rich Botswana being the important exception). The catching-up of the NIEs to the income levels of developed countries, for example, has been closely linked to a continuous upgrading in their product and export structure beyond primary commodities, basic apparel and low-grade assembly.

Accordingly, the concern of a further (iv) version of the fallacy of composition argument is whether manufactured exports – both on aggregate and from specific manufacturing sectors – from

¹ Several studies, such as Bleaney (1993), Akiyama and Larson (1994) and Schiff (1995), have analysed the fallacy of composition argument for exports of primary commodities. They have generally found support for this argument with respect to a number of agricultural commodities, in particular bananas, cocoa, coffee, cotton, tea, and tobacco (World Bank, 1996:55), and for some other commodities (e.g. copper and petroleum). Export earnings from these commodities are of vital importance to a wide range of developing countries and the fallacy of composition has involved substantial revenue losses for them over recent decades.

² Martin and Mitra (2001) dispute the latter point arguing that at all levels of development technical progress appears to have been faster in agriculture than in manufacturing. However, as they note themselves (p. 417) it is not clear to what degree their finding is sensitive to the sample period (1967–1992) beginning very shortly after the establishment of a large-scale system for international agricultural research. Moreover, given that within their sample of developing countries, those economies which experienced rapid economic growth (e.g. the Republic of Korea and Taiwan Province of China) also experienced vastly higher productivity growth in manufacturing than in agriculture, this finding may just reflect the developmental failure of most of the other countries.

developing countries have been falling in price compared to those of developed countries. There is no conclusive evidence on how the manufactures terms of trade of developing countries as a group have moved. By contrast, it appears that different groups of developing countries have experienced considerably different developments in their manufactures terms of trade with the adverse effect being most pronounced for developing countries whose manufactured exports are composed largely of labour intensive goods. This might indicate that the fallacy of composition has moved, at least in part, from being an issue between developed and developing countries to one between different groups of developing countries.

The next four sections of this paper review the four versions of the fallacy of composition argument, while section five concludes and discusses policy implications. Appendix 1 briefly discusses the model of the Global Trade Analysis Project (GTAP) which is the framework frequently used in the general equilibrium version of the fallacy of composition argument, while Appendix 2 addresses some more technical issues in the statistical debate on measuring changes in the terms of trade.

I. THE PROTECTIONIST VERSION OF THE FALLACY OF COMPOSITION ARGUMENT

The protectionist version of the fallacy of composition argument was numerically elaborated in a comparative static analysis by Cline (1982). He simulates hypothetical developing country exports to developed countries on the assumption that all developing countries experience the same GDP-ratio of exports as was experienced by Hong Kong (China), the Republic of Korea, Singapore and Taiwan Province of China, i.e. the NIEs. The simulations take account of inter-country differences associated with the size and level of development as suggested by the Chenery and Syrquin (1975) 'norm' for the manufactured export share of a country. Cline computes the deviation of the NIEs from this norm and estimates on the basis of this benchmark by how much higher export-output ratios will need to be for other developing countries to achieve this same intensity. He calculates that this multiplication factor would be about twenty for some Latin American countries and nearly ten for the other developing countries. On these assumptions, developing country exports would have captured 61 per cent of the developed country import market in 1976, compared to the actual 17 per cent. According to Cline, such an outcome was precluded by protectionist reactions at the sectoral level, as import-penetration ratios exceeded the presumed acceptable threshold level of 15 per cent. The ensuing policy conclusion is that developing countries cannot replicate the export-promoting policies of the NIEs. If they did, they would stimulate protectionism in particular in product areas such as apparel, textiles, simple consumer goods, electrical household goods, etc.

Havrylyshyn (1990) presents the most elaborate criticism of Cline (1982). His main criticism regards the neglect of the fact that an increase in exports by developing countries is generally associated with an increase in their imports that in turn are exports by developed countries or by other developing countries. Havrylyshyn (1990:357) argues that during the 1970s, "exports of developed countries to developing countries have expanded *pari passu* with imports from developing countries." Given that higher developed country exports raise their level of income, the simulated import-penetration ratio declines. Following Ranis (1985), he also stresses that Cline (1982) incorrectly dismissed the fact that economic development is accompanied by a change in relative factor supplies, which gradually alters a country's production and export structure. As a result, different developing

countries will achieve a substantial manufactured goods export capacity at different points in time and produce goods with different attributes, even if they should all adopt export orientation at the same time. This would imply (i) a reduction in the number of products in which high import penetration may arise, (ii) greater room for new developing country exporters, and (iii) better opportunities for trade among developing countries. Havrylyshyn (1990) concludes that each of these three mechanisms is likely to reduce protectionist sentiments in developed countries to a considerable extent.

Rowthorn (1997) takes an approach similar to that of Cline (1982) but aims at addressing Havrylyshyn's (1990) main criticisms. Rowthorn uses a sample consisting of three Central European countries and 50 developing countries, which do not include the NIEs, and calculates the 'cross-country norm' for the GDP-ratio of manufactured exports from developing countries. This calculation is done for 1990 and based on the assumption that a country's GDP-ratio of manufactured exports is a function of its *per capita* income. By comparing the actual ratios with those that are predicted on the basis of the norm, it can be estimated by how much developing countries' manufactured exports will need to expand in order to replicate the performance of the NIEs, controlling for the effects of *per capita* income. The result suggests that total manufactured exports from developing countries, excluding the NIEs, to developed countries would have been three times their actual level in 1990.

In order to make the calculations dynamic, Rowthorn (1997) assumes in a second step that the *per capita* GDP of developing countries double and that in developed countries both GDP and apparent consumption of manufactures increase by 40 per cent. On these assumptions, manufactured exports from developing countries, excluding the NIEs, to developed countries would have exceeded their actual level in 1990 more than eight-fold, their share in the GDP of developed countries would have risen from 1.1 per cent to 6.5 per cent, and their share in developed countries' apparent consumption of manufactures would have increased from 2.1 per cent to 11.9 per cent. Rowthorn (1997) emphasizes that developed countries raise their exports of other types of manufactures and of services as a counterpart to the absorption of the additional imports from developing countries. This softens the impact of increased developing country exports on the economies of developed countries overall. However, additional imports from developing countries also entail substantial structural change in developed countries which is likely to be smooth only in an expansionary environment, with high investment and rising output in developed countries, and that protectionist tendencies in developed countries are likely to be thwarted only in such an expansionary environment.

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