Essays in

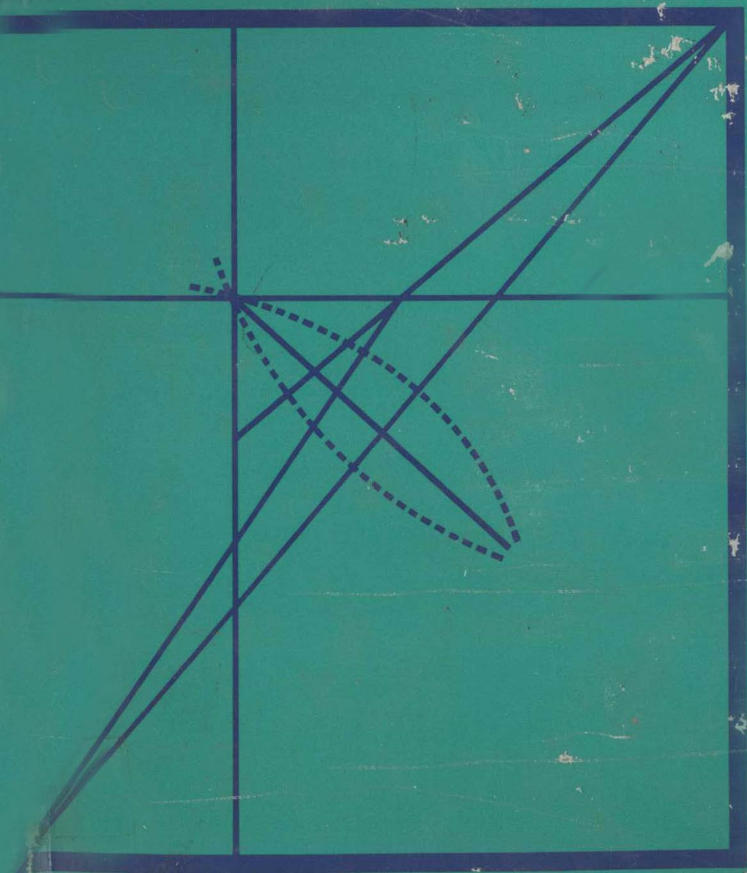
International Economic Theory

Volume 2

International Factor Mobility

Jagdish Bhagwati

edited by
Robert C. Feenstra



INTERNATIONAL FACTOR MOBILITY
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The MIT Press
Cambridge, Massachusetts
London, England

Printed and bound in the United States of America.

Library of Congress Cataloging in Publication Data
Bhagwati, Jagdish N., 1934–
International factor mobility.
(Essays in international economic theory; v. 2)
Includes bibliographies and index.
1. Commerce—Addresses, essays, lectures.
2. Brain drain—Addresses, essays, lectures.
3. Investments, Foreign—Addresses, essays, lectures.
4. Labor mobility—Addresses, essays, lectures.
I. Feenstra, Robert C. II. Title. III. Series:
Bhagwati, Jagdish N., 1934– . Essays in international economic theory; v. 2.
HF1411.B466 1983 vol. 2 337s [331.12'791] 83-859
ISBN 0-262-02197-8

Author's Preface

These two volumes contain a selection of my major writings in the theory of international trade since my first note on the theory of immiserizing growth appeared a little over two decades ago in the *Review of Economic Studies* in June 1958.

I have had the pleasure of collaborating with a number of teachers, students, and colleagues over a number of years. My debt to them is considerable. Harry Johnson, with whom I wrote two papers (both in volume 1), and T. N. Srinivasan, with whom I have written several (in both volumes), deserve particular thanks. The former seduced me into international trade at Cambridge, England, where I studied for the Economics Tripos during 1954–1956; the latter has been a close friend and collaborator ever since his return to Delhi in 1964 from his PhD at Yale. In addition, I must list among my colleagues and friends the following coauthors as well: Padma Desai, Koichi Hamada, Bent Hansen, Murray Kemp, V. K. Ramaswami, and Henry Wan, Jr. And my collaborating students have included Richard Brecher, Robert Feenstra, and Earl Grinols.

I am particularly thankful to Robert Feenstra for editing these two volumes with great care and attention to detail. MIT produced in the mid-1950s, when I had the good fortune to spend a year (1956–1957) there, a major generation of trade theorists, among whom were Ronald Jones, Robert Mundell, Jaroslav Vanek, Egon Sohmen, Ronald Findlay, and other important scholars, such as Stephen Hymer and Carlos Diaz Alejandro. I had the additional good fortune during my years at MIT (1968–1980) to oversee a new wave: Richard Brecher (cross-registering from Harvard), Paul Krugman, Gene Grossman, Robert Feenstra, and Earl Grinols, to name several of the leading young trade-theorists today. To have one of them edit these volumes is a great pleasure indeed.

Editor's Preface

These two volumes of Jagdish Bhagwati's essays in the theory of international trade are arranged into broad areas: first, commercial policy; and second, factor mobility. Each volume begins with essays of general interest and is then divided into specific topics. Earlier reprinted articles from *Trade, Tariffs and Growth,* including Bhagwati's widely read survey of international trade, have also been included. Editorial notes and errata are provided at the ends of the essays, where appropriate.

I had the pleasure of reading many of these essays while studying international economics with T. N. Srinivasan and Jagdish Bhagwati at the Massachusetts Institute of Technology. A substantial number of the essays in volume 1 are the result of their fruitful collaboration. Editing these volumes has filled out the gaps in my own reading, and increased my admiration for Bhagwati's significant contribution to trade theory over the past twenty-five years.

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I
INTERNATIONAL FACTOR MOBILITY: SYNTHESES

International Factor Movements and National Advantage*

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Introductory Remarks

I am particularly touched by the invitation to give the V.K. Ramaswami Lecture this year. We were close personally and our friendship was enriched by a considerable body of joint theoretical work that was conceived and executed during his visits to Oxford and mine to Delhi over a period of many years.

Ramaswami's distinction lay, not in creating dazzling but irrelevant logical constructs, but rather in the uncanny instinct with which he sensed an interesting analytical problem in issues of practical policy. Thus many of his most interesting trade-theoretic papers had a direct policy relevance, in the best tradition of economic science. And, despite the many claims on his time – it is remarkable that he was an overworked bureaucrat – he found the energy and the inclination to turn his analytical gifts on a wide range of problems.

For example, he wrote two seminal papers on subjects that have been at the centre of active trade-theoretic research subsequently: the celebrated [1963] paper on distortions that stimulated and defined the framework of the recent, voluminous literature on the theory of policy intervention in an open economy; and his famous [1971] construction of an example designed to show the impossibility of devising an effective-rate-of-protection (ERP) index in the presence of generalized substitution, which was to generate sufficient controversy to provide the impetus for other theorists to analyse the ERP index in general-equilibrium models.

He wrote much else. Indeed, the subject-matter of this Lecture was immediately evident to me when, in the course of recently formulating the analytical problems raised by the international movements of labour, I thought of a new policy-suggested problem only to have my memory jogged that Ramaswami probably had formulated the same problem many years ago. On consulting his posthumously collected *Essays*, I was delighted to find that my memory had served me right. Indeed, here was a beautiful little piece, of five terse and economical paragraphs

*Thanks are due to National Science Foundation Grant No. SOC77-07188 for financial support of the research underlying this lecture. Pranab Bardhan, Koichi Hamada, and T.N. Srinivasan made helpful suggestions on an earlier draft of the lecture (The 9th V.K. Ramaswami Memorial Lecture).

so characteristic of Ramaswami, on the very same problem of international factor mobility and national advantage! As I shall argue presently, this neglected piece poses an interesting problem of considerable originality: and one that has some relevance today.

Nothing would be more appropriate, therefore, than the present occasion to rescue this contribution of Ramaswami's from oblivion. And, in doing this, I have decided to set it in the perspective of the modern policy-related, welfare theory of international factor flows.

I. Asymmetries and Philosophical Contrasts

I shall proceed initially to analyse international capital mobility, focusing on its interaction with national advantage, and will consider labour mobility across countries only later.[1] It should suffice to say here that consideration of international labour mobility can be treated symmetrically with the analysis of capital mobility, except for two critical questions: *first*, the simultaneous consideration of mobility by both factors opens up, as will be evident below, policy and analytical questions that consideration of only one of them precludes; and *second*, there *is* a fundamental asymmetry between the two types of factor mobility across countries, when one considers the impact of such mobility on "national" advantage.

This fundamental asymmetry in the treatment of international mobility of capital and of labour is to be traced to the fact that, in the latter case, one has an ambiguous definition of the population over which welfare is to be defined.

Thus, the investment of capital abroad does not affect, in principle, the group over which "national" welfare will be defined. By contrast, the "migration" of human beings raises the question: are the migrants part of this group? There is no universal answer to this question. Migrants who are temporary, because of explicit rules in that regard as with *gastarbeiters* in Western Europe and imported workers in the oil-rich Middle East, evidently will classify as part of the "national" population. But what of permanently emigrating nationals? If they do "go away" for good, as with emigration from Soviet Russia, there is a convincing case for treating "national" welfare as defined only over "those left behind".[2] On the other hand, as seems to be the case today with a large fraction of the highly skilled migration from the LDCs (less developed countries) to the DCs (developed countries), if this migrant population is characterized by retention of ethnic ties to the country of origin, a high frequency of visits and even continuation of citizenship status in many cases, the fact of permanent migration (embodied in the holding

1. I shall abstain from discussing recent analytical work on international transfer of technology, including that which is pertinent to discussing *direct* foreign investment. My analysis is primarily focused on capital and labour flows.
2. These issues have been raised in Bhagwati and Rodriguez [1975].

of immigrant visas) is thoroughly compatible with the analyst including such migrants in the definition of "national" welfare for the country of origin.

The critical nature of this issue will become apparent from a single example. Suppose that the migration leaves those left behind marginally impoverished, while the migrants improve themselves (as would be the presumption with voluntary migration). If the immigration is to be treated as justifying the definition of national welfare only over those left behind, migration evidently has worsened national welfare. However, if the migrants are to be treated as a part of the national population, social welfare functions could easily be imagined that would enable one to judge the migration to be welfare-improving.

Having thus forewarned you against drawing unwarranted parallels between the analyses of capital and labour mobility, let me now draw your attention to a sharp distinction between two different questions that may be raised to advantage in the welfare-theoretic analysis of international factor mobility.

These two questions may be posed, while formulating our analysis (without loss of generality) from the viewpoint of a capital-importing rather than capital-exporting country. The classic question is whether capital inflow, *left to itself*, is to national advantage; and the companion question relates to the nature of *policy intervention* to regulate the inflow to secure national advantage.

The former question has traditionally divided economists into two major ideological camps which I have described elsewhere (Bhagwati [1976]) as the "benign neglect" and the "malign neglect" schools. The "benign neglect" school is where the liberal economists have traditionally gravitated, since it ties in with their customary tendency to look for the positive-sum-game (i.e. every party to a transaction gains) aspects of an economic transaction; the Invisible Hand caresses each and all. By contrast, the economists in the "malign neglect" school have focused rather on the zero(or even negative)-sum-game dimensions of such transactions: the Invisible Hand strokes some and strangulates others. These diverse viewpoints are nowhere more pronounced than in the ever-expanding literature on the impact of foreign investments on national advantage.

Related, but not identical, philosophical differences divide economists on the companion question of optimal policy intervention. Thus, most economists are inclined to proceed by assuming that, since the foreign investment inflow possibility necessarily augments the set of opportunities available to a country, optimal policy intervention can only improve welfare. However, this view implicitly disregards the possibility, central to writings from the Chicago school as also predictably from the other end of the political spectrum, that governments do not function so as to pursue the public interest but are rather the creatures of special interests, so that the politically *feasible* outcomes when foreign investment was available may well be dominated by those obtaining in its absence. The greatest contrast therefore follows between those who, focusing on optimal interventions by host governments, unconsciously transit to the extreme view that foreign capital inflow will occur in the presence of welfare-maximizing policies, and those who, following after a fashion in the Marxist tradition, go to the other extreme and consider the inflow to be occurring in the context of local policies designed to serve the interests of domestic elite groups (often sharing the spoils with the foreign elites in darker versions where the bourgeoisie of the world unites).

II. The Welfare Impact of Capital Inflow

It will serve us well to keep these political-philosophical contrasts in view as I proceed with, and frankly concentrate on, the more technical analysis of the issues at hand. I proceed immediately, however, to the *first* of the two questions that I posed above: namely, the impact of foreign capital inflow, left to itself, on national advantage.

A. Basic Proposition : No Impact

The simplest and most insightful way to address this question is to build the analysis around the central proposition that, in the absence of distortions, a "small" inflow of foreign capital will neither harm nor benefit the recipient nation. For, the rental on such capital (γ) will then equal the value of its private marginal product (PMP) which, in turn, will equal the social marginal product (SMP):

$$\gamma = \text{PMP} = \text{SMP}$$

The rental represents the cost, and the social marginal product the gross gain, to the recipient country: and their equality ensures the absence of gain or loss.

B. Gain from "Large" Inflow

This paradoxical outcome, that the inflow of capital or its absence is a matter of indifference to the recipient country, reflects of course the assumption that the influx is small. When it is "large", the presence of diminishing returns and the ensuing decline in the rental on foreign capital leaves the economy with a surplus: the rental equals the private marginal product for the marginal inflow but the total return to all capital is less than its contribution to national product, the difference accruing to the economy as a gain in income and hence in welfare. This is seen readily for a one-sector economy where the standard measure of the gain to the economy from a large inflow of foreign capital is the area under the marginal product curve net of the return to the capital. This is the striped area in Figure 1 where K_f is the magnitude of the inflow, γ is its competitive rental, OSRT is the total increase in product from the capital inflow, and OQRT is the total return to foreign capital, with SR being the marginal product curve as foreign capital inflow is varied.[3]

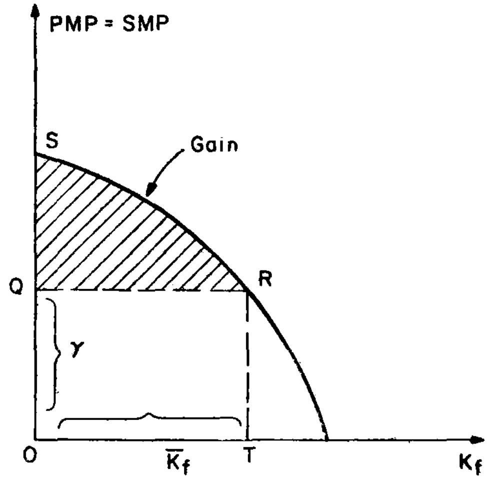

FIG. 1: K_f is the amount of foreign capital. Rental (γ) is OQ and total return to foreign capital is OQRT. SR is the marginal product curve. SQR is therefore the measure of the gain to the economy from the capital inflow.

The role of diminishing returns in this welfare-improving outcome is critical. For, it will be evident that if the capital inflow can be absorbed *without* diminishing returns, the no-impact proposition will resurrect itself even though the inflow is not small. Thus, consider a typical 2 × 2 model. With given commodity prices, it follows that factor prices and therefore factor proportions in the two commodities will remain unchanged, provided complete specialization or factor intensity reversal does not occur. The inflow and the resulting change in the factor endowment ratio will then produce a change only in relative outputs of the two commodities, with the relative and absolute output of the labour-intensive commodity falling and of the capital-intensive commodity rising (*a la* Rybczynski [1955]). The capital inflow therefore will *not* cause a decline in the reward to capital: diminishing returns will have been frustrated. More generally, as long as the economy remains within the McKenzie-Chipman diversification cone, defined on the pre-inflow factor prices, rewards to factors will *not* change, *no matter how large is the capital inflow*: and correspondingly the no-impact proposition will

3. For an extension of this argument to a dynamic framework of a growing economy, see Bardhan [1970] and Hamada [1966].

hold. This is illustrated in Figure 2. At the pre-inflow factor price-ratio AB, the factor proportions in X and Y production are given by OQ and OR respectively. The overall factor endowment ratio $\bar{K}/\bar{L}$ is only a weighted sum of the factor proportions in X and Y, given full employment. Any increase in the total endowment ratio via a capital inflow which leaves the economy still in the diversification cone QOR, as does the inflow raising the endowment ratio to $\bar{K}'/\bar{L}$, will permit the economy to remain at factor price-ratio AB, with factor proportions in X and Y unchanged.

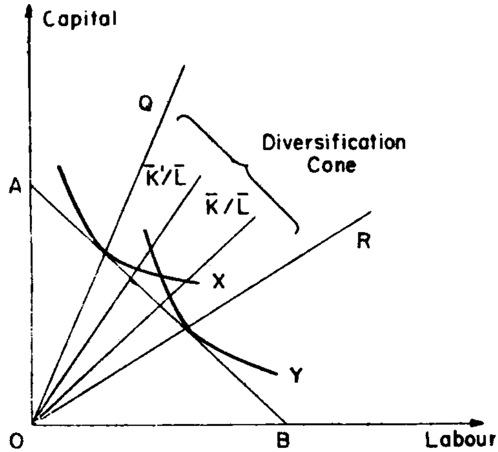

FIG. 2: OQ and OR are the factor proportions in X and Y respectively. QOR is the diversification cone. As long as the overall endowment ratio lies in this cone, diversification will obtain at factor price-ratio AB. A shift in endowment, for example from $\bar{K}/\bar{L}$ to $\bar{K}'/\bar{L}$, will *not* change factor prices and factor proportions. Diminishing returns are therefore frustrated within the cone QOR.

C. Distortions : Exogenous and Endogenous to the Capital Inflow

The presumption that follows, from the postulates of large flows and absence of distortions, is that capital inflows will be welfare-improving, with the limiting case of zero-impact if diminishing returns are frustrated. However, the interesting and important qualifications to this presumption follow precisely from the recognition and analysis of a number of distortions, whether in the nature of market imperfections or policy-imposed. In essence, they lead to an inequality between