TRADE AMONGST GROWING ECONOMIES

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TO MY PARENTS

PREFACE

Developments both within orthodox trade theory and outside it have suggested for some time that attempts should be made to build a rather different theory of international trade, a theory in which produced means of production, profits and accumulation feature prominently. The following essay is intended to contribute to the process of constructing such a theory of trade. The analysis which it presents is, for the most part, based on an extremely simple model of international trade, in order that the main thrust of the argument should stand out clearly; it need hardly be said, therefore, that certain important aspects of trade are not dealt with. At the same time, the reader is urged not to judge the analysis merely on the grounds of its simplicity, for some elements of that simplicity can readily be dispensed with—whilst others, of course, cannot. (Chapters 2 and 10 are particularly germane to the separation of the dispensable from the indispensable simplifications.) It may also be noted that the essential features of the theory of trade presented here do *not* include the particular 'closures of the system' used, these latter having been selected on grounds of expositional simplicity alone. It is hoped that the student will acquire from the following arguments not only a specific set of theoretical results—some the same as those of orthodox theory, some perhaps less familiar—but also a general approach to the analysis of trade, which can be adapted to specific problems and assumptions other than those considered below.

It was Jo Bradley, Gautam Mathur and Joan Robinson who, over the course of several years, gradually persuaded me to write this small book: if the labour of writing may sometimes have dimmed my appreciation of their persuasive powers, I gladly express my gratitude to them now. For their comments, criticisms and encouragement at various stages, I should like to thank C. J. Bliss, L. M. Briscoe, D. J. Coppock, C. L. Day, H. D. Evans, P. Garegnani and G. Mathur. I am especially indebted to M. C. Kemp, L. Mainwaring and, above all, J. S. Metcalfe, for their thorough reading of all the following chapters and even of several versions

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of them. I fear that none of the above-named can be held to share my responsibility for what follows.

I also wish to thank both Sheila Fenton and Miss Edith Gillett and her colleagues for their excellent typing of versions of this book.

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THE OBJECT OF A THEORY OF TRADE

A useful theory of international trade, while it can never capture all the myriad complexities of such trade, must necessarily focus on its major features. The principal trends in the volume and composition of world trade over recent decades are, fortunately, not difficult to discern, even though each single datum or series of data relating to trade is subject to significant error.

TRENDS IN VOLUME

It may be noted first that the volume of world trade has grown significantly faster than the volume of world output. Furthermore, with respect to both trade and output, manufactures have grown faster than primary products. A useful summary indication of these changes is provided by Table 1.1, which shows various volume indices for 1974, with 1960 = 100 in each case. As the authors properly point out, the table 'is intended to serve only as a broad indication of the overall changes in world production and trade'. While no great precision should be attributed to the index numbers presented, they are sufficiently different from one another to show clearly both the growing share of manufactures in trade and output and the growing share of international trade in all three types of production. (The table is taken from GATT, *International Trade*, 1975/76, p. 4; the quoted qualification appears on p. 188. Further bibliographical details of all

Table 1.1

	World exports	World commodity production	
Agricultural products	156	141	Agriculture
Minerals (including fuels and non-ferrous metals)	231	197	Mining
Manufactures	393	239	Manufacturing

works cited in either this chapter or the next will be found in the select bibliography at the end of chapter 2.)

TRENDS IN COMMODITY COMPOSITION

Not only has the share of manufactures in the volume of trade increased steadily but marked changes have occurred in the relative importance in trade of different types of manufactures. First, the importance of non-durable consumer goods, particularly clothing and textiles, has declined. Secondly, the proportion of manufactured exports accounted for by capital goods has increased dramatically; particularly fast growing in volume terms (though not always in value terms, due to their falling relative prices) have been exports of machinery, transport equipment and chemicals. Summarising the findings of his major study, *Industrial Growth and World Trade*, Maizels therefore concluded (p. 416) that 'there seems little doubt that in the final quarter of this century international trade in manufactures is likely to be largely, or even mainly, in the "development sector" of engineering and chemical products'.

TRENDS IN REGIONAL COMPOSITION

Since manufactures are now the dominant element in the exports of industrialised countries, it is to be expected that the growing role of manufactures in world trade has been associated with a corresponding growth in the importance of the industrialised countries. This is indeed the case. The share of total world exports accounted for by the non-industrialised countries, other than oil producers, has declined. At the same time, the share of the mutual trade of North America, Western Europe and Japan in the total value of world trade grew steadily, until in the early 1970s such 'intra-industrial' trade accounted for over 50 per cent of world trade in value terms. (International trade statistics generally aggregate the figures for the non-capitalist economies of Eastern Europe, China, etc., so that the industrialised and non-industrialised non-capitalist economies cannot be distinguished.) The large increases in the relative prices of oil and certain other primary products which then occurred caused a sharp reduction in this share in the *value* of trade but it would seem unlikely that the growth of the 'intra-industrial' share in the *volume* of world trade will be checked.

It is clear then, that a theory of capitalist trade should account for trade

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between growing economies, placing considerable emphasis on the role of manufactures and, in particular, the place of capital goods in trade and, of course, in production.

THE HECKSCHER–OHLIN–SAMUELSON THEORY OF TRADE

In recent decades the theory of international trade has been dominated by the (perhaps ill-named) Heckscher–Ohlin–Samuelson (HOS) theory. Yet this theory is not particularly well-suited to the analysis of trade in manufactured goods, including capital goods, amongst growing economies.

That the HOS theory is not entirely appropriate for the analysis of contemporary trade stands out most clearly when the theory is considered in its basic form, as set out, for example, in Samuelson's classic papers, of 1948 and 1949, on 'factor price equalisation'. (Other formulations will be considered below.) In this basic form of the HOS model, a country produces only two commodities, both consumption goods. No produced means of production (capital goods) are used, production being carried out directly by unassisted homogeneous labour and homogeneous land, the fixed supplies of both land and labour being fully employed. By assumption, no capital goods are produced or traded. Furthermore, since the supply of land in a country cannot grow, sustained, full employment, steady growth of the world economy is not possible, with constant relative prices, unless technical progress should happen, quite providentially, to 'save land' at a rate equal to the growth rate of the effective labour force. (While to allow for changing relative prices would introduce difficult questions concerning expectations.)

Unlike the barrier to sustained growth, the absence of produced means of production can, in one sense, be readily corrected within the analysis. As was shown by Samuelson (1953–54), for example, their introduction leaves the HOS analysis essentially unaltered, *provided that* the capitalists who organise and control the productive activities, into which the produced means of production enter as inputs, obtain no profit on the value of those produced inputs. Yet the proviso is essential and some of the fundamental theorems of HOS theory cease to hold once the existence of positive profits is admitted; see, for example, Metcalfe and Steedman (1977). Since we are concerned to analyse a world in which positive profits are obtained on the value of capital goods, it is the qualification, rather than the statement qualified, that is important.

The endowment of 'capital'

While the more careful presentations of HOS theory, such as those of Samuelson cited above, assume a country to be endowed with given quantities of labour and land, other (perhaps more frequent) formulations take the given endowments of a country to consist of labour and 'capital'. This endowment of 'capital' merits further scrutiny, since it plays a crucial role both in the basic HOS theorem on the pattern of trade between two countries and in determining whether both countries can be incompletely specialised in the trade equilibrium and thus whether the 'factor-price equalisation' theorem holds.

The traditional concept of 'capital', as opposed to land and labour, is that it consists of, or at the very least is embodied in, *produced* means of production. The 'capital' endowment found in many HOS analyses, however, is simply given in quantity, even in long-run equilibrium: it is an apparently homogeneous, malleable productive input: and often it does not consist of produced means of production, for the only productive sectors are frequently consumer goods sectors (see, e.g., Jones (1956–57), Lancaster (1957)).

One way to interpret this 'capital' endowment is obviously to say outright that it is not the traditional factor 'capital' at all but is simply the traditional factor, 'land', masquerading under another name. On this reading, one should simply strike out the term 'capital' whenever it occurs and replace it by 'land'; one would then be left with an analysis which clearly failed to deal with the crucial role of produced means of production.

Capital as value

There is, however, an alternative possible interpretation of the 'capital' endowment, namely as a given sum of *value*; the assumption is then that whatever concrete, physical form may be taken by the capital goods within an economy, their total value, in some standard, must be equal to the exogenously given 'capital endowment'. Such an interpretation clearly fits in well with the long-run equilibrium nature of all basic trade theory since, by the meaning of the term, such an equilibrium is one in which it is determined endogenously which specific capital goods exist.

It cannot be taken for granted, however, that the properties of the HOS analysis with a given endowment of capital value are precisely analogous to the properties of the basic version with a given endowment

of homogeneous land. This for the simple reason that a 'capital value' cannot be defined other than in terms of relative prices, which are to be determined *within* the analysis. It is thus less than transparent what is to be meant by saying that a country has a given endowment of capital value: in what units is this endowment measured? how does it come to be *given* in terms of, say, rice but *not given* in terms of, say, sunflower oil (for the relative prices of rice and sunflower oil are to be determined within the analysis)? Even were these puzzles resolved, the question would remain whether, by analogy with the properties of the land-based analysis, the capital–labour intensity of production in each sector is inversely related to the rate of profit and whether the price of a more capital-intensive commodity always rises relative to that of a less capital-intensive commodity when the rate of profit increases. The question is critical, for the monotonic relations at issue together constitute the very heart of HOS theory.

Now it has been demonstrated conclusively, by many different authors, that the capital–labour ratio in any sector need not be inversely related to the rate of profit (see Garegnani (1970) and Pasinetti (1977) for useful presentations of this point). Nor need the relative price of the more capital-intensive of two commodities rise as the rate of profit increases. Thus the two central properties of the land-based HOS analysis cannot be transferred by analogy to the version based on an endowment of capital value. As is to be expected, then, some of the principal standard conclusions of the HOS analysis are actually invalid, when applied to the capital value endowment case; see Metcalfe and Steedman (1973).

Thus it may reasonably be said that HOS theory fails to deal with the role of produced means of production (whether circulating or fixed capital goods), despite their evident and increasing importance: see Bhagwati (1964).

Growth

It is, consequently, not surprising, given the links between capital, profits and growth, that that theory has had relatively little to say about the persistent growth of output and trade: the majority of HOS analyses of 'growth' have been concerned with comparative statics results relating to the effects of a once-for-all increase in some exogenously given factor, e.g. labour supply. More recently, of course, a treatment of endogenous growth and trade has been developed within the HOS framework but

it is not entirely satisfactory, for much of this literature is concerned with the transition to long-run equilibrium, starting from an arbitrary 'capital–labour' ratio, in models assuming a single capital good which can be combined with labour according to a neo-classical production function. (See the select bibliography for references.) It has yet to be shown that such analyses give real insight into the long-run equilibrium properties of the multi-capital-good models which must be developed to deal with real-world problems.

Primary inputs and consumption

Whilst the HOS analysis is less than fully satisfactory in its treatment of capital and of accumulation, it does—at least in its basic (land endowment) form—focus attention on the roles of primary, non-produced inputs and of consumer behaviour in the determination of international trade. Since neither primary input endowments nor consumption behaviour will feature at all prominently in the analysis presented below, it might be thought that the latter analysis and the HOS analysis are thus neatly complementary, each emphasising what the other leaves undiscussed.

Yet while the basic HOS theory certainly emphasises the role of relative endowments of land and labour, it does not provide an adequate account of the influence of natural resources on patterns of output and trade. The basic assumption is that both land and labour are homogeneous, both within each country and as between countries. The assumption that there are only two kinds of primary input can, of course, be relaxed but only at the cost of losing the real force of the basic concepts of *relative* endowments and *relative* factor intensities. More importantly, the assumption that primary inputs are qualitatively homogeneous as between countries precisely rules out serious consideration of the real influence of natural resources on trade flows. It must also be remembered that the root idea of the basic HOS theory, that the rent–wage ratio is, *ceteris paribus*, inversely related to the land–labour ratio, is invalid as soon as there is a positive rate of profit on the value of produced means of production; see Metcalfe and Steedman (1972). Thus, appearances notwithstanding, HOS theory does not provide a satisfactory analysis of natural resources and their effects on trade.

Again, although the HOS theory might appear to say much about the influence of consumption on production and trade, that appearance is perhaps deceptive. It is assumed, first, that all consumers in the world

have identical preferences. It is then assumed, *in addition*, either that the common preference curves are homothetic or that, within each country, the structure of ownership of primary inputs is such that personal income shares are independent of relative primary input prices. It is well-established, within the HOS literature itself, that, unless these assumptions are made, HOS theory can say little about the pattern of production and trade. Few writers, therefore, would seriously maintain that that theory provides genuine knowledge about the influence of consumption behaviour on trade.

Thus while it is a merit of analyses within the HOS tradition that they oblige the reader to consider the question of how primary input endowments and consumption behaviour influence trade, it cannot be said that such analyses provide the corresponding answers.

CONCLUSION

It may be concluded that the HOS theory does not provide a firm foundation for the analysis of contemporary international trade. Authors working within the HOS tradition have themselves made very clear the difficulties which arise from unequal numbers of commodities and primary inputs, from 'factor intensity reversals', from increasing returns to scale, from non-identical preference patterns, and so on. When account is also taken of the need to give produced means of production, profits and growth a prominent role in the theory of trade, it would appear that an alternative framework for that theory should be sought.

2
A FRAMEWORK OF ANALYSIS

Before our detailed analysis is commenced in chapter 3, it will be well to set out here the general background assumptions and the analytical procedures which will inform the ensuing work. The reality of contemporary trade amongst growing economies is, it need hardly be said, highly complex and the reader will not expect that all its aspects will be captured by the theory presented below. Our analysis is based on the selection of simplifying assumptions which are judged to capture some of the strategic determinants of the object of investigation. No theory can do more. The analysis developed in this work does indeed focus attention on certain important relationships and determinations bearing upon central aspects of contemporary international trade; it is no less true that some important facets of such trade are not dealt with. The purpose of the present chapter is to set before the reader a clear statement of some of the major features, both positive and negative, of the work which follows. It is no part of the proper exposition of a theory to stress its strengths and to remain silent on its lacunae; both should be displayed, in order that the reader may form a reasoned assessment, acknowledging such insights as the theory may provide whilst recognising that they necessarily constitute less than the whole truth.

LONG-PERIOD EQUILIBRIUM

The simplest and most powerful tool for the analysis of the properties of an economy in which produced means of production are used is the method of long-period equilibrium. By definition, a long-period equilibrium displays the methods of production, the inputs, the outputs and the prices consistent with the existence of a uniform rate of profit. Since all inputs are variable in the long period, the quantities of all inputs, including the quantities of the various capital goods, are *endogenously* determined in such an equilibrium.

While a long-period equilibrium is certainly an analytical device,

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