1. Introduction

The past decade has seen a growing interest among economists in services generally and in international trade in services in particular. There are several reasons for this phenomenon. The first reason is the growing importance of services in most economies, as measured by their share in the value of national output. In countries experiencing structural unemployment the empirical significance of services, however measured, is reinforced by the importance of actual and potential employment in services. The second reason is the range of new possibilities for the development of services generated by technological changes in the service sector, the scale of which changes may amount to a services revolution on a par with the industrial revolution in the nineteenth century. Thirdly, and perhaps of more immediate significance to international trade in services, is the inclusion of services for the first time in the current round of GATT negotiations.

Traditionally service activities have not been traded internationally because such trade was technically impossible and/or prohibited by domestic regulation. Consequently the markets for service products have been essentially non-traded, with price and output being determined by domestic supply and demand. Recently, a literature has been evolving which models international trade in the service sector. Using a variety of different models, most papers have interpreted trade in services as trade in service factors; these factors combine with local factors to produce a non-tradeable service product. This interpretation follows in the tradition of Hill (1977), who characterizes services as involving the simultaneous location of consumption and production, thereby ruling out the idea of a tradeable service product. However, some papers dealing with the conceptual issues involved in defining services, subsequent to the publication of

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1 An obvious exception must be made for transportation services.

2 See, for example, Djajic and Kierzkowski (1986), Burgess (1990), and Melvin (1989). An exception is Deardorff (1985) who looks separately at services as final products as well as factor inputs. Grubel (1987) also notes that domestic services are traded implicitly as inputs in merchandise trade.
Hill's influential paper, have noted the restrictiveness of Hill's definition. More recently, Melvin (1987) notes that Hill's definition simply relates to contact services, and that there exists a range of services which do permit a separation of the location of production and consumption in space as well as time, so that service trade may take place either at the factor or at the product level. Examples of such service products include certain management-consulting and accounting services, engineering services, legal services, data processing and telecommunications services, and financial and insurance services.

The present paper deals with services such as these, where more than one option exists for international trade: (i) there can either be trade in the service factor, where it combines with local factors to produce a non-traded service product, or (ii) there can be trade in the service product itself, involving no further production in the foreign country. Which option is more appropriate for a country to adopt if it wishes to expose its service sector to world markets? Should a government which is contemplating opening up such services to trade facilitate trade in factors, by giving foreign companies a right to establish and seeking reciprocal agreements for its own companies, or should it facilitate trade in service products, thereby negotiating a right to do business for companies? As pointed out by Aronson and Cowley (1984) this issue could be extremely important in any GATT negotiations on service trade, particularly as GATT by tradition has been concerned with product trade rather than factor trade.

International banking provides an example of a service in which these options exist. Here the 'banking factor' is a composite factor of managerial and other skills and the 'banking product' is the service of loan-matching, financial contacts, etc., which a bank can provide for its corporate and personal customers. Until very recently both technological constraints and domestic regulations in most countries have restricted international trade in retail banking services. With technological advances, it is now possible to process a variety of banking services at a distance from the customer, so that any constraint on trade in such banking products depends for the most part on domestic regulation. In the case of the banking factor, trade depends entirely on the banks' being granted the right to establish, i.e. set up branches or subsidiaries in foreign markets. To date, most foreign banks operate under very strict guidelines, being allowed to compete with local banks only in a limited range of services and often at a disadvantage. (As Caves (1982) has

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3 This restrictiveness is also noted in Hindley and Smith (1984), Sampson and Snape (1985), Sapir (1985), Bhagwati (1987), and King (1987).
4 The distinction between the possibilities for service trade taking place at the factor or product level is discussed in Ruane (1988).
5 Clearly for Hill's contact services, it is not meaningful to discuss trade in services at the product level.
6 The degree of domestic regulation tends to be more severe in the case of smaller countries. Thus while a US customer may be able to purchase certain retail banking services directly over the phone from a bank in Montreal, an Irish customer would be legally prohibited from so doing.
7 See Neu (1988) for a discussion of trade in international banking services.
8 See Neu (1988) for several examples of these constraints.
pointed out, much of the growth in banking services internationally occurred as services to direct foreign investment companies, and in many cases permission to establish was primarily granted with a view to those banks serving such companies.)

In the context of our remarks on banking, the issue raised by this paper can be illustrated by the following example. Consider a country which has a high price of banking service products and a high rate of return to banking factors and which is contemplating opening its banking sector to international trade either at the product or factor level. Should that country allow foreign banks to establish, operating under the same conditions as domestic banks in the same range of service activities, or should it allow the foreign banks the right to do business, with domestic residents and companies permitted to purchase their banking services from abroad more cheaply? In the first instance, the volume of domestic production of banking services would increase, as local factors combine with the international service factors to produce more non-traded service products, whereas in the latter case the volume of domestic production would decline as domestic residents would purchase cheaper service products from abroad. Similar issues arise with insurance and stockbroking, where there is a high level of domestic regulation, and also, in a different institutional framework, with data processing and telecommunications services.

In this paper we develop a very simple model which allows us to focus clearly on the particular issue of the choice of level at which to facilitate service trade. We examine the differences between sectoral adjustments which occur under the different trade options. In Section 2 of the paper we set out our stripped-down model, and in Section 3 examine the alternative outcomes of trade at the different levels when relative endowments in the home country are ‘balanced’, i.e. of similar orders of magnitude to those in the rest of the world. In Section 4 we look at sectoral adjustments under trade at different levels when relative endowments in the home country are ‘extreme’ compared with those in the rest of the world, and in Section 5 we compare the outcomes of trade at each level separately with trade at both levels; we refer to the case of trade at both levels as ‘completely free trade’. Finally, in Section 6 we discuss the implications of the different trade options for income distribution, while in Section 7 we present some concluding remarks.

2. The model

In order to focus on the options for trade in services from an initial state in which service products and factors are completely sheltered from the world market, we choose a uniform background for all other productive activities. We assume all production, including services, is of the type described by the specific-factors framework. That is, each activity makes use of a factor used only in that process, as well as another input (labour) available to all sectors. Whereas labour is trapped by national borders, every specific factor in non-service activities is internationally mobile. As well, there is competition and
free trade in all non-service products. Thus the degree of openness is larger than typically assumed. We ignore issues of price determination by considering the economy to be a price-taker in both international product and factor markets. However, we allow technology available in this country to differ from that found elsewhere for any productive activity. As we develop below, inter-country differences in technological knowledge and in relative factor endowments both bear upon the choice of trade in services at the factor or at the product level.

With such a predominant role for trade the country's trade pattern in this simple model is Ricardian in the sense that it will typically produce only one non-service product, which we call $M$, the manufacturing product.\(^9\) This is the product which yields the highest available return to labour when subtraction from total revenue is made for rentals to specific factors (with such rentals being determined on world markets). Thus at this stage of the argument the country is (i) receiving income from earnings of specific factors sent abroad (because their related activities are not undertaken at home given the competitive pressures of trade), (ii) either importing or exporting the specific factor used in manufacturing, (iii) producing and exporting the manufactured product in exchange for a variety of consumer goods not produced locally, and (iv) producing a service product strictly for the local market. Overall payments are balanced, including incomes paid to foreign factors or received by domestic factors employed abroad. The specific factor used in the service sector (the service factor) and the output of activity in the service sector (the service product) have their return and price determined by local demand and supply conditions.

Although labour is not internationally mobile, the home wage rate is completely determined by the degree of openness in world markets for non-service specific factors and products. This wage rate is typically not equal to those found in the rest of the world since home technology is presumed to be different from that found elsewhere. Competitive conditions dictate that the wage rate, $w$, is shown by

$$w = \frac{p^*_M - a_{KM}\theta^*_M}{a_{LM}}, \quad (1)$$

where $p^*_M$ and $\theta^*_M$ are the world product price and return to the specific factor in the manufacturing sector (the non-service sector in which the home country has the greatest comparative advantage), and $a_{LM}$ and $a_{KM}$ are labour and capital input–output coefficients in that sector.\(^10\) With the wage rate thus determined, the competitive profit equation of change in the service sector

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9 Thus the model is in effect a version of the specific-factors, two-sector model in which both the output and the specific factor in one sector are always exposed to international markets.

10 Both labour and capital input–output coefficients respond smoothly to changes in input prices. The wage rate, shown by (1), is such that $w > \frac{\theta^*_j - a_{KL}\theta^*_j}{a_{Lj}}$ for all other potential traded activities, $j$. 
becomes (2):
\[
\theta_{KS} \hat{r}_S = \hat{p}_S, \tag{2}
\]
where a circumflex over a variable refers to a relative change (\(\hat{x} = dx/x\)), \(\theta_{KS}\) is the specific factor’s distributive share in the service sector, \(r_S\) indicates the local return to the service factor, and \(p_S\) is the domestic price of the service product. Any increase in the price of the service product must be matched by a greater than proportionate increase in the return to the service factor.

The relationship between home return to the service factor, \(r_S\), and home product price, \(p_S\), which is described by equation 2, is illustrated by the locus in the left-hand panel of Fig. 1. Since technology and the skills of factors are assumed to differ at home and abroad, the world values for the service specific-factor return and product price need not lie on this locus. Let \(C^*\) denote the given world values, \(r^*_S\) and \(p^*_S\). We have arbitrarily located this point north-east of the locus in Fig. 1, revealing the home country to possess a technological comparative advantage in the service activity relative to manufacturing. That is, if the home country were to pay the service factor the world rate of return, its cost of producing the service product would lie below the world price whereas, in the \(M\)-sector, cost would equal world price.\(^{11}\)

An alternative view of the presumed technological comparative advantage in services is provided by asking how the home and world returns to the service factor...
factor would compare if the service product were freely traded at the world price $p^*_s$. In such a case the home country’s superiority in the service sector would be reflected in the higher return (distance $EC^*$) earned by the service factor at home.

The left-hand panel in Fig. 1 reveals the presumed technological comparative advantage of the service sector in the home country. Does this imply that once trade is allowed in the service sector that the home country will either export the service product or attract the service factor from abroad? Not necessarily. The pattern of trade depends not only upon comparisons of technology, but also on relative factor endowments; the latter serve to determine the location of the pre-trade home values for $r_s$ and $p_s$ along the curve in the left-hand panel of Fig. 1. Put differently, home factor endowments influence the position of the demand and supply curves for the service product shown in the right-hand panel of Fig. 1.

The position of the supply curve depends on local technology and the endowment of the specific service factors. The demand curve reflects not only local taste patterns but also the endowments of all national factors, whether employed at home or abroad, since these determine national income. The demand and supply curves intersect at $C'$, and this determines the initial location at $C$ on the $r_s - p_s$ locus in the left-hand panel. As drawn in Fig. 1, the home country’s supplies of the service factor are considered roughly in ‘balance’ relative to the rest of the world in the sense that its presumed technological comparative advantage in the service activity is reflected both in an initial relatively low cost of the service product ($p_s(C) < p^*_s$) and in a relatively high return to the service factor ($r_s(C) > r^*_s$).

3. Alternative trade outlets for services

The endowment of the service factor implicit in the supply curve shown in Fig. 1 suggests that the home country could gain by allowing trade either in its service factor or in its service product. Initial equilibrium is at $C$ and $C'$ in the two panels of Fig. 1. Suppose, first, that the country considers the option of trade in the service product. At $C$ or $C'$ the home price of the service product is lower than that found abroad. Home producers would be attracted by the relatively high price $p^*_S$ abroad and output would expand along the given $x_s(K^C_S)$ supply curve. At world price $p^*_S$, output would have expanded to

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12 Given the wage rate (determined by the world price for the manufactured good), the position of the supply curve depends on the endowment of the service factor but not on the endowment of labour. The reason: at a given value for $p_s$ an increase in home labour endowment would attract sufficient $K^M_s$ to keep the wage rate from changing. In this event output of the manufacturing sector would rise, but output of the service product would remain unchanged. However, if the economy had a larger labour force, the demand curve and thus the domestic price of non-traded services would be affected.

13 In what follows we simplify by ignoring shifts in the demand curve which are induced by the real income gains that result from opening services to trade. The size of the modification required because of this income effect is smaller the lower the value of the marginal propensity to consume services.
point $E'$. The home country would gain from such trade. These gains ($\Delta W$) are captured by the integral over all increments in output from $C'$ to $E'$ of the gap between foreign price, $p^*_S$ (given at $C^*$) and ever-rising home costs, $p_S(x_S)$, along the supply curve, times the increase in exports ($X_S$). Letting $X_S$ represent the level of exports at $p^*_S$, then

$$\Delta W = \int_0^{X_S} [p^*_S - p_S(x_S)] \, dX_S. \quad (3)$$

From the initial non-traded equilibrium at $C'$ the alternative option for the home country involves allowing foreign service factors entry into the home market with the service product remaining non-traded. The inflow of the foreign specific factor, $K^*_S$, to be combined with home labour at the wage rate determined by trading activity in manufactures, shifts the supply curve in Fig. 1 rightwards until local price $p^*_S$ is attained. At this lower price the total return to the service factor is equated to world $r^*_S$. During this process, each increment in foreign service inflow, $dK^*_S$, raises welfare by an amount proportional to the gap between $r_S(p_S)$ and given $r^*_S$. Formally, the total gain accruing to the home country from opening trade in the service factor is

$$\Delta W = \int_0^{K^*_S} [r_S(p_S(K^*_S)) - r^*_S] \, dK^*_S, \quad (4)$$

where $K^*_S$ denotes total specific factor inflow when local $r_S$ has been driven down to the world level.

If initial point $C$ is balanced between points $E$ and $B$ in the left-hand panel of Fig. 1, it is not clear which option, trade in the service product or trade in the service factor, is preferable. If, by contrast, point $C$ lay close to point $B$ (i.e. the home country originally possessed somewhat more of the service factor in its endowment bundle), little would be gained by allowing inflows of the service factor. Of the two alternative options, gains from trade would accrue primarily to opening up trade in the service product.

Each of the two routes whereby the service sector is put in contact with the world market results in gains, and each results in an expansion of service output at home. With trade at the product level, such expansion results in a rise in local price; producers move up along the supply curve and consumers are forced to cut back on the quantity of services demanded. By contrast, if foreign service factors are allowed entry (via providing the right of establishment), the resulting expansion in service activity reaches out only to home consumers but entails a reduction in home price (as the sector moves down along the demand curve). Trade in the service factor has brought the local return to the service factor

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14 We are assuming that the foreign service factor earns only $r^*_S$. The difference between $r^*_S$ and $r_S$ accrues to the home country.

15 If, instead, the initial point $C$ lay closer to point $E$, little would be gained by allowing trade in the service product, and larger gains from trade would accrue from an inflow of the foreign service factor.
down to the world level, but increased the discrepancy between home and foreign prices of the service product. Trade in the service product would, by itself, equate the final domestic price of services to the world price, but would increase the premium which the service factor earns at home.

4. Extreme endowments and mixed signals

Although the home country is presumed to possess a technological comparative advantage in producing the service product, the relative price of the service product and the return to the service factor are each affected as well by the amount of the service factor available locally before trade. Figure 2 illustrates a case in which the autarky service values at C reflect a strikingly low relative price for the service product, with a consequent pre-trade return to the service factor at a lower level than world $r_s^*$. This comparison reveals that the home country has an abundance of the service factor relative to its supply of labour and other specific factors; such an extreme composition of endowments serves to position the supply curve for the service product outwards relative to the position of the demand curve.

It is once again possible to argue that opening up trade either at the product level or at the factor level will yield gains to the economy. However, in this case the two options point in opposite directions in terms of the fate of the local service sector. Note that autarky point C in the left-hand panel is closer to point B (indicating the local $(r_s, p_s)$ combination that would emerge if the service factor is freely traded, so that $r_s = r_s^*$), than it is to E (at which point the product trades at $p_s^*$). Allowing trade in the service factor leads to an outflow which serves to shift the supply curve in the right-hand panel leftwards. Price

![Figure 2](image-url)
and output in the non-traded service sector move up the demand curve from C' to B'. Thus opening up the market in the service factor has caused output in the service sector to fall. Nevertheless such a decline in output raises local real incomes since each unit of the service factor which exits earns more abroad \((r_s^*)\) than is foregone at home \((r_s)\).

The welfare gains from such trade in the service factor can unambiguously be compared with the gains which would accrue if, instead, the market in the service product had been opened up to world competition. To facilitate the comparison, suppose the world \((r_s^*, p_s^*)\) combination were at B instead of C* in the left-hand panel of Fig. 2. This would reflect a situation in which the home country shared the same technology as the rest of the world but had a relative abundance of the service factor in its endowment bundle. Then the previously calculated gains resulting from service factors flowing out to earn \(r_s^*\) abroad, which involve output moving along the demand curve from C' to B', are equivalent to the gains which would accrue if the product trade option resulting in exports is chosen instead of the option leading to a factor outflow. With the product trade option, output increases from C' to B" along the supply curve. Note that it is possible to go from B' to B" or vice versa by a movement of the service factor (and appropriate correction to exports) without any alteration in welfare. However, we have assumed that the home country possesses a technological comparative advantage in producing the service product relative to manufacturing, so that the actual foreign price of the service product is shown by C* instead of B. This implies that the export-of-goods route from C' to B" is preferred. The reason: each export unit earns the additional increment of \((p_s^* - p_s^B)\). Furthermore, the trade in product option yields extra gains in expanding production (and exports) from B" to E' along the supply curve.

From initial point C the comparison of local prices \((r_s, p_s)\) with those in world markets \((r_s^*, p_s^*)\) results in mixed signals. The superabundance of the service factor in the endowment bundle would prompt its exodus if trade in this factor were to be opened up, and this would cut back the size of the service sector from C' to B'. By contrast, should the option of trade in the service product be chosen, the economy's technological comparative advantage in producing the service product would be combined with its superabundance of the service factor, resulting in a substantial expansion in the service sector until costs are driven up to world levels at E'.

It is instructive to look briefly at an alternative extreme composition of the home endowment bundle. If the home country had been endowed with sufficiently small amounts of the service factor, the supply curve would have intersected the demand curve at a point such as F', yielding a high autarky service price compared with \(p_s^*\). That is, the endowment difference would outweigh the home technological comparative advantage displayed in the left-hand panel of Fig. 2 by the relative positions of C* and the \(r_s - p_s\) locus. The welfare comparisons in this case, in which the service factor is found in quite limited supplies, can quickly be sketched. From initial point F', free trade in the service product would involve its importation (of amount \(GE'\)) at world
\( p_s \). The gain that such trade in the service product yields would exactly match that of allowing the foreign service factor to come into the country if it had to be paid \( r_s^f \), that is, if the foreign technology were the same as that at home. However, with our assumption of foreign technological disadvantage in services, the service factor can be obtained at the lower value, \( r_s^f \). Therefore, service factor inflows up to \( E'' \) are preferable to service product trade. And, to repeat the kind of argument used previously, there are further gains to be had by continuing service factor inflows until the supply curve intersects the demand curve at \( B' \).

The conclusions that emerge from both cases in which factor endowment differences outweigh differences in technologies at home and abroad are twofold: (i) trade at the factor level moves output of the local service sector in a direction opposite to that taken when trade at the product level is opened up instead, and (ii) of the two alternative trading options, the one corresponding to expansion of the service sector yields greater gains, given our initial assumption that the country has a technological comparative advantage in producing services. Furthermore, this route involves ‘overshooting’ of the position which would be established if trade in the other option were followed—reflective of the wider gap between the autarky and world prices of the service product, when the country has a superabundance of the service factor in its endowment bundle, or between the autarky and world prices of the service factor, when the service factor is extremely scarce locally.

5. Completely free trade

Thus far we have concentrated on comparing partial moves towards free trade as the country opens up the market for either its service product or its service factor to international competition. Suppose, however, a country intends to move eventually towards free trade at both levels—in other words, to completely free trade in all products and specific factors, in both manufacturing and service sectors. As we shall see, so long as technologies differ across countries, such a degree of openness does not tolerate simultaneous production in more than one sector, and the concept of technological comparative advantage comes into its own in determining which sector survives. Furthermore, the adjustment path associated with each ordering will be quite different.

Suppose the path to completely free trade is undertaken in separate stages—first at the service-factor level and then at the service-product level, or vice versa. To see what difference the ordering makes, consider Fig. 3, which resembles the left-hand panel of Figs. 1 and 2 but exhibits three possible \( r_s - p_s \) loci:

(i) Curve I illustrates the neutral case in which home and foreign countries possess identical technical knowledge in services and manufacturing. (We still assume that the home country is at a technological disadvantage in all other sectors relative to manufacturing.) The \( r_s - p_s \) curve passes
through fixed point C*, which shows the rate of return to the specific sector used in services ($r_s^*$) and the price of the service product ($p_s^*$), both of which are assumed given on world markets. Point C* remains fixed for all three scenarios.

(ii) Curve II passes south-west of C*, and illustrates the case in which the home country possesses a technological comparative advantage in services compared to manufacturing. This is the case which we have examined with the aid of Figs. 1 and 2.

(iii) Curve III provides the contrasting situation in which the home country has a technological comparative disadvantage in producing the service product.

The meaning of technological comparative advantage or disadvantage is revealed by a comparison of the relative cost of producing the service product in each case with given world $p_s^*$ if the home country had to pay $r_s^*$ for the
specific factor employed in the service sector:

\[ p_s^{II}(r_s^*) < p_s^* < p_s^{III}(r_s^*) \]

Case (i), in which technology is comparable at home and abroad, serves as a benchmark for comparison. Despite the comparability in technologies, autarky home price of the service product and return to the specific factor used in services need not match up with prices and returns found abroad (shown by \( C^* \) in Fig. 3). Since in autarky local taste patterns influence the price of the service product, the home point along curve I need not be \( C^* \) even if endowments are similar in composition to those in the rest of the world. However, we wish to emphasize the role of endowment differences and therefore ignore differences in tastes. Thus, a point along the \( r_s - p_s \) locus I south-east of \( C^* \) can be identified as a home autarky equilibrium in which home endowments of the specific factor used in the service sector are ample compared with its endowment of labour and all other specific factors. There is a gain in allowing trade in services. Such a gain is the same whether trade takes place at the factor or the product level, as the home country inevitably ends up at \( C^* \); no additional gains accrue to opening up completely free trade at both the factor and product level.

In case (ii), the home country has a comparative technological superiority in producing the service product. Free trade at both levels will eventually bring about complete specialization at home in the service sector, since the service sector at home can afford to pay a higher wage than does the manufacturing sector if it can sell at \( p_s^* \) and pay only \( r_s^* \) for the service factor. As a consequence, the specific factor in manufacturing seeks employment abroad, and once the manufacturing sector collapses, the rise in the local wage rate shifts the \( r_s - p_s \) locus II in Fig. 3 upwards until it passes through point \( C^* \).

If, instead, the home country’s technological comparative advantage resides in the manufacturing sector (case (iii))—implying that the country’s \( r_s - p_s \) locus is III in Fig. 3—completely free trade causes the local service sector to be wiped out. The country’s specific factor associated with services would find employment abroad, and the home country’s nominal wage rate would remain unaltered.

As we indicated in the preceding section, in the case of ‘extreme’ endowments the ordering in which services are opened up to trade has an important implication for the output level of the service sector. For example, case (ii) in which the home country possesses a technological comparative advantage in services none the less indicates that service output falls if an extreme relative scarcity of the local service-specific factor leads to initial point \( J \) in Fig. 3 and the output market alone is opened to trade. If this is only the first step to freeing up the service sector at both product and factor levels, the service sector ultimately expands with completely free trade even beyond the initial autarky position. By reversing the order in which markets are freed, to correspond with opening trade first at the level that yields the greater gain, such non-monotonicity in the output adjustment of the service sector is avoided.
6. Internal income distribution

Although gains can be obtained for the country as a whole from either option (or completely free trade), the distribution of these gains across factors will not be identical for either option. Consequently, different income groups in the economy may not be expected to have the same preference for the two alternative trade options, except in the case where technologies are identical.

Referring again to Fig. 3, and the case where technologies are identical \((r_s - p_s)\) locus I), if the economy is initially at a point south-east of \(C^*\), the only gainer from either trade option would be the specific factor used locally in services; its return would rise to \(r^*_s\), a magnified reflection of the increase in the price to \(p^*_s\). By contrast labour and the other specific factors lose in real terms; their nominal returns are already determined on world markets and are unaffected by the opening up of the service sector to trade, while the rise in the price of the service product erodes their purchasing power. These consequences for real wages and real returns to other factors are completely reversed if the home country has a relative scarcity in its endowment of the specific factor used in services. From an autarky point north-west of \(C^*\), the move to trade in services lowers \(r_s/p_s\), while raising the real return to labour and all other factors since the price of the service product falls.

Some of these results are mirrored in the cases in which the home country’s service sector is technologically superior (case (ii)) or inferior (case (iii)), as long as endowment differences are more pronounced than are technological differences. By this is meant the scenario of ‘extreme endowments’ discussed in Section 4, leading to autarky equilibria in which, as in case (i), a relative abundance in the endowment of the specific factor employed in services ensures a cheap autarky \(p_s\) and return \(r_s\) (compared with world \(C^*\)), or a relative scarcity of the service specific factor is matched by higher autarky values for both \(p_s\) and \(r_s\). Alternatively phrased, technological disparities between the home country and the world market open up a spread between the world price of the service product, \(p^*_s\), and the cost of producing the service product at home if producers were faced with the world rate of return to the specific factor used in services. The cases in which endowment differences are more pronounced (or ‘extreme’ in the language of Section 4) are those in which autarky \(p_s\) lies outside the range \([p^*_s, p^*_s]\) in case (ii) or \([p^*_s, p^*_s]\) in case (iii). If so, real wages and the real return to all specific factors are harmed by either trading option if the service-specific factor is abundant (i.e. autarky lies south-east of \(B\) in case (ii) or \(H\) in case (iii)), while just the opposite holds if the service-specific factor is especially scarce (leading to autarky points north-west of \(E\) or \(A\)). In the former case either trading option raises the price of the service product, thus harming all real returns except that to the service factor. In the latter case the price of the service product falls, benefiting all income recipients whose nominal returns are fixed by world market forces.

A general theme, which holds regardless of the ranking of comparative advantage in these cases in which factor endowment differences outweigh
technological differences, is that the relatively abundant factor gains as the national income rises, no matter which trading option is chosen, and gains more if the option selected raises national income by more. For example, labour (together as a group with all specific factors other than those used in services) can be deemed abundant at home if autarky is at points on the \( r_s - p_s \) loci II or III north-west of \( C^* \). Along curve II, the home country gains more by opening up to trade in the service factor (to B) than to trade in the service product (to E); in matching fashion the rise in real wages from a point on locus II north-west of \( C^* \) to B exceeds that from the same point to E. If the home country’s technological comparative advantage lies in manufacturing instead, the real wage gain (and the gain in national income) from a point on curve III north-west of \( C^* \) to H exceeds that from the same point to A, even though it is now trade in the service product that is deemed superior to mobility of the service-specific factor. In the latter event the price of the service product locally (at A) would still exceed world levels (at \( C^* \)). The benchmark case (i) has proved useful in revealing that the choice of trading option becomes an interesting issue only if technologies differ at home and abroad. In the benchmark case either option leads to the same effect on overall income as well as on its distribution among factor claimants.

Autarky positions not exhibiting strong endowment differences — those lying in stretch EB in case (ii) or AH in case (iii) — do not lead to labour’s uniform endorsement of both trading options, on the one hand, or rejection of both options, on the other. From initial point F, labour benefits by opening up trade in the service factor (to B), since this lowers its cost of living, but would oppose free trade in just the service product (to move to E). A similar ambiguity, with the ranking of trade options reversed, characterizes labour’s attitude if autarky is at point G with the home country possessing a comparative advantage in the manufacturing sector. Although the direction of redistribution of income is affected by the trading option selected, the national income once again is raised in either case, regardless of the ranking in comparative advantage.

Opening up the service sector to some degree of trade has, we have argued, a beneficial effect on the national income but always entails losses for some group. There is an instance, however, where all groups gain. Suppose the home country’s comparative advantage does not lie in services (case (iii)) and that international mobility of the service factor has been allowed while retaining a local market in the service product — leading to A as the opening position. A move to completely free trade (to \( C^* \)) would in this case be of benefit to all productive factors. The home service sector would be wiped out, but no nominal returns to factors would be disturbed, so that the drop in the price of the service product benefits all participants in real terms. It is perhaps ironic that this case — calling for world competition that destroys the local service sector— could be supported by all residents.\(^{16} \)

\(^{16}\) The specific factor used in the local service sector earns world \( r_s^p \) at A. The further move to completely free trade implies that this factor seeks comparable employment abroad, and gains via the lower price on consumption of the service product.
7. Conclusions

This paper has focused on one particular issue in service trade, namely, the effects on economic welfare and income distribution of following two alternative options for trade: trade at the product level or trade at the factor level. Our first result is that, in the context of our simple competitive model, opening up trade in either the service factor or the service product will improve economic welfare, unambiguously. This result is independent of the country’s relative factor endowments and whether or not it has a technological comparative advantage or disadvantage in services.

Our second result points out that the extent of the welfare gain will depend on which trading option is selected, if technologies differ at home and abroad. Loosely phrased, trade at the level in which the market prices are characterized by the wider spread in autarky will generally yield the larger welfare gains. However, following one of the trade options may widen the divergence between home and foreign prices in the market which remains local.

Our third result relates to the process of gradually opening up the service sector to trade, i.e. first to allowing trade at one level, then subsequently at both levels (completely free trade). In this case, when technologies differ across countries, relative factor endowments do not influence trading patterns; technological superiority in services will lead to complete specialization in production of services, while technological inferiority in services results in complete specialization in manufacturing production.

Our final result is that while following either option for opening up trade results in welfare gains, the rewards are not distributed equally across factors, and the extent of differences in relative rewards depends on the trade option chosen. Furthermore, the option which results in the larger welfare gain will involve the greater disparity in changes in relative factor rewards.

Two general implications for policy can be drawn from our analysis. For a government considering opening up trade at one level, simple comparisons of domestic and world prices for the service product and factor in autarky may not be sufficient to indicate which policy option should be taken. To interpret the significance of this autarky price comparison, it is necessary to establish whether or not the country has a technological comparative advantage or disadvantage in services. This is, in fact, the policy problem embedded in our banking example described at the outset of this paper; in autarky the home country had a higher price of both the banking service product and the banking service factor.

The second implication arises from the fact that there are significantly different gains and losses to factors when trade opens up at either level. These income-distribution effects are largest when the option involving maximum welfare gains is chosen. Thus, depending on their distribution objectives, governments may face an equity and efficiency trade-off in its choice of trade option. A related policy implication is that, if the country eventually aspires to trade at both levels, income distribution effects perhaps should be allowed to influence
the choice of initial option for trade. In the extreme endowments case, the option involving greatest welfare gains involves overshooting of the factor rewards of either the service factor or of labour and the non-service factors, compared with the final completely free-trade equilibrium. The higher initial welfare gains from pursuing this option must be viewed in the context of any adjustment costs associated with this disruption. A strategy of opening up the market in which domestic autarkic prices are closest to world prices initially, although involving a smaller initial welfare gain and the wrong output response, might, depending on income distribution effects and adjustment costs, be a preferable initial option.

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REFERENCES


