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ECONOMIC EFFECTS OF GOVERNMENT AIDS - A SURVEY

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TIIVISTELMÄ

Economic Effects of Government Aids - A Survey

Tämä paperi on tehty Suomen Pankin rahoittaman EFTA-harjoittelun aikana ja ilmestynyt ensimmäisen kerran EFTA Occasional Papers -sarjassa (No 10) 4.3.1985. EFTAn työohjelmaan kuuluu selvitys valtion antaman teollisuuden tuen ('Government aids') vaikutuksista talouteen ja kauppaan sekä siitä, miten eri jäsenmaissa vallitseva käytäntö on sopusoinnussa EFTA-konvention kanssa. Tehtävänäni oli laatia aiheesta teoreettinen katsaus, joka on pohjamateriaalia käytännön työn tekevälle EFTAn talouskomitean alaiselle työryhmälle.

Käsillä olevassa selvityksessä pyritään ensin löytämään teoreettiseen käsittelyyn sopiva määritelmä tutkittavalle ilmiölle, joka käytännössä on hyvin monimuotoinen. Valtionavut määritellään selektiivisiksi toimenpiteiksi, jotka muuttavat suhteellisia hintoja joko hyödyke- tai tuotannontekijämarkkinoilla.

Teoreettisena kehikkona selvityksessä ovat erilaiset ulkomaankauppamallit (yksinkertaisimmassa tapauksessa Heckscher - Ohlin - Samuelson-malli), jotka tarkastelevat tuotannon ja kansainvälisen vaihdannan edellytyksiä. Valtion tukitoimien vaikutuksia arvioidaan näillä malleilla erilaisissa kilpailuoloissa.

Tärkeimmät tulokset voidaan esittää seuraavasti: Ns. täydellisen kilpailun oloissa valtion tukitoimet aiheuttavat hyvinvointitappioita koko talouden tasolla, mutta koska HOS-mallissa tarkasteltava maa oletetaan 'pieneksi', se ei kykene haittaamaan kauppakumppaneita tukitoimillaan. Jos tukitoimia harjoittava maa on 'suuri', eli sillä on markkinavoimaa, vaikutukset leviävät myös muihin maihin, joissa koetaan hyvinvointitappioita.

Dynaamisemmassa ja oletuksiltaan realistisemmassa analyysissa pystytään teoreettisesti osoittamaan tukitoimien lyhyen aikavälin kotimaiset hyödyt, jotka saadaan kauppakumppanien kustannuksella. Jos kauppakumppanien vastatoimet otetaan huomioon, hyödyt tulevat kiistanalaisiksi. Lisäksi maailmantalouden tasolla vapaa kauppa on hyvinvoinnin kannalta optimaalista. Jos tarkastelussa erotellaan lyhyt ja pitkä aikaväli, voidaan osoittaa, että pitkällä aikavälillä talous kärsii tukipolitiikan aiheuttamista tehokkuustappioista ja että työllisyys- ja kasvutavoitteissa päästään parempaan, kun markkinavoimat johtavat resurssien kohdentumista.

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OCCASIONAL PAPER No.10

TRADE EFFECTS OF GOVERNMENT AIDS

BY

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TRADE EFFECTS OF GOVERNMENT AIDS

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I INTRODUCTION AND SUMMARY

1. This paper represents a review of the theoretical basis relating to the in-depth study of the economic effects of government aids called for by the Economic Committee of EFTA at its 41st Meeting at the end of October 1984. The study was considered necessary in view of the increased use of government aids in recent years, to some extent resulting from the difficult adjustment problems experienced by the industrialized countries since the mid-1970s.

2. This study surveys some theoretical approaches which try to analyse government aids, defined as relative price distortions (see Table 1 on page 4). Naturally, conditions in the real world must be simplified so that they can be handled within the framework of a model, but it is believed that results can be helpful for a study of the effects of subsidies.

3. The basic result of trade theory is that free trade is always welfare optimal for the entire world. The results of the study confirm that for a small open economy working under the assumption of perfect competition, government aid policies can only bring about a deterioration in welfare. Even if the subsidized producers gain, the other producers and consumers lose, and thus the total welfare of the country is always reduced. An "atomistic" small country in world markets cannot harm its trading partners with its trade policies. The effects of government aids on some variables are summarized in Tables 2 and 3 on pages 10 and 17, respectively.

4. According to the principles of welfare economics, if the competitive conditions in the home country are distorted by some domestic disturbance it is justified and considered the best policy that this distortion should be corrected at its source by means of government intervention and thus competitive equilibrium is restored. If a domestic distortion is corrected using trade policy measures, then new "by-product distortions" are caused and national welfare reduced[1].

5. Starting from competitive equilibrium the various government aids can be ranked according to the number of relative price distortions they induce. Least harmful are factor subsidies - to capital or labour - since they

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[1] The basic text book in this field is Corden (1974), "Trade Policy and Economic Welfare".

distort only relative factor prices. Next would be production subsidies with a distorting impact on relative producer and factor prices. Third would be export subsidies and import tariffs which, in addition to the above, distort also consumer prices. See Figure 6 on page 19.

6. When assuming the existence of imperfections on goods markets, where a country has the power to influence world prices, it is possible for that country to affect the terms of trade and to achieve national gains through government aid policies. But these gains are made at the cost of trading partners and world welfare is reduced since free world trade is optimal only when it is completely free. The results of this case are summarized in Table 4 on page 22.

7. Models incorporating several imperfections on both commodity and factor markets can usually better describe conditions as they exist in the real world. Some of these models have dynamic properties which allow for the separation of short and long-term effects. The counter-measures of trading partners can also be taken into account. The models with factor market rigidities are useful in analysing the difficulties arising from the present structural adjustment problems in Western industrialized countries. It can then be shown in some cases - but not in all - that short-term national gains are possible, but that in the longer run government aid policies are self-defeating and lead to growth and welfare losses at both the national and the global level. The summary table of results is presented in the concluding remarks on page 36.

8. The analysis in this study is divided into three main chapters. Following the introduction and summary, in Chapter II government aids are defined as measures affecting relative prices, appearing either on the expenditure side of the government budget or as forgone government income. The various aids are limited to a restricted number of basic cases which are treated in a theoretical context and their effects studied.

9. In the first part of Chapter III the Heckscher-Ohlin-Samuelson trade model is employed to trace the production, consumption, trade and resource allocation effects of the main categories of government aids. The effects of factor subsidies, production subsidies to exportable and importable goods and of export subsidies are studied using this model. In the second part of the same Chapter the assumption of perfect competition is dropped and a variant of the above model is used where the home country has monopoly power on the world market. Later more advanced models with imperfect commodity or factor markets are studied.

10. Chapter IV contains a discussion of situations in which the government decides to introduce an aid measure.

There the study aims at determining why aids are used so frequently and so often instead of macro-economic policies.

II THE DEFINITION OF GOVERNMENT AIDS

11. The main emphasis of the study is on government aids to tradeable goods' production, factors of production and trade. Government aids can be defined as measures affecting the relative prices on commodity markets or between the factors of production. Pragmatically, we can define government aids as items on the expenditure side of the government budget and/or as forgone government income. Government aid policies often have the characteristics of selectivity or discrimination between producers. They belong to the tools of industrial, employment or structural policies and are clearly distinct from general macro-economic policies.

12. The concept of government aids can, for example, be classified according to the different ways in which such aids are granted. Thus they can be direct subsidies from the government budget, public loan and guarantee agreements, subsidies allowing the government to run public companies at a deficit or to price public goods and services below cost. The government can also grant exemptions from public taxes and charges[2].

13. The structure and impact of specific government aids will reflect the institutional framework of the country concerned, so that it may b e difficult to compare such aids. It is, however, justifiable to distinguish between general and specific subsidies. General subsidies are those that are administered on the basis of detailed rules of procedure where all that satisfy these rules can benefit from these subsidies. Specific subsidies are given to particular firms, sectors or industries for particular purposes[3] and are often very much made to order.

14. A general subsidy programme may include export aids and export promotion, R & D subsidies, employment and investment assistance, as well as small-firm support and regional programmes. Specific subsidies can include rescue operations for specific firms and sectoral subsidies[4].

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2 NOU 1984:21A, "Statlig naeringstötte i distriktente"

3 Field, Hills: "The administration of industrial subsidies" in "The Economics of Industrial Subsidies", London 1975

4 See classifications for example in: Carlsson (1984): "Industrial Subsidies in Nordic Countires" in "Economic Growth in Nordic Perspective", Helsinki 1984, Carlsson (1982): "Industrial Subsidies in Sweden, Macro-economic Effects and International Comparison", IUI Working Paper 58, Stockholm 1982 and OECD: "Industrial Adjustment and Government Support", IND (83)5, Paris 1983.

GOVERNMENT AIDS DEFINED AS RELATIVE PRICE DISTORTIONS

Table 1

	Relative price distortion	Definition in "welfare economics"
Factor subsidies	P_l/P_k	going away from the most efficient production possibility frontier
Production subsidies	P_q/P_q^*	DRT ≠ FRT
to an importable to an exportable	$P_q ex/P_q im$	
Export subsidies	P_q/P_q^* P_c/P_c^*	DRT ≠ FRT DRS ≠ FRT FRT = WP

* = foreign

$P_{l,k,q,c}$ = prices of labour, capital, production, consumption
DRT = domestic rate of transformation
DRS = domestic rate of substitution
FRT = foreign rate of transformation
WP = world prices

15. In fact, the borderline between general and specific subsidies is rather hazy and in all cases firms are treated selectively. In fact, the part which constitutes the actual subsidy element in each case is not easily determined.

16. To fit trade and production theory a distinction should be made between government aids according to where they produce the initial relative price shift: between factors of production (factor subsidies) or between products (production or trade subsidies). In the latter case, if the aids are related to production, regardless of whether the product is sold on the home market or abroad, they are called "production subsidies". If the aids are related to exports of a product they are called "export subsidies"[5] (see Table 1). It is important to make a distinction between production subsidies to exportables and to import-competing goods because their effects are different. To be precise, we can define factor subsidies as

5 Malmgren: "International Order of Public Subsidies", Thames Essays No. 11, London 1977

those that are determined according to the volume or value of the factors employed, production subsidies according to the volume or value of the output produced and export subsidies according to the volume or value of specific exports.

III STUDY OF THE EFFECTS OF GOVERNMENT AIDS

17. This analysis is based on foreign trade models and to begin with on the 2-country 2-factor 2-product Heckscher-Ohlin-Samuelson (HOS) model. Later the models are changed for situations with distortions in either the goods or the factor markets. The analysis with the HOS model is an exercise in comparative statics and adjustments take place instantly. Further on dynamic models are also reviewed and in these short-term and long-term effects can be separated.

A. The effects in a perfectly competitive world

1. Heckscher-Ohlin-Samuelson model

18. In the basic HOS model two countries and two commodities are assumed, as well as two factors of production, labour and capital which are combined in the production process on the basis of production functions with constant returns to scale. Production functions are similar in the two countries, but differ between commodities.

19. Factors are perfectly mobile within the countries but immobile between them. This makes factor prices the same in both industries in one country. A difference in the relative availability of the two factors is the only difference between the two economies and this is reflected in different relative prices between labour and capital in the countries. It is also assumed that competitive conditions prevail in all product and factor markets. Transport costs, etc. are not taken into account. Demand conditions, i.e. consumer preferences, are the same in both countries[6].

20. The core propositions of the HOS model are that the different factor endowments are a sufficient condition for achieving gains from trade in the 2-country world. Each country will specialize in the production and export of the product which uses the relatively abundant, cheaper factor more intensively. In this situation it can be shown that free trade equalizes internationally the factor prices. In

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6 See for example: Lancaster: "Heckscher-Ohlin Trade Model", Economica 93, Feb. 1957.

other words, the product prices determine the factor prices, given the same production functions in both countries[7].

21. There are two theorems in the context of the HOS model concerning product and factor prices[8]. First, an increase in the relative price of the product raises the return to the factor used intensively in its production by a greater relative amount (Stolper-Samuelson theorem). It is easy to show that when there is an increase in the price of a labour-intensive commodity, in relative terms wages increase and rentals fall[9]. Secondly, an increase in the endowment of one factor of production, with product prices fixed, will increase more than proportionately the output using that factor intensively and reduce the output of the other product (Rubczynski theorem).

22. In the above framework, government intervention is understood as changing relative prices either in factor or product markets. The effects of such interventions on trade, production, consumption, income and, more broadly speaking, on welfare are easy to derive from the model. The home country introducing government aids is in the perfectly competitive model assumed to be "atomistic", so that the world market prices are given. Moreover, it cannot affect world markets through changes in its trade regime. The subsidies are assumed to be financed in some non-distorting way.

23. In our analysis of the economic effects of government aids, the starting point is the free trade equilibrium. It can be shown[10] that the free trade equilibrium in the HOS model is also welfare optimal in the Pareto sense, so that nobody can be made better off without somebody being made worse off. In free trade equilibrium, both the factor and product markets are cleared and the factors are employed in an optimal way. In the analysis the only aspects of income distribution considered are, at the functional level, income shifts between labour and capital.

24. If in the context of the assumptions an intervention is introduced, in the new equilibrium the total welfare as

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7 Caves, Jones; "World Trade and Payments", Boston 1974

8 See for example Jones, Neary: "Positive Theory of International Trade" in "Handbook of International Economics" vol.1, Amsterdam 1984.

9 See for example, Caves, Jones, op.cit.

10 See for example: Bhagwati, Srinivasan: "Lectures on International Trade", Cambridge (Ma), 1983.

defined above is always reduced. The interventions are compared according to their distorting effects, i.e. according to the number of relative price distortions the government aids induce.

25. Below, three basic types of government aids or "subsidies" are discussed: factor subsidies, production subsidies and export subsidies. A number of notional definitions are made. Thus each country (A) produces an exportable good (X) and an importable good (M) with capital (K) and labour (L) as inputs. Which product is labour intensive and which is capital intensive respectively is set out separately in each case. We recall the assumption that A is a small country trading at world market prices and that the increase of its exports is always absorbed.

2. Subsidies to factors of production

26. We start with the analysis of factor subsidies and recall that in the model used factor supply is fixed for the economy as a whole, but there is mobility between sectors. Product prices are given. Subsidies can be granted to either labour or capital in production of either a labour or capital intensive commodity. In the 2x2x2-world some of the cases are analogous, which reduces the number of possible combinations.

27. The implications of factor subsidies are in our case the changes in factor returns and proportions used in production and thus changes in the wage/rental and capital/labour ratios of the economy. Starting from free trade equilibrium, the intervention on the factor markets brings about an inferior resource allocation and the total production of the country is decreased. In terms of the transformation schedule, this means in most cases that the economy is working on a lower than optimal curve. The world price line is no longer tangent to the transformation curve, since factor returns are affected. Accordingly, the consumption possibilities are reduced as well as the foreign trade (Figure 1). The increase of employment in one sector is possible only through reduction of employment in the other.

28. In the following, Neary (1978)[11] is referred to when the effects of a capital subsidy are studied. The capital subsidy to the labour-intensive sector decreases the costs of capital in relation to wages in that sector (the effective wage/rental ratio increases). This is

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11 Neary (1978): "Capital Subsidies and Employment in An Open Economy", Oxford Economic Papers, Vol. 30/3, November 1978

strengthened due to the fact that the effect of the subsidy on unit cost is similar to the effect of a price increase of the product in question. The Stolper-Samuelson effect increases the return to labour and decreases rentals since labour is used more intensively in the subsidized sector. The wage/rental ratio increases also in the other sector, since in the new equilibrium both sectors pay the same price for each factor. Consequently, the capital-labour ratio increases in the subsidized sector and in the whole economy, since the subsidized sector will produce more and draw labour from the other sector. After the subsidy the economy is situated on less efficient transformation and contract curves (Figure 2). The effects of subsidies on factor usages are depicted in Edgeworth-Bowley production boxes in Figure 2.

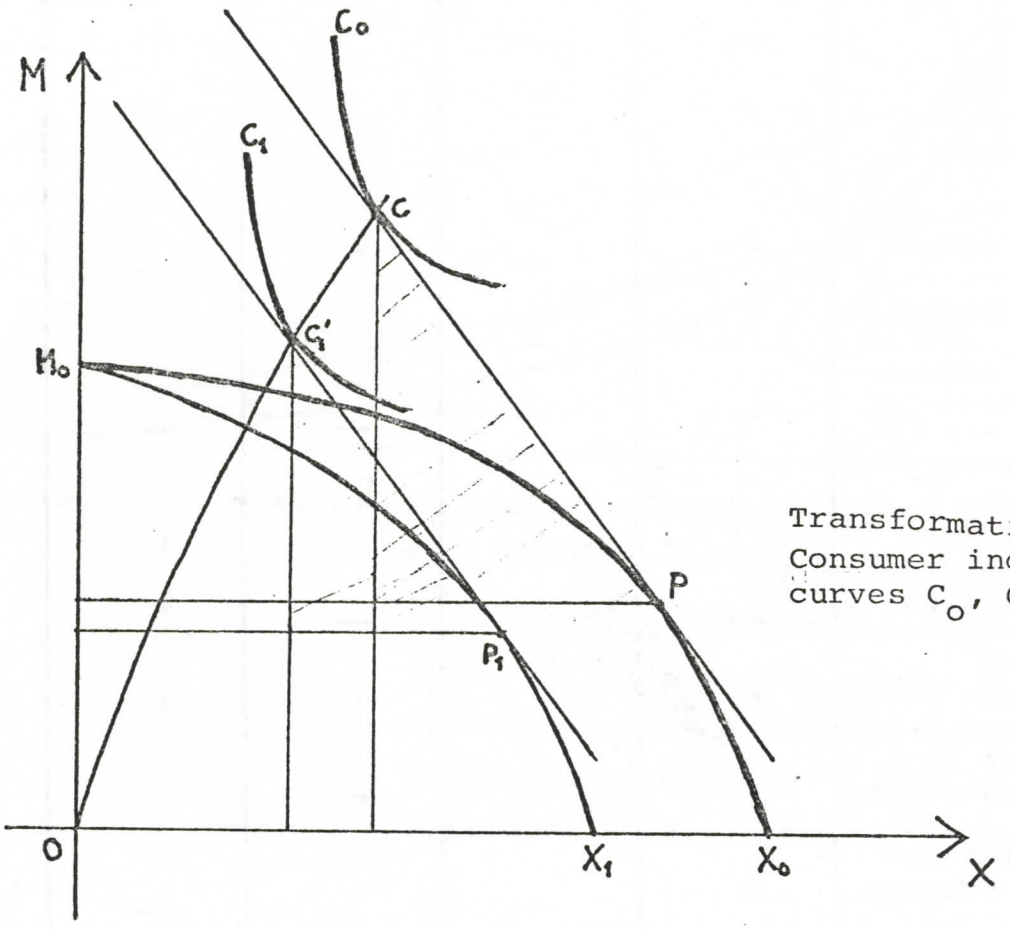
29. Neary concludes that sectoral employment targets can be reached with capital subsidies, which in fact in the real world are used for that purpose. It should be remembered that in the HOS model total employment is always fixed and sectoral employment gains are made at the cost of the other sector.

30. The other way of promoting employment in the labour-intensive sector would be a labour subsidy. It would initially decrease the wage/rental ratio in that sector, but Neary has shown (op.cit.) that the Stolper-Samuelson effect, which increases wages (and the wage/rental ratio) is larger than the subsidy effect. Thus to achieve an employment increase in the subsidized sector, the capital/labour ratio will increase not only in that sector, but also in the whole economy. Both labour and capital are used more in the subsidized sector since it expands and labour is drawn from the other sector; the economy is working less efficiently than without the subsidy.

31. Factor subsidies cause distortion in factor markets by changing the relative prices of capital and labour, but in the competitive small country HOS model there are no price distortions on the product markets, even though production and trade patterns change. A summary of the effects of factor subsidies in the HOS model is in Table 2.

EFFECT OF FACTOR SUBSIDIES

Figure 1



Transformation curve $X_o P M_o$
Consumer indifference curves C_o, C_1.

Free trade equilibrium with production at P and consumption at C.

Distorted transformation curve $X_1 P_1 M_o$, where production at P_1 and consumption at C_1.

Foreign trade is also decreased (shaded triangles)

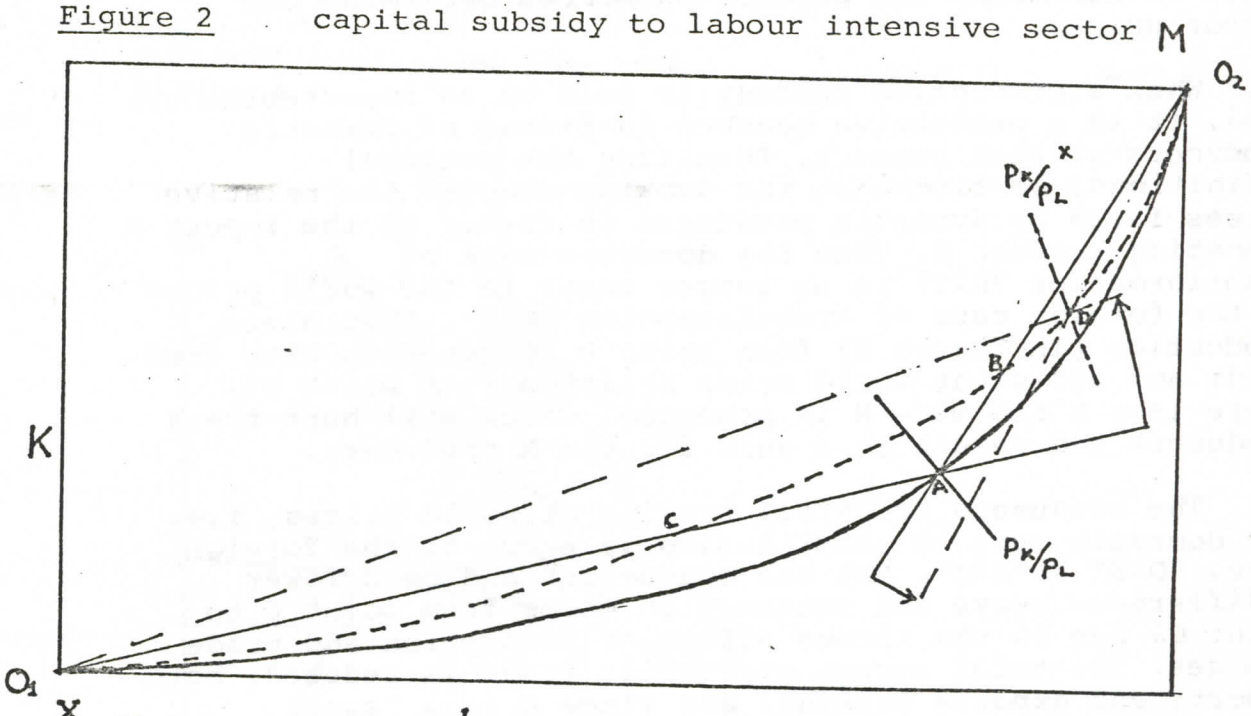
THE EFFECTS OF FACTOR SUBSIDIES IN HOS MODEL
(small country)

Table 2

Subsidy to	Labour		Capital	
Sector	labour intensive	capital intensive	labour intensive	capital intensive
Country A				
Relative wages:				
Subsidy effect (costs)	—	—	..	..
Stolper-Samuelsson effect	+	—	+	—
Overall effect	+	—	+	—
Relative rentals:				
Subsidy effect (costs)	..	..	—	—
Stolper-Samuelsson effect	—	+	—	+
Overall effect	—	+	—	+
Subsidized production	+	+	+	+
Employment in subsidized sector	+	+	+	+
Capital/labour ratio of economy	+	—	+	—
Efficiency	—	—	—	—
Welfare	—	—	—	—

FACTOR SUBSIDIES AND RESOURCE ALLOCATION

Figure 2 capital subsidy to labour intensive sector



Equilibrium contract curve O_1AO_2
equilibrium production point A

O_1A, O_2A, rays of constant factor shares
P_k/P_1 relative factor prices
O_1CBDO_2 distorted contract curve
New equilibrium at D
P_k/P_1^* new relative factor prices

3. Production subsidy on an importable good

32. In this section we discuss government aids paid to production. Here government aids change the relative prices of products on the transformation curve or on the consumer indifference curve[12]. In addition to affecting product markets production subsidies also distort factor markets, since in our model the production prices determine the factor prices.

33. When a production subsidy is paid on an importable good, it is a protective measure in favour of domestic producers of that product. Recalling the notional definitions, we find that the subsidy changes the relative prices faced by domestic producers in favour of the import competing product M. Thus the domestic rate of transformation "DRT" is no longer equal to the world prices or the foreign rate of transformation "FRT". That moves production (in Figure 3) from point P (production with free trade and efficient world price relations) to point P1, where less X and more M is produced, which will hurt the X producers and result in a gain for the M producers.

34. The consumers are still trading at world prices, i.e. the domestic rate of substitution is equal to the foreign rate, "DRS" = "FRT". But the consumers land on a lower indifference curve and consumption moves from point C to point C1 due to the income effect of production and trade changes. The total amount of foreign trade is reduced, both imports and exports falling, but since A is a "small country" this has no effect on world trade prices.

35. If M is assumed to be labour intensive, as is often the case in the real world, the subsidy will more than proportionally increase wages in relation to rentals in the production of M (Stolper-Samuelson). More resources will be shifted to M-production at the expense of X-production. Since the wage/rental ratio is increased in the subsidized sector as well as in the total economy, the capital/labour ratio for the economy will increase. The resource allocation is thus made less efficient, since the free trade equilibrium is the optimum.

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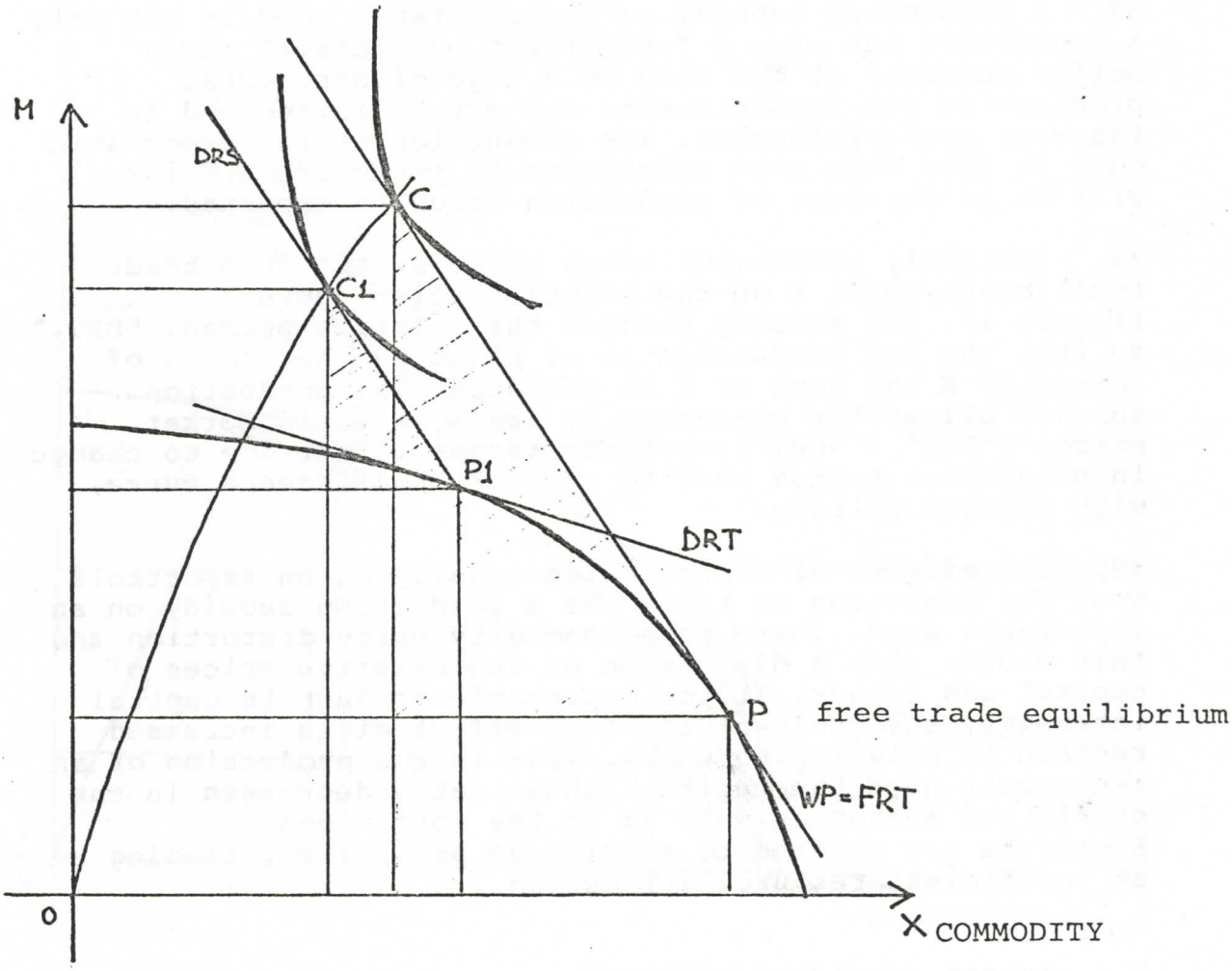
12 The following diagrammatic analysis owes much to Corden (1957): "Tariffs, Subsidies and Terms of Trade", Economica 95, August 1957. Corden (1971): "The Theory of Protection", Oxford 1971, Corden (1974): "Trade Policy and Economic Welfare", Oxford 1974. Caves, Jones: "World Trade and Payments, Boston 1973, Bhagwati, Srinivasan: "Lectures on International Trade", Cambridge (Ma), 1983, Greenaway: "International Trade Policy - From Tariffs to the New Protectionism," London 1983.

PRODUCTION SUBSIDY ON AN IMPORTABLE GOOD

Figure 3



The subsidy moves production from point P to P_1 and consequently DRT ≠ FRT

Consumers are trading at world prices, DRS = FRT but they end to a lower level of satisfaction since the production of X and imports of M are decreased

36. In the subsidy situation, producers take decisions according to distorted product price information. Factor prices are also distorted. The consumers, on the contrary, continue to face free trade commodity prices. Compared with factor subsidies, production subsidies cause more distortion, not only on factor markets and on efficiency but also on product markets.

4. Production subsidy on an exportable good

37. A production subsidy on an exportable good is not only a protective but also a "promotive" or "active" trade policy measure. It can also be a sign of structural problems in the export sector and may be introduced to increase competitiveness. The production of the exportable good is thus made more attractive to producers and there will be an increase of production which is exported.

38. Initially production takes place at the free trade equilibrium point P on the transformation curve (Figure 4). The subsidy changes the relative prices, "DRT," so that the new production is at point P1 where more of commodity X and less of M is produced. The production subsidy allows the consumers to trade at world market prices ("DRS" = "FRT"), but the income effect due to change in production brings them to a lower indifference curve, with reduced welfare.

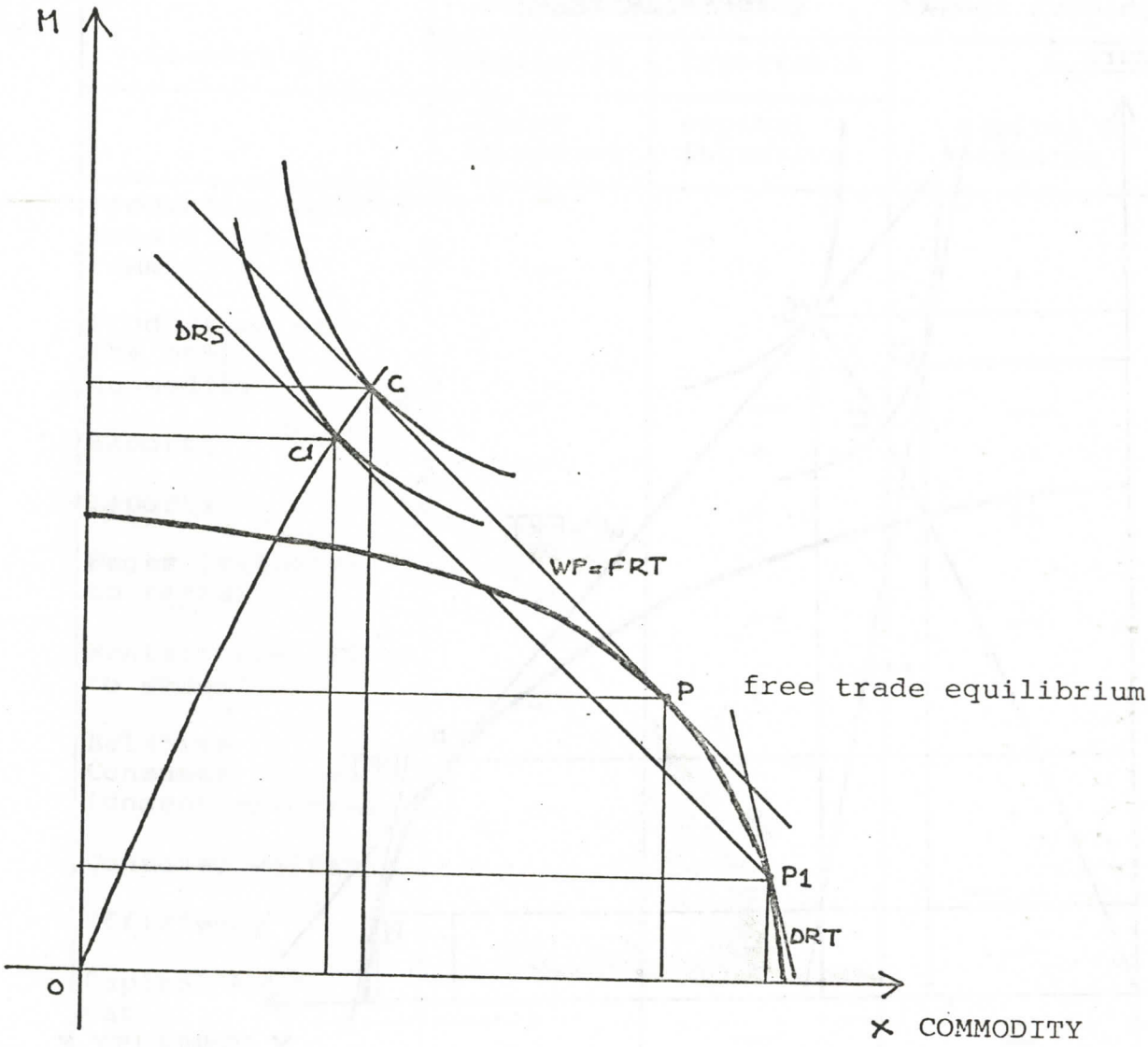
39. The effects of a production subsidy on an exportable good are analogous to those for a production subsidy on an importable good. There is a commodity price distortion and this causes also a distortion of the relative prices of capital and labour. If the exportable product is capital intensive, the Stolper-Samuelson effect gives increased rentals in relation to wages. Thus in the production of an exportable good the capital/labour ratio decreases in the subsidized sector as well as in the total economy. Resources are shifted to subsidized production, leading to an inefficient resource allocation.

5. Export subsidy

40. An export subsidy differs from a production subsidy on the exportable good since the benefit is paid on exports only. The consequence is that all the production of X, the exportable commodity, would be exported. The small-country assumption would allow the world market to absorb the increased exports. But the domestic price of X will rise to the level of the world price plus subsidy. This is the basic difference between a production subsidy and an export subsidy (Figure 5).

PRODUCTION SUBSIDY ON AN EXPORTABLE GOOD

Figure 4

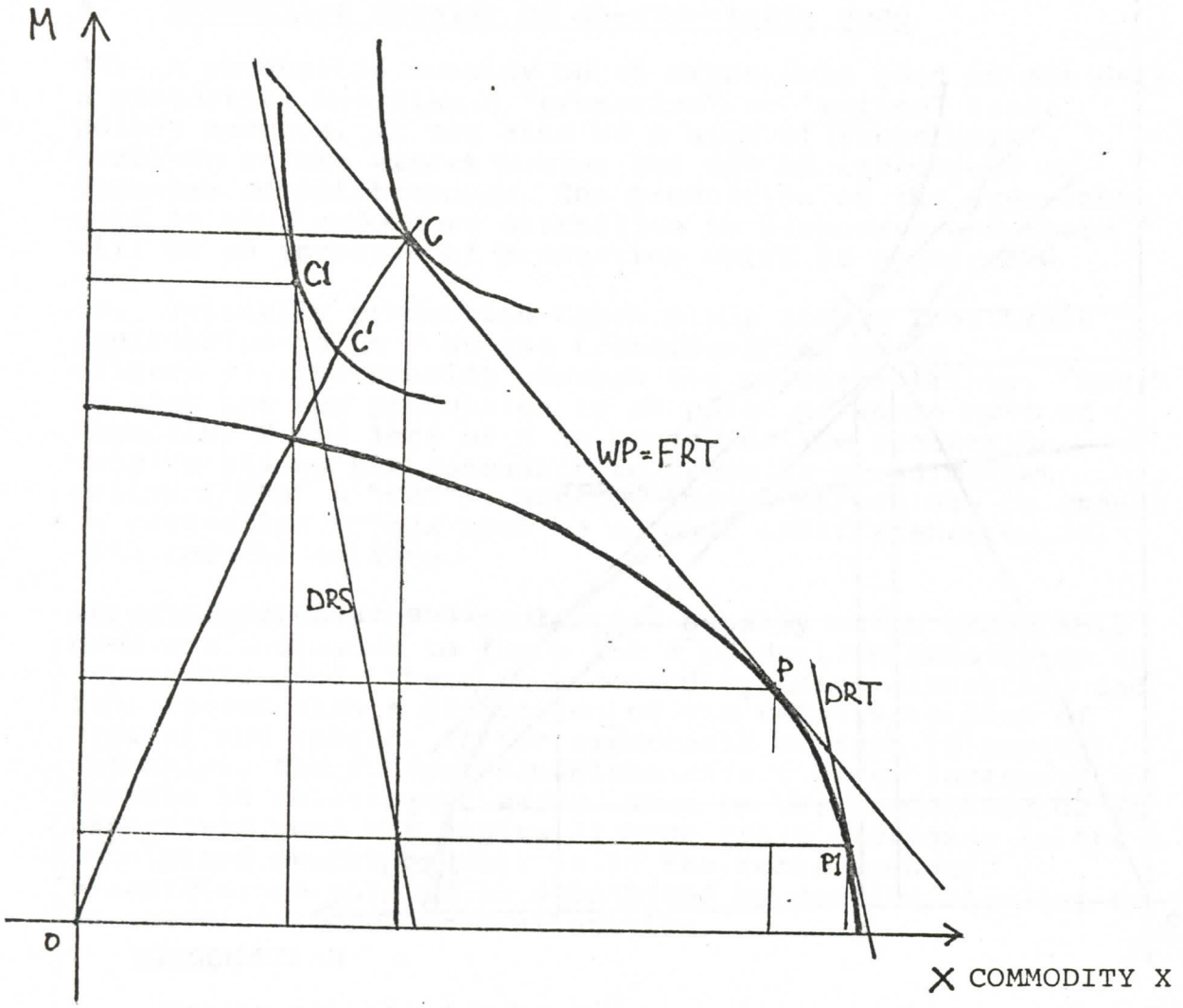


The subsidy moves production from point P to P_1 and consequently DRT ≠ FRT

The consumers are trading at world prices, DRS = FRT, but since the production of M is decreased, they are on a lower indifference curve.

EXPORT SUBSIDY

Figure 5



The subsidy moves production from point P to P_1 and consequently DRT ≠ FRT

The price relation for consumers is also changed.

DRS ≠ FRT

Due to the price increase of X, consumers substitute some of their X-consumption for M-consumption. Moreover they are on a lower indifference curve, since the production of M is decreased.

C ⟶ C' income effect

C' ⟶ C1 substitution effect

THE EFFECTS OF PRODUCTION AND EXPORT SUBSIDIES IN AN HOS MODEL (small country)

Table 3

Country A	Production Subsidy		Export subsidy
	Importable	Exportable	
	labour intensive	capital intensive	capital intensive
Production of subsidized commodity	+	+	+
Production of the other commodity	—	—	—
Exports	—	+	++
Imports	—	+	++
Wages (relative to rentals)	+	—	—
Rentals (relative to wages)	—	+	+
Relative Consumer prices (domestic/foreign)	o	o	+
Consumer welfare	—	—	— —
Efficiency	—	—	—
Capital/Labour ratio	+	—	—

41. As a result of the price increase of X consumers replace some of their expenditure on X with expenditure on M. Thus exports are increased even more than the subsidy alone had implied, since domestic consumption is reduced. The other effects of an export subsidy are similar to the effects of a production subsidy on an exportable good. With an export subsidy three relative price ratios are distorted: those facing producers, those facing consumers and the factor prices. The welfare loss to consumers is larger than in the production subsidy case. The summary of the effects of production and export subsidies in an HOS model is in Table 3.

6. The effects of some other trade policy measures

42. An export subsidy causes distortion on commodity markets for producers and for consumers, whereas a production subsidy causes only a distortion for producers. Furthermore, when commodity price relations are distorted, the relative prices of factors are also affected. On the import side, a tariff would be equivalent to an export subsidy. Production and consumption decisions would, however, reflect the distorted prices. On the factor markets the capital/labour ratio of the economy would change.

43. Quantitative restrictions of imports also prevent the correct allocative functioning of the price mechanism. A quantitative restriction will increase the price of an importable good and this will change prices and the patterns of production and consumption; it will also reduce efficiency and thus total income will be lower. Gains are made by the producers of importables.

44. The modern versions of quantitative restrictions, the voluntary export restraints (VERs) are identical to quotas in their effects, with the exception that the duty equivalent of the rise in prices of imports often becomes a rent to the foreign exporter. Moreover, VERs are more discriminatory than quotas, since they treat individual importers differently.

45. In the discussion above, the effects of the most common trade policy measures in the competitive HOS world are covered. To summarize the result, it is possible to rank the policies according to the number of distortions they create. In making such a ranking, the undistorted functioning of the price mechanism is preferred. Thus, the least harmful are factor subsidies, since they distort only factor prices. Next on the list would be production subsidies with two distortions and they would be preferable to export subsidies and tariffs with three distortions. The worst case is quotas and VERs, because they would also distort the price mechanism. In addition, the VERs would discriminate between import suppliers. (The geometric illustration of the above summary in Figure 6 owes much to Krauss[13]).

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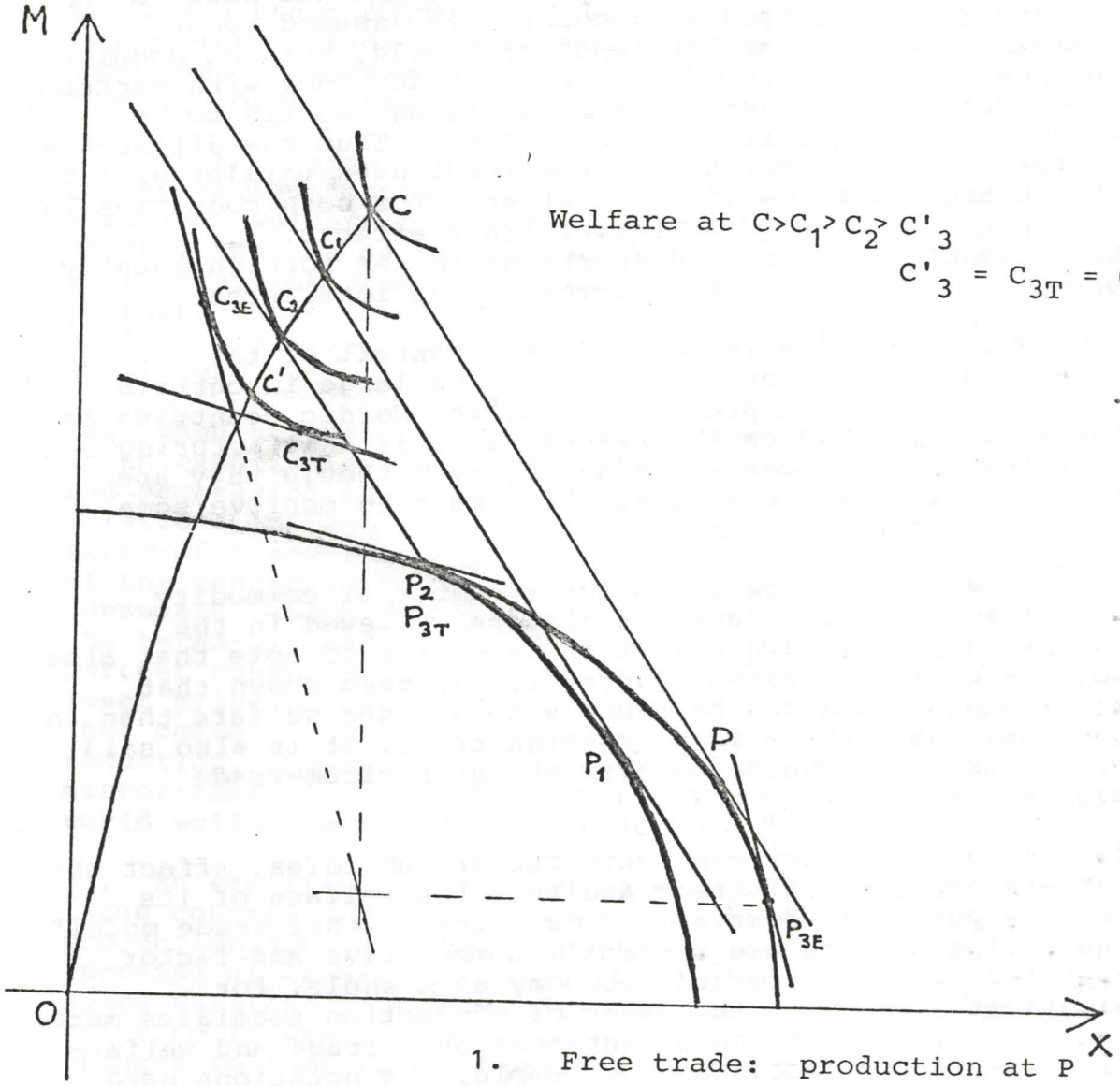
13 Krauss: "A Geometric Approach to International Trade", Oxford 1979

SUMMARY OF THE EFFECTS OF SOME TRADE POLICY MEASURES IN THE HOS MODEL

Figure 6



Welfare at $C > C_1 > C_2 > C'_3$

$C'_3 = C_{3T} = C_{3E}$

1. Free trade: production at P, consumption at C
2. Factor subsidy: production at P_1, consumption at C_1
3. Production subsidy (on an importable good): production at P_2, consumption at C_2

   Tariff: production at $P_{3T} = P_2$, consumption at C_{3T}
4. Export subsidy: production at P_{3E}, consumption at C_{3E}

B. The effects in the imperfect world

1. The subsidizing country is large

46. At this point, the assumptions of the HOS model are changed and the subsidizing country is assumed to be "large". The other assumptions still hold, but the model can now be called "the traditional trade model with market imperfections". Assuming the subsidizing country to be large implies that it has market power. Thus the difference in the results compared with the model used earlier will be that there are terms of trade effects for both countries in the model and some quantitative trade effects. Consequently, the trade distortions in the foreign country bring also production and factor market imbalances.

47. The discussion is valid in the context of the EFTA countries, since some of them are large in certain markets. A good example is that of the Nordic countries in the wood, pulp and paper markets. In most manufacturing branches EFTA producers are small, even though they are trying to fragment the markets in order to achieve some monopoly power.

48. In general there are a large number of commodity market imperfections and not all are reviewed in the following pages. However, it is important to note that also for the case of a large country it has been shown that trade equilibrium can be found with greater welfare than in the case where there is no foreign trade. It is also said that this is enough to confirm the gains-from-trade proposition[14].

49. A large country can, with factor subsidies, affect the pattern and terms of trade and thus the welfare of its trading partners. However, in our "traditional trade model" the factor markets are perfectly competitive and factor supplies are fixed for the economy as a whole. For simplicity, we treat the cases of production subsidies more thoroughly, with stress on international trade and welfare effects. In the analysis we re-employ the notations used above: home country A, foreign country B, exportable commodity X, importable commodity M.

50. The subsidy to an importable commodity M, in a large country A, affects world supply conditions, decreasing production of X and increasing supplies of M, and consequently country A has a terms-of-trade gain. This has a positive effect on incomes in the home country and consumers will be better off (Figure 7.1). However, the

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14 Bhagwati, Srinivasan, op.cit.

price and quantity shifts in the subsidizing country's imports will harm the exporters of the subsidized commodity in trading-partner countries. The decreased supplies of X raise the prices in buyer countries. Consequently, there are effects on the factors of production also in the trading-partner country. At the global level, the protective subsidy to the importable production in a large home country causes trade distortions and decreases world trade. Global welfare is also decreased.

51. In the large country case it is possible to introduce the so-called "optimal subsidy" or the tariff which maximizes welfare in the home country via terms of trade shifts. The net gains of trade policy measures are then at their greatest from the national point of view. To trading partners these "optimal" measures can be very harmful and world welfare is also reduced as a result of "optimal" subsidies.

52. When a large country introduces a production subsidy on an exportable commodity X, the increasing exports of X and decreasing supplies of M change the world price relations in such a way that the home country suffers a terms-of-trade loss. In the subsidizing country, the gain of the producers of X is accompanied by a loss for consumers, which comes from the efficiency loss and from the terms-of-trade loss (Figure 7.2). In the trading-partner countries, the consumers will benefit from the lower price of the import product there. The producers of that commodity there will suffer from the world price reduction. The subsidy on the exportable good is a mirror-case of the subsidy on the importable good; globally world welfare and trade are reduced.

53. An export subsidy would be even more harmful to a large country and distort world trade even more than a production subsidy on an exportable good, since the increase of exports is larger at a given subsidy level and since relative consumer prices are also affected. We can refer to Figure 5 in the competitive case, which now changes so that the new price line for consumers would be less steep than the original price line and thus closer to the origin. To draw this line special assumptions on world demand conditions would have to be made. World price distortions would be larger than with a production subsidy. There are gains for the consumers in the trading-partner country which are larger than the losses for foreign producers. In the home country the situation is the reverse, so that the foreign country receives a net gain.

54. In large-country cases world trade and welfare losses are clear from our model. Protection can bring about some sectoral gains but export support has greater negative

THE EFFECTS OF PRODUCTION AND EXPORT SUBSIDIES IN TRADITIONAL TRADE MODEL
(large country)

Table 4

Country A	Production Subsidy		Export subsidy
	Importable	Exportable	
	labour intensive	capital intensive	capital intensive
Production of subsidized commodity	+	+	+
Production of the other commodity	—	—	—
Exports	—	+	++
Imports	?	?	?
Terms of trade	+	—	— —
Wages (relative rentals)	+	—	—
Rentals (relative wages)	—	+	+
Relative consumer prices (importable/ exportable)	—	+	+
Consumer welfare	+	—	— —
Efficiency	—	—	—
Capital/labour ratio	+	—	—
Country B:	—	+	+
Consumer welfare	—	+	++
Producers of the subsidized commodity in country A	—	—	— —
World welfare	—	—	— —

effects on the home economy and the gains are exported to the trading partners. The efficiency losses in the home country should also not be forgotten since they decrease both producer and consumer income. The summary of the results for the large-country case is in Table 4.

2. Further imperfections on commodity markets

55. Until quite recently the tradition in international trade theory has been dominated by the assumption of perfectly competitive markets. Applications like the one above, the large-country case in the traditional trade model is, however, not particularly new. But, since the world is not perfect, the gap between trade and especially trade policy theories and practice has been wide.

56. In recent years several articles have been published where the effects of trade policy measures are studied with models where, in one way or another, imperfect markets are assumed. The comments which appear below are not intended to give an exhaustive summary but some recent theoretical papers are discussed. These also shed some light on the reason why protectionist policies have become more common since they reveal short-run gains arising from these policies in imperfect markets.

57. We can start the discussion with a multi-product model with two exportable and one importable product[15]. In the model complete markets and perfect competition are assumed, but "market linkages" in the form of-different substitutability and complementarity patterns for commodities at home and abroad and cross effects between markets determine the effects of trade policy. In the analysis the effects of export subsidies in the exporting country and VERs and countervailing duties as a retaliative measure in the importing country are discussed.

58. First, it is shown that an export subsidy benefits the exporting country when the subsidized export product is in fact a stronger substitute for a second export product in the home country, as compared with substitution between these products abroad. National benefits are, however, only possible at the expense of the importing country and free trade is optimal for the world. Secondly, it is shown that VERs and the countervailing duties benefit the importing country. This gives the rationale for existing GATT rules. Thus the paper does not give support to export subsidies, since it must not be overlooked that countermeasures are usually taken by the trading partners. The analysis of retaliation is further discussed below.

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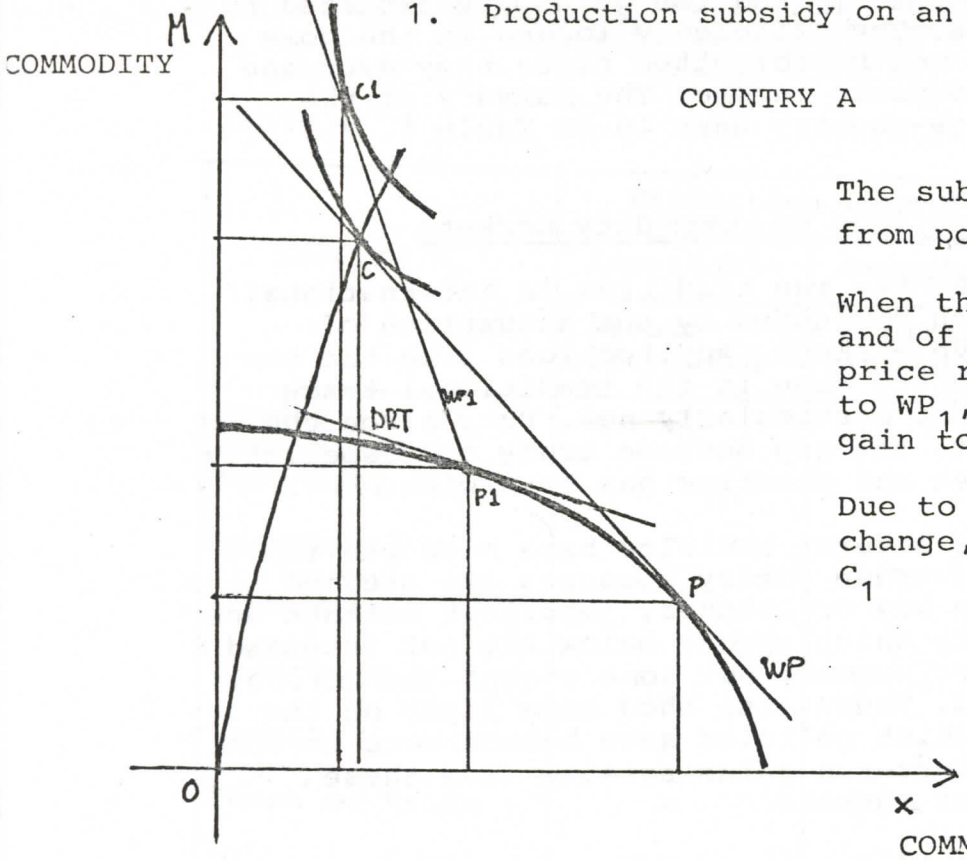
15 Feenstra: "The Role of Trade Policy under "Market Linkages", Columbia University, March 1984

PRODUCTION SUBSIDIES IN A LARGE COUNTRY

Figure 7

1. Production subsidy on an importable good



COUNTRY A

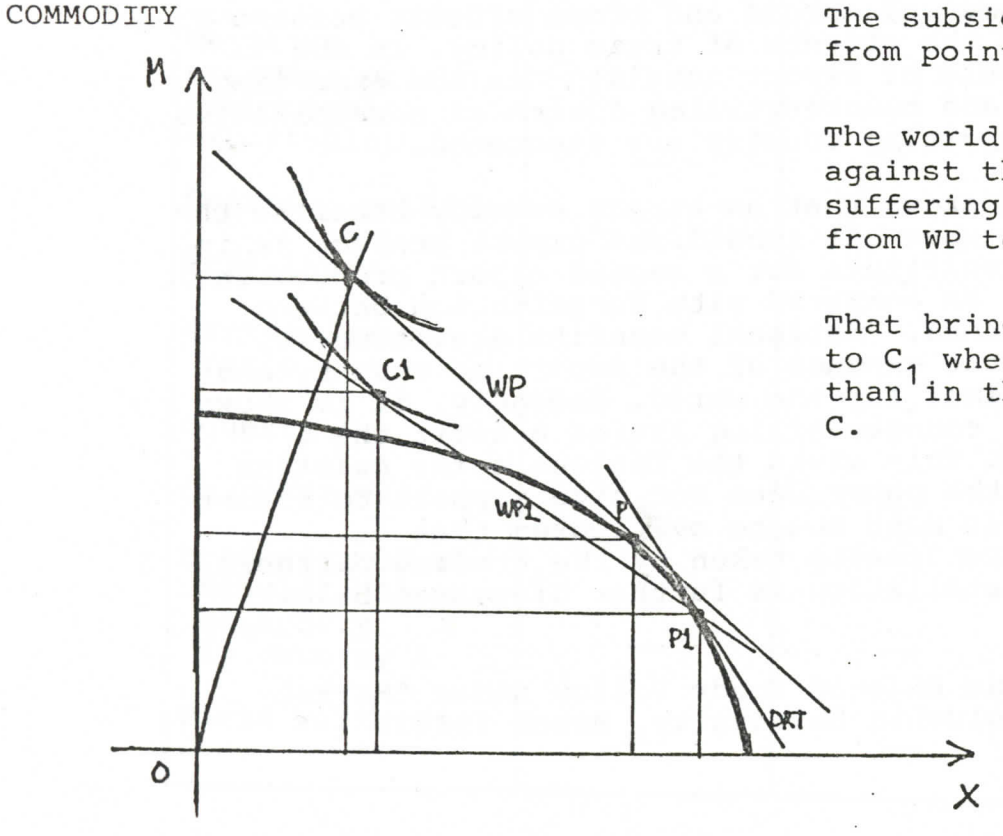
The subsidy changes the production from point P to point P_1

When the supply of X is decreasing and of M increasing, the world price relations change from WP to WP_1, reflecting terms of trade gain to the country A

Due to the favourable terms of trade change, consumers are better off in C_1.

2. Production subsidy on an exportable good

COUNTRY A



The subsidy changes the production from point P to point P_1

The world supply changes work now against the country A and it is suffering a terms of trade loss from WP to WP_1

That brings the consumers down to C_1 where they are worse off than in the pro-subsidy equilibrium C.

59. The models of imperfect competition, especially those effects on the home economy and the gains are exported to the trading partners. The efficiency losses in the home country should also not be forgotten since they decrease both producer and consumer income. The summary of the results for the large-country case is in Table 4. of oligopoly or duopoly can be defined as a game where the various partners act and react according to the various assumptions. The players can have different strategies and the games will then become a complicated network of successive responses.

60. The different strategies, or assumptions about the players' behaviour, determine the solution of the game and have a marked effect on the results. It may be useful to sketch briefly the strategy alternatives most often used in trade policy models. The simplest is the Cournot solution of duopoly or oligopoly markets. There the players (or producers in the market) act as if their rival's output were fixed or their decisions were independent. The market is in equilibrium when each maximizes his profit and there is no need to change production. However, oligopoly or duopoly producers may recognize the interdependence of their decisions and by co-operating they can maximize the profits of the industry. This is called collusion or the Nash solution. Finally, the players may recognize their position on the market as leaders and/or as followers and if they behave accordingly, a solution is possible. This solution is called the Stackelberg solution[16].

61. We now consider a model of two firms, one domestic and one foreign, each producing a single product and selling it in a large number of markets and competing with each other there. The markets are both oligopolistic and fragmented and the problem is simplified by assuming that each firm takes the other firm's behaviour as given (Cournot). Moreover, some economies of scale are assumed in the form of a declining marginal cost curve or in some other form[17]. In this model it is proved that protection of the home market gives the basis, via economies of scale, for successful exporting. It is pointed out that there is no

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16 See more closely textbook of micro-economics as Ferguson: "Micro-economic Theory", Homewood, (Ill). 1972, Henderson, Quandt: "Micro-economic Theory, A Mathematical Approach", New York, 1971 or Shubik: "Strategy and Market Structure", New York, 1960.

17 See, more closely Krugman: "Import Protection as Export Promotion: International Competition in the Presence of Oligopoly and Economies of Scale" in "Monopolistic Competition and International Trade", Oxford 1984.

welfare analysis present and that the purpose has been to model the argument for protection. However, the result must not be interpreted as being in favour of protectionism since the effects on total world trade and welfare are not considered.

62. One aspect of the recent papers dealing with trade policy measures in imperfect markets has been to explain the dual behaviour of countries in connection with trade liberalization. Most countries are in favour of multilateral abandonment of trade obstacles but at the same time they are increasingly using unilateral protective measures.

63. This topic is also the subject of a paper by Brander and Spencer[18] where the profit-shifting (from abroad to the home country) property of tariffs is revealed. The world in their study is such that the rivalry of imperfectly competitive firms serves as a reason for engaging in international trade. To achieve national profit gains tariffs can be used successfully, since the gain of producers and the government is usually larger than the loss for consumers. However, in their game they find that non-co-operative protection yields inferior results with regard to welfare compared to the co-operative solution, since each country and producer would be better off with less protection. This result provides support for multilateral efforts towards trade liberalization.

64. Similar results, which support subsidies in order to achieve national gains, are presented in another paper by the same authors[19]. They have imperfectly competing firms and governments in a game where the government chooses subsidy levels in the first stage and the firm chooses output levels in the second. In the game there are two exporters and one importer of the imperfectly competitive product and two governments. Because it is advantageous for a country to capture a large share of profitable export production, export subsidies can be used as a measure towards this profit-shifting. However, the policies are sub-optimal from the global point of view and the producers could gain if, in co-operation, they would decide not to use subsidies.

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18 Brander, Spencer: "Tariff Protection and Imperfect Competition" in "Monopolistic Competition and International Trade", Oxford 1984

19 Brander, Spencer: "Export Subsidies and International Market Share Rivalry", NBER Working Paper No. 1964, September 1984

65. The case for export subsidies is even weaker in the paper by Dixit and Grossman[20]. Their model consists of two factors and two production sectors with several firms. The first sector is oligopolistic, competing for one specific factor. The second sector is perfectly competitive and uses only the other factor with constant returns to scale. The factor markets are competitive. The oligopoly in the first sector involves domestic and foreign firms and they are in a Cournot duopoly situation.

66. The point is that several of the firms are oligopolistic and the promotion of rent-shifting (as in the previous model) by one firm will at the same time cause rent losses in the other. The granting of subsidies raises the earnings of the scarce factor and this is a disadvantage to those not supported. The problem is accentuated when several firms are competing for one factor.

67. The authors conclude that if the specific factor is used in fixed proportion to output and all the duopolies have similar demand and cost conditions, free trade is the optimal solution. In the case where there are differences between oligopolistic firms, only those with above-average profits should be subsidized, but if there is no information available about profits, there would be no grounds for government aid policies.

68. Finally, we enlarge the scope of the analysis to take into account retaliation by the trading partners as one of the strategies of the game. When retaliation and demands for reciprocity in trade policy come into the picture, the support given does not achieve the desired results. The dynamics of retaliation can be described as a sequence of moves in a game[21]. There are two countries, A and B, and when A introduces a trade policy measure B will retaliate. If the free trade situation is restored, the game ends and, if not better off, neither country is worse off. The game may, however, lead to a situation where aggressive reciprocity - more support and more retaliation - leads to escalating protectionism and both countries are worse off. The possible solutions to the game after a number of rounds are numerous, but only when there is free trade are both countries better off. The cases where only one or the other country would be better off are very few. Thus neither aggressive retaliation nor support are likely to lead to welfare improvements and both represent risky strategies.

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20 Dixit, Grossman: "Targeted Export Promotion with Several Oligopolistic Industries", NBER Working Paper No. 1344, May 1984

21 Cline: "Reciprocity - A New Approach to World Trade Policy", Policy Analysis in International Economics 2, Institute for International Economics, Washington, DC, September 1982

69. To conclude the discussion of the effects of government aids on imperfectly competitive markets, it is easy to see that when imperfections are introduced into simple models the result is likely to be such that government intervention may produce sectoral and national gains at the cost of the trading partners. When the analysis is more elaborate and takes into account total world welfare, many products, shifts of resources within a sector, retaliation, etc. the case for interventions becomes progressively weaker and it is not clear whether any industry or country can gain.

3. Imperfections in factor markets

70. The word "imperfection" here could equally well be replaced by the word "distortion". In this section we discuss the effects of government aids in those cases where factor markets do not conform to the assumptions of the HOS model. We may thus have sector specific factors - mobility is imperfect - and we may also have models where mobility changes over time. The classical factor market distortions are on the labour side. We may have wage differentials - a different wage is paid in different sectors - wages can be inflexible in both sectors or only in one. The important point is that in models with wage rigidities unemployment (of the classical type) will occur.

71. The models with factor market rigidities often consider the adjustment problems of Western economies in response to changes in international trade structures. The models also have dynamic properties and the short-run and long-run effects can be separated. In the paper these problems are discussed later on when reasons for government interventions are sought. In this section the question is: What are the effects of adjustment assistance in the short and in the longer term?

72. Some models show cases where government intervention can achieve gains - often temporary and short term. These results are, however, questioned by some authors, since they are found only when there is a simplification in the structure of the models. For example, the costs involved in the collection of finance for subsidies are ignored. In the longer-run analysis economies are assumed to be more flexible, i.e. "classical", and therefore there are no advantages in subsidies. Below we survey some of the papers concerned to see how different assumptions affect the results.

73. Michael Mussa[22] works with a 2 x 2 trade model where the movement of capital from one sector to another requires

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22 Mussa: "Government Policy and the Adjustment Process", in "Import Competition and Response", NBER, Chicago 1982

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22 Mussa: "Government Policy and the Adjustment Process", in "Import Competition and Response", NBER, Chicago 1982

some additional input of labour. Thus, in the short run capital distribution is fixed but in the long run it is flexible; but there are costs in adjustment. The problem is to justify the need for government interventions, if any, in achieving the optimal adjustment path to the new equilibrium.

74. The result shows that in the absence of additional distortions and assuming "perfect forsight" by private agents there is no reason for intervention. On the other hand, when there are distortions that directly affect adjustment, government intervention aimed at correcting these distortions brings welfare gains - but no other assistance is needed. The results are in complete accordance with the basic theories of welfare economics.

75. Very similar results are achieved by Neary with a two-sector trade model of an open economy with sector specific capital in the short run and with transitional wage stickiness[23]. The need for adjustment arises from an exogenous fall of the price of the labour intensive, import-competing product. The adjustment path towards new equilibrium is cyclical and includes phases when output is falling and unemployment increasing. In these circumstances, the government could control the speed of adjustment of both labour and capital with non-distorting subsidies that would prevent the appearance of unemployment. If that were not possible, a reduction of adjustment costs could be achieved by smoothing capital re-allocation by means of subsidies. With severe factor market distortions there is a justification for subsidies on the assumption that the government has the necessary information as to where the new equilibrium can be found. In an undistorted economy with well functioning markets and full information no case for subsidies arises.

76. Next we review a two-period model developed by Swedish economists[24]. The new point in this model compared with those above is that once a subsidy is introduced it becomes permanent. In the model there are two export sectors and two factors of production. Labour is sector specific and wages rigid in the short run but in the long run labour becomes mobile and wages flexible. Capital is sector specific in both the short and the long run (in both

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23 Neary (1982): "Intersectoral Capital Mobility, Wage Stickiness and the Case for Adjustment Assistance" in "Import Competition and Response", NBER, Chicago 1982.

24 See more closely: Flam, Persson, Svensson: "Optimal Subsidies to declining Industries, Efficiency and Equity Considerations", Journal of Public Economics, Volume 22, December 1983.

periods). The world market prices of the output of one sector start to fall and this creates unemployment and income distribution problems in the short run.

77. The government can prevent adverse income distribution effects and remedy unemployment in the short run with subsidies, but it knows that once the subsidy is introduced it becomes permanent. In the short run also, for reasons of efficiency (reduced unemployment) as well as on grounds of equity, subsidies are favoured, that is it is possible to move towards both targets with government aids. But if the world market price in question continues to fall, then in the longer run the income distribution and efficiency goals are in a trade-off situation. Efficiency reasons would then call for abandoning the subsidy, while reasons of equity would call for an increase. It is shown in the study that the optimum response to a further fall in the price is to decrease the subsidy, which in the short run increases unemployment, whereas in the longer run a better employment performance is achieved.

78. A common feature of the papers surveyed above is that they argue that short-run national (or sectoral) gains are achieved if the government assists in the adjustment process and if it is known where the new equilibrium can be found. In most cases the policy should be such that the speed of the process of adjustment is slowed down. The effects on world trade and on the welfare of the trading partners are not considered. But, during the slower adjustment process, world trade is necessarily distorted and global efficiency and welfare is reduced.

79. In the models above, some unemployment occures during the adjustment period. Such unemployment is, by its nature, classical and is caused by the inability of the economy to adjust quickly. Consequently, government aids give some relief. On the other hand, if the unemployment is due to lack of demand, then we are in a situation where macro-economic policies are appropriate and selective government aid measures cannot solve the problem.

80. As pointed out earlier, the discriminating effects of government aid policies become apparent when a multiple-sector analysis is carried out instead of a classical two-sector approach. Discrimination and the distribution of the cost of protection is discussed in the essay by Clements and Sjaastad[25]. They show that the arguments in favour of protection often take account only of the initial effects of intervention and are thus misleading. When a more comprehensive analysis is made it reveals the self-defeating effects of protective policies.

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25 Clements, Sjaastad: "How Protection Taxes Exports", seminar paper, February 1984

81. They also bring a third sector into the analysis and have exportable, importable and non-traded goods. Non-traded goods consist mainly of services and their price is roughly the same as that of nominal wages. With their three-sector analysis they are able to study the transfers among the groups in the economy resulting from protection.

82. Their main argument is that protection of the import-competing sector has the same effect as a tax on exporters. The protection of importables increases their price and later also the price of non-traded goods in relation to exports, since resources are shifted towards importable goods production. The only group facing given world prices are the exporters who are now suffering real income loss.

83. Similarly, it can be concluded that an export subsidy is a tax on domestic producers of importable goods. By analogy, it can also be argued that a subsidy on non-traded production harms both the exporters and the producers of the import-competing product. The issue can be put more generally by saying that if one sector is favoured, others are harmed and that domestic measures on non-traded goods have trade effects either via efficiency losses or income transfers among sectors.

84. To conclude, it is necessary to introduce the concept of "effective protection". It is valid, when a multi-stage production process, including traded and non-traded goods as well as intermediate inputs, is assumed in the model, reflecting better the situation in the real world. The effective protection rate of certain end-products sums the various subsidies and other protective measures used at the individual stages of production. The effective protection - the protective structure as a macro concept - is dependent on elasticities of demand and substitution, the subsidy and protection structure of the economy and input-output relations. The practical computation of effective protection estimates is a tedious task and often requires great simplification of the economic structure[26].

85. The quantitative magnitude of the effects of government aids on production and consumption depend on the size of the price elasticities of supply and demand on the factor and the commodity markets, as well as on the size of the original relative price distortion. For consumers the income elasticity of demand is also relevant. Furthermore, in an open economy government aids which affect consumption

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26 See more closely Corden (1971), op.cit. on the derivation and calculation of effective protection.

and production patterns necessarily also affect foreign trade. In total, the quantitative changes in trade depend on the overall elasticities of foreign trade to changes in income, demand and price. In the small-country case trading partners are not hurt, but a country with market power passes effects of interventions also to its trading partners.

86. When the effects of protectionism and subsidies are considered from the point of view of dynamic economies, it can be concluded that, in the longer term, growth and income are considerably reduced. As is often the case with government aids, the weakest firms are kept alive, whereas market forces would prefer to give a growth boost to the stronger firms. This resulting inefficiency will deflect the economy from its potential growth path and thus incomes will be less than optimal.

IV THE RATIONALE OF THE USE OF GOVERNMENT AIDS

87. The increased use of government aid policies has coincided with the large structural changes in world trade in the 1970s. During the recession macro-economic policy measures were found ineffective to sustain at the same time growth, employment and price stability. Governments have tried to supplement macro policies with aid policies since it was widely believed that the slowdown of growth would be short and that firms could survive with only temporary help; often the subsidy policies were of an ad hoc type, used just for the purpose of keeping firms alive.

88. The persistent slowdown of growth in the old industrialized countries and at the same time the intensified import competition of the newly industrialized countries (NICs) created considerable pressures for structural change. But it would seem that the flexibility required in order to adjust to changes in trade and production patterns has considerably weakened in the mature Western economies[27].

89. The size and complexity of the production structure has increased, making it difficult to interpret and respond to market signals and to restructure production rapidly. For example, modern investment decisions require a long time-span for realization and once construction has

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27 See the discussion of adjustment resistance for example in OECD: "Cost and Benefits of Protection", CPE/PEU((84)1, Paris 1984, and in Renshaw: "Adjustment and Economic Performance in Industrialized Countries", ILO project "Employment, Trade and North-South Co-operation", Geneva.

started, many decisions are irreversible whatever the new market signals might convey.

90. Rigidities have also increased in the labour markets. Occupations have become more and more specific, calling for long vocational education and training. Both the occupational and the regional mobility of labour has decreased. To some extent this is caused by a weakening of the economic incentives for mobility; thus wage differences are often not large enough to offset the resistance to removal and occupational change. But much of the reluctance to change is explained by non-economic and social reasons.

91. In addition, the complexity of modern welfare economies with all their rules and structures is likely to slow down the adjustment processes. Similarly, the importance of equity and stability targets and demands for social security and national self-sufficiency have all contributed to the increase in government aid policies during the past decade.

92. To deal with adjustment problems, both reactive and active government aid measures are used[28]. The reactive policies can be characterized as having shelter-giving and defensive features. The active policies, on the contrary, consist of measures to mitigate and/or speed up the adjustment process and thus re-allocate productive resources.

93. It is interesting to note that even large international organizations have or have had conflicting views on the necessity for and thrust of adjustment policies. In an article by Martin Wolf[29] these different ideologies are discussed. He compares the various public statements made by GATT, the OECD and UNCTAD. The views expressed by GATT are quite contrary to those of UNCTAD. GATT defends most clearly the strength of market forces in adjustment, while UNCTAD would wish to replace market forces by selective, sector-specific government policies.

94. In the opinion of the OECD it is best to rely on market forces, supplemented by positive adjustment policies. It is stated that governments should make efforts

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28 Baldwin (1984): "Trade Policy, Income and Employment", NBER Working Paper No. 1321, April 1984

29 Wolf: "Tower of Babel: Conflicting Ideologies of Adjustment", The World Economy 2/4, February 1980

to create a climate favourable to innovations[30] and then encourage new promising activities so as to speed up the adjustment process. This could partly be achieved by removing market imperfections. The adjustment process should, in principle, be left to market forces. Functioning of the markets should be improved and competitive market behaviour encouraged. The OECD stresses the importance of the transparency of policies when the government intervenes in the adjustment process.

95. This OECD view can be interpreted as a compromise between various, often conflicting modes of economic thought. It is, however, evident that the belief in government policies as effective engines of economic improvements has decreased. A crucial point in determining adjustment policies is information regarding the future. It remains an open question whether governments are any better at "picking the winners" than the market itself. The classical "infant industry" argument for protection is not far away from the idea of "picking the winners" and that similarity should itself cast a shadow on the latter approach.

96. Governments are often exposed to attempts by different pressure groups to influence their actions. These groups argue on the basis of the short-term gains which can be achieved at sector level - or even at a national level - with government aid policies. Sometimes the policy maker faces simultaneously a number of conflicting demands for government support.

97. In a number of countries smaller pressure groups have in recent years become more important than the macro-level organizations, such as economy-wide employers' associations and trade unions. Thus, specific sectoral demands enter increasingly into public bargaining rather than the general interests of the larger groups in the economy. This "fragmented pluralism"[31] is in some countries an important factor behind government aid policies.

98. Demands for government support often have a tendency to spawn further new demands. If, for example, one domestic group gets government support to help in the development of promising new activities, would it not be quite natural that another group of producers should also come up with demands for help? Or if it is known that particular

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30 OECD (1983 I): Positive "Adjustment Policies, Managing Structural Change", Paris 1983 and OECD (1983 II): "Transparency for Positive Adjustment - Identifying and Educating Government Intervention", Paris 1983

31 OECD (1984), op.cit.

producers abroad receive government aids, would it not be entirely justified for domestic producers to receive similar support?

99. On the "supply side" of government aids when there is a lack of information to determine which applicants fulfil the conditions for receiving such aids, a desire for equity on the part of the "support-giver" can lead to impossible situations with aid being provided to a large number of sectors. As a result the protection, when it is granted to many, includes the mechanism of its own defeat[32] since if all are supported equally no one benefits from the support. During recent years, however, a natural barrier has arisen to this kind of waste: governments in most countries are running budget deficits and the growth of their expenditure is therefore limited.

100. The political bargaining on trade policy measures can also be analysed on the basis of economic welfare theory. The models can take into account the so-called "lobbying" response to either import competition or other trade events. In the most simple case, even in the traditional 2 x 2 trade model, if the commodity to be protected is labour intensive the bargaining between labour and the government can be analysed[33]. In general, it may be said that in most cases free trade would be optimal to consumers, but often protectionist lobbies succeed in overriding the general aim of increasing general consumer welfare.

V CONCLUDING REMARKS

101. The general conclusion from this survey of the effects of government aid policies on various assumption is evident. In the "perfect world" such interventions have harmful overall effects. When the models assume some imperfections, government aid policies produce some short-run national gains, but only at the expense of trading partners; since it is proved that free trade is world optimal, also in these cases total world welfare is decreased. Since there are many imperfections in modern economies the benefits of world trade are not easily seen when the introduction of a trade policy measure is considered. In an open economy, production and consumption

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32 See discussion in Curzon, Price: "Is Protection Inevitable", Discussion Papers in International Economics 8401, The Graduate Institute of International Studies, Geneva, April 1984.

33 See Feenstra, Bhagwati: "Tariff Seeking and the efficiente Tariff", in "Import Competition and Response", Chicago, 1982

changes will always have trade effects. Furthermore, if the country which uses aid policies has market power in world trade, the effects of interventions are often exported to its trading partners.

102. The more dynamic the analysis, the weaker is the case for interventionist policies. This is especially true when multi-sector and multi-product analysis is carried out. Retaliation by trading partners can also negate the possible short-run gains which are sought by various pressure groups. In the long run hardly any positive effects on the whole economy as a result of government aids can be shown. If the adjustment process is smoothed by means of protection for unnecessarily long periods, the economy suffers from growth losses in the longer run. Efficiency is reduced and consequently the growth of output and income is below the economy's potential.

103. The analysis in this paper can be summarized in the following table:

EFFECTS ON GOVERNMENT AID POLICIES

Table 5

	Short run		Long run
	Perfect competition	Imperfect competition	"Classical world"
Country A	-	+(-)	-
Trading partners Country B	-	-(+)	-
World	-	-(-)	-

104. To achieve the benefits of free trade in the real world, some supply side deregulation and improvement of the functioning of market forces are needed. This can come about only with co-ordinated policy action on both the national and international level and in this respect the role of international organizations can become more and more important.

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