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Developing Countries: The Case of Feed

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1 Introduction

Sustainable Agricultural Development is heavily influenced by national agricultural policies. It is not only the domestic policy what matters for an individual country but even agricultural policies of foreign countries directly or indirectly affect the performance of the national food and agricultural sector. In so far the efforts of international coordination of agricultural policies within the GATT-round deserve and obviously receive serious attention. Especially those policies are on the agenda of the negotiations which are supposed to have the most adverse effects on other countries. The Common Agricultural Policy (CAP) of the European Community (EC) appears to belong to this category. The EC and some other industrialized countries have been blamed for pressing, distorting and destabilizing world market prices due to their highly protective policy measures. It is therefore demanded from the U.S.A. and the CAIRNS-group that those countries significantly reduce their protection levels for temperate zone food products. The EC's response to this requirement of more free trade orientated countries was the rebalancing proposal which implies slightly reduced protection levels for traditional surplus products (grain, sugar, milk and milk products, beef) provided mainly by supply control measures and the creation of new tariffs and import quotas for non-grain feed and oilseeds. This rebalancing proposal and its likely impact on developing countries is the main topic of the paper.

A vast literature exists on the effects of unilateral or multilateral trade liberalization (i.e. GOLDIN und KNUDSEN, 1990; KOESTER, 1982; MATTHEWS, 1985; PARIKH et al., 1988; TYERS and ANDERSON, 1988). Only few studies, however, concentrate on the rebalancing strategy and its external effects (COMMISSION OF THE EUROPEAN COMMUNITY, 1988; ABARE, 1989; MAHÉ and TAVÉRA, 1988). Since the focus of these contributions is not on the Third World it seems worthwhile to analyse in more detail the price, trade and welfare effects of this expected EC policy reform on developing countries. Hence, it is the aim of the paper

- to develop a theoretical framework which allows to calculate and assess the above mentioned effects (section 2);

- to estimate quantitatively the impact on developing countries under different policy scenarios for seven commodities (section 3).

In contrast to previous studies on the rebalancing effects this paper disaggregates the developing world by 16 countries/regions which cover about 98 % of the total group. In addition,

- cross price effects among the seven commodities are considered;
- the equivalent variation concept is taken as welfare measure using a modified approximation technique;
- the aggregation of welfare effects follows the sequential approach avoiding path dependence of the calculations;
- consumer price and producer price effects are calculated separately;
- endogenous policy responses in the developing countries are included in the paper as well as different price policies for consumers and producers.

2 Theoretical Analysis

At a first glance rebalancing of EC's agricultural protection seems to be in line with CORDEN'S (1974, pp.367) request for harmonized protection rates and in so far a desirable strategy. In order to prevent intrasectoral distortions he advised to implement similar protection rates for different commodities to realize at least a second best optimum. However, severe doubts exist, that EC's rebalancing proposal does meet the criteria required for this optimum:

- Without going into detail of rebalancing (see HARTMANN, 1991a) one can expect an increase of the average EC protection level across agricultural commodities leading to a rise of distortion compared to both non-agriculture and international agriculture;
- Harmonized protection levels do not require eliminating imports as many politicians suggest. Rather, the nominal protection level necessary to provide complete import substitution very often exceeds the second-best-level;
- The introduction of new protectionism on oilseed and feed markets raises uncertainty about the future behaviour of decision makers and creates political property rights which are not that easy to remove.

Hence, from an international welfare point of view the risk of getting more welfare losses exceeds the opportunity to move towards a more liberalized world market situation. Despite this general conclusion individual developing countries may gain or lose welfare due to the rebalancing strategy. Thus, an impact analysis shall reveal the country-specific welfare effects of a change in the world market price structure due to EC's rebalancing strategy. In contrast to the empirical part of the paper, where an advanced welfare approach is applied, the following considerations are based on a simple graphical illustration of the problem. However, with figure 1 the most important determinants of the welfare effects can be elaborated. Given a single market without any relations to other markets one can derive the surplus effects (change of producer and consumer surpluses) and the budget effects of exogenous and endogenous price adjustments. The analysis starts with declining world market prices. Three cases can be examined.

Case 1: The concerned country does not pursue an own agricultural policy. World market prices equal domestic producer and consumer prices. Assume a price decrease from p_i^I to p_i^{II} then the sum of producer and consumer surplus changes over the autarky welfare level declines by ΔS in case of an exporting country. These surplus changes equal the total welfare effects since budget receipts and/or expenditures do not occur. The surplus curve indicates that in case of an importing country the private welfare effect would increase due to falling world market prices. The surplus curve is a monotonic convex function with its lowest point at the level of the autarky price where no gains from trade emerge. Its degree of convexity depends on the supply and demand elasticities. Elastic responses of market participants induce a high degree of convexity of the surplus curve.

Case 2: The country has implemented an agricultural policy. Domestic prices deviate from world market prices. The former are fixed below the world market level at p_i^I and the country exports the commodity. Then falling world market prices from p_w^0 to p_w^1 only affect the budget receipts (= export taxes) whereas consumer and producer surpluses are not influenced. Export taxes decline by ΔBR as the budget line I indicates. The budget line is a linear function with respect to changing world market prices and is conditioned on a

certain domestic price level which determines the point of intersection with the price axis. The slope of the budget line is the flatter the more the fixed domestic price approaches the autarky price. Depending on the desired level of fixed national prices one gets different budget lines I, II, III, IV and V. Their absolute slopes are also determined by the demand and supply elasticities. The more responsive market participants are the steeper the corresponding budget line. In case of an importing country one receives a downward sloping budget line which implies decreasing budget expenditures when world market prices decline.

Case 3: Finally it is assumed that there is an endogenous shift of domestic prices due to world market price adjustments. Concrete this implies equivalent absolute changes of the corresponding prices. Thus the absolute price gap remains constant. With falling prices the budget line II conditioned on p_i^{II} indicates the relevant level of budget receipts at the world market price level p_w^1 . Hence, receipts decrease by dBR^* . Simultaneously the surpluses are reduced by dS inducing an overall welfare loss of $dW = dS + dBR^*$ compared to the situation prior to the price change. If only the domestic price were adjusted downward at given world market prices then the surplus loss would be the same whereas the loss of receipts would be lower as the vertical difference between the budget lines I and II indicate at the world market price level p_w^0 .

Extending these results to the multi-market case one can draw the following conclusions. The final welfare effect for a single country depends on the

- structure of production and consumption of the seven commodities for which world market prices adjust;
- initial trade status of the concerned country in each commodity market;
- application or absence of national agricultural policy measures driving a wedge between world market prices and domestic consumer/producer prices;
- responsiveness of domestic prices to changes of world market prices (price transmission elasticity);
- own and cross price elasticities of demand and supply across agricultural commodities;
- absolute level of exogenous and endogenous price changes which can reverse the trade position from an exporter to an importer or vice versa.

Since the impact structure of these driving forces is of such a complex nature, one can not arrive at simple theoretical conclusions. Hence, a first assessment of EC's rebalancing strategy must and can only be given on basis of an empirical analysis which is subject of the proceeding section.

3 Empirical Analysis

3.1 Method and Data Used

To measure the international effects of policy changes in several different food commodity markets, a global multi-commodity model is required. In this paper the world price effects due to a policy of rebalancing EC agricultural protection are taken from a simulation run of the SWOPSIM (Static World Policy Simulation) model (ABARE, 1990, pp.14).¹ In this policy run the average level of discrimination faced by consumers in the EC remains similar to the base case, while producer protection slightly declines. Table 1 summarizes the assumptions as well as the European and world price effects of this policy simulation.

Given these multiple world market price changes (see table 1), the welfare effects in LDC's can be calculated. An adequate framework for policy evaluation in the case of multiple-price changes and market interdependencies is the sequential approach based on the HICKSIAN compensated curves. This approach of the new welfare economics is also an exact welfare measure in the case of existing and/or changing market distortions. This latter aspect is very important, since in many developing countries the agricultural sector is directly and indirectly affected by a complex set of policies (KRUEGER, SCHIFF and VALDÉS, 1988; WORLD BANK, 1986, pp.61).

Using this extended framework of applied welfare economics, the efficiency effects to LDC's due to a multiple world market price change consist of the following three components (JUST, HUETH and SCHMITZ, 1982, pp.338-341). First, the benefits to consumers can be measured by a special approximation of the HICKSIAN equivalent variation² while second, the welfare effects to producers are equal to the changes in producer rent. Both welfare measures are calculated sequentially. This implies that the resulting supply

and compensated demand curves are successively conditioned on previously considered price changes (JUST, HUETH and SCHMITZ, 1982, pp.338-341). For the single market case the sum of producer and consumer surplus changes can be found in figure 1 as dS.

In addition to these total private welfare effects of an externally induced multiple price change, one has to consider the change in the government budget in the developing country (see the budget line in figure 1). This third component must be calculated on all markets where internal distortions exist in the initial situation or are introduced or altered as a consequence of the EC policy reform. It is worth noting that the calculation of the budget effects does not follow the sequential procedure, rather it is derived as the difference between the initial and the final situation after all adjustments have taken place.

The distributional and efficiency effects of externally induced world market price changes on developing countries very much depend on the existing home-made distortions and the degree of insulation the poor countries realize (see section 2). To incorporate the former determinant, the analysis considers internal agricultural policies where data on protection/distortion levels were available (SULLIVAN et al., 1989).³ To capture the latter argument, the calculations are done using two different sets of world price transmission elasticities (WPTE). One extreme case assumes that world market price changes are fully transmitted into the developing country (WPTE = 1). This implies that the absolute change in world market prices equals the absolute change in domestic prices (see figure 1). In an alternative scenario no internal price adjustments due to externally induced world market price changes (WPTE = 0) are considered. Thus, the analysis covers the whole range of possible adjustment policies in the LDC's due to an EC rebalancing policy.⁴

The effects of policy intervention are calculated for 16 developing countries and regions⁵ for the year 1986. All data, price elasticities and protection rates are taken from the SWOPSIM database of the USDA (SULLIVAN et al., 1989) and therefore coincide with the data base used to identify the world market price effects due to an EC rebalancing reform. In accordance with the SLUTSKY-SCHULTZ-relation for food products, income elasticities are

set equal to the negative value of the sum of the own price and cross price elasticities. Unfortunately, the data concerning the internal sector-specific distortions in the developing countries are very incomplete. Furthermore, all calculations are based on official time-series data and are therefore limited to the formal sector of the economy. The restriction of this analysis to only seven commodities is due to a lack of information concerning the world market price effects for other products as a consequence of an EC rebalancing reform. Given these limitations, the picture presented can only be seen as indicative of the effects a rebalancing policy in the EC feed sector would have on the agricultural sector and the overall economic performance of the developing countries.

3.2 Results

The distributional and efficiency effects of an EC rebalancing reform on the developing countries are summarized in table 2. The examination of these results show that the net welfare effects are quantitatively and qualitatively very unevenly spread over the developing countries and regions. While for example Brazil and China are the big losers of an EC rebalancing reform, India might enjoy substantial welfare gains. The main determinants for this unequal distribution are as follows:

First, the welfare effects of an EC policy reform on a developing country heavily depend on the trade position of the LDC in grain on the one hand and oilseeds and oilmeals on the other. While exporters of wheat and corn and importers of oilseeds and oilmeals tend to gain in net economic welfare, the opposite holds for those countries that have an inverse trade structure. Thus, the substantial welfare losses to Brazil, China and Other Sub-Saharan Africa, documented in table 2, are not surprising since these countries import considerable quantities of grain while they are at the same time exporters of oilseeds and oilmeals. For most of the considered countries/regions the sign of the overall welfare effects is not that easy to identify, since these countries are more or less general exporters (importers) of the considered commodities, or have a very complex trade structure. In this case the welfare effects depend on the size of the deficits, surpluses and EC induced world market price effects on the relevant markets (see figure 1).

In addition to the trade position the degree of internal agricultural protection/discrimination in the LDCs plays a considerable role in the determination of the welfare effects, if world market price changes are transmitted to the domestic market. Table 2 reveals that an omission of own agricultural policies in the countries considered does not only change the results concerning the distribution of welfare effects over consumers, producers and taxpayers but might be even misleading with respect to the sign of the net social welfare effects due to a policy of rebalancing EC agricultural protection (see i.e. India, Nigeria and Other South Asia).

A third major finding and confirmation of the theoretical analysis is that the impact of an EC rebalancing policy on LDCs very much depends on the assumed world price transmission elasticity (see figure 1 and table 2). If developing countries' governments fully transmit the EC induced world market price changes to their domestic markets, three countries/regions, namely India, Other South Asia and Nigeria, will enjoy substantial welfare gains, while the majority of developing countries/regions will lose in net economic welfare. Besides Brazil, the main losers in this policy scenario are Other Latin America, China, Other Low and Middle Income Asia, Middle East and North Africa - Oil-Producers and Other Sub Saharan Africa. The net social welfare loss per year to the developing countries as a group amounts to 519 million US dollars under the given domestic agricultural policy.

Turning to the alternative case in which LDCs are assumed to isolate their domestic market from world market price changes, all countries/regions except Mexico and South Africa have to bear welfare losses. The net loss of 789 million US dollars per year to the Third World is much greater than in the above scenario. Since in the past developing countries very much isolated their domestic markets from international price changes (ANDERSON and TYERS, 1990, p.50) this scenario might be closer to the real welfare effects in the developing countries.

The effects on foreign exchange earnings in LDCs due to an EC rebalancing policy are as follows:

Change in Foreign Exchange Earnings (Million US Dollars)¹⁾

	WPTE = 1	WPTE = 0
Mexico	50.50	5.32
Brazil	-143.14	-155.06
Argentina	-32.63	-34.35
Venezuela	-3.61	-0.49
Other Latin America	-55.99	-61.05
Nigeria	27.34	-10.27
Other Sub Saharan Africa	-34.29	-54.94
Egypt	-23.48	-64.18
Middle East and North Africa Non-Oil Producers	24.69	-37.79
Middle East and North Africa Oil Producers	-33.07	-99.39
South Africa	15.09	7.30
India	345.86	-14.82
China	20.17	-135.96
Other South Asia	148.43	-28.23
Indonesia	-38.46	-19.05
Other Low and Middle Income Asia	-109.55	-86.03
All Developing Countries	157.86	-788.99

1) Values include own agricultural policies in the country considered.

Source: Own calculations for the year 1986. Data are taken from (ABARE, 1990 and SULLIVAN et al., 1989.)

Several patterns emerge from the examination of these results. The first point to note is that in the case of total domestic isolation (WPTE=0) the foreign exchange effects equal the net welfare changes in the last column of table 2. Second, these effects are similar to the welfare changes unevenly spread over developing countries. While in some countries, such as Brazil, the foreign exchange earnings will decrease by a substantial amount, others, such as India and Other South Asia, might experience considerable increases in net export earnings. The third major finding is that here again the sign and the size of the effects very much depend on the assumed world price transmission elasticity. Assuming a full price transmission, developing countries as a group would enjoy an increase in foreign exchange earnings of 158 million US dollars, thus easing their foreign exchange deficit by about 3 % for the corresponding commodities. In contrast, under the assumption of zero world price transmission elasticities net export earnings would decrease by 789 million US dollars. In this latter scenario developing countries as a group would experience an aggravation of their foreign exchange deficit with respect to the considered commodity markets by about 15 %.

Many studies analyzing the impact of a **liberalization** of EC agricultural policy on the Third World arrive at the conclusion that these countries as a group would have to bear a welfare loss as a consequence of such a reform (e.g. KOESTER, 1982; MATTHEWS, 1985; PARIKH et al., 1988; TYERS, 1989; TYERS and ANDERSON, 1988). The results presented in this paper suggest that developing countries as a group would also not be beneficiaries in the case of a **rebalancing** policy in the EC feed sector. Thus one may jump to conclusion that a CAP liberalization and a rebalancing strategy point in the same direction and hence, from a developing countries perspective, it doesn't matter which strategy the EC pursues. This conclusion, however, neglects some important aspects.

First, some doubts seem justified that a rebalancing strategy will really reduce support on high protected markets. It is likely that this policy primarily leads to an increase in protection for deficit products, thereby further increasing worldwide distortion and reducing the export opportunities for LDCs.

But even if one assumes that the EC really reduces protection for the CAP core commodities there remains at least one major difference between an EC rebalancing strategy and a liberalization policy. This is the impact these reforms have on stability and predictability in world agricultural markets. While the latter leads to a general reduction of world market price risk (TYERS and ANDERSON, 1988) and future policy uncertainty, the former increases policy uncertainty and has at best an ambiguous impact on price risk (ABARE, 1990, p.21). This holds even more if a rebalancing strategy were not the outcome of the present GATT round but the reason for its failure. In that case world agricultural markets might be put in total disarray. Since especially developing countries benefit from predictability, certainty and stability in world agricultural trade (BALASSA, 1988, p.46; MATTHEWS, 1988, p.32) it is in all their interest to ensure a liberalization of world agricultural markets.

Notes

- 1 There exist some additional empirical studies that analyze the world market price effects of alternative EC rebalancing strategies (COMMISSION OF THE EUROPEAN COMMUNITY, 1988; MAHÉ, 1984; MAHÉ and TAVÉRA, 1988). Because of the different assumptions concerning the policy simulations and the difference in product coverage and product aggregates it is unfortunately not possible to compare the results.
- 2 For the method to approximate the equivalent variation see HARTMANN, 1991b.
- 3 Because of a lack of data the incorporation of sector-specific policies in the analysis was only possible for Mexico, Brazil, Argentina, Nigeria, Egypt, India, Other South Asia and Indonesia.
- 4 Since the welfare effects in a multicommodity model with existing distortions are not a monoton function of the world price transmission elasticities the two scenarios do not necessarily represent the upper- and lower-bound welfare effects in a developing country due to an EC rebalancing strategy.
- 5 These 16 countries/regions encompass about 98 % of the developing world. Especially the countries classified by the World Bank (28,pp.180) as low-income and lower middle-income economies are almost totally included in the analysis. The country composition of the regional aggregates is as follows. Other Latin America: Belize, Costa Rica, El Salvador, Honduras, Guatemala, Nicaragua, Panama, Bahamas, Bermuda, Cuba, Dominican Rep., Haiti, Jamaica, Trinidad & Tobago, Barbados, Bonaire, Curacao, French West Indies, Guadeloupe, Martinique, Turks & Caicos, Cayman Islands, Aruba, British West Indies, Leeward-Windward Islands, St. Kitt, Neth. Ant., Antigua, Nevis, Montserrat, British Virgin Islands, Grenada, St. Vincent, St. Lucia, Dominica, Guyana, French Guiana, Surinam, Bolivia, Chile, Colombia, Ecuador, Paraguay, Peru, Uruguay. Other Sub-Saharan Africa: Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, Cent. Afr. Rep., Chad, Comoros Islands, Congo, Djibouti, Equatorial Guinea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Ivory Coast, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mauritius, Mozambique, Namibia, Niger, Reunion, Rwanda, Sao Tome/Principe, Seychelles, Sierra Leone, Somalia, Senegal, Sudan, Swaziland, Tanzania, Togo, Uganda, Zaire, Zambia, Zimbabwe. Middle East and North Africa (Non-Oil-Producers): Turkey, Cyprus, Lebanon, Israel, Gaza, West Bank, Jordan, North Yemen, South Yemen, Marocco. Middle East and North Africa (Oil-Producers): Syria, Iraq, Iran, Kuwait, Qatar, Sudi Arabia, United Arab Emirates, Oman, Bahrain, Algeria, Tunisia, Libya. Other South Asia: Afghanistan, Bangladesh, Bhutan, Nepal, Pakistan, Sri Lanka. Other Low and Middle Income Asia: Thailand, Malaysia, Philippines, South Korea, North Korea, Brunei, Burma, Fiji, Cambodia, Laos, Mongolia, Vietnam.

Table 1: Assumptions and Results of an ABARE-Study on an EC Rebalancing Strategy using the USDA SWOPSIM¹⁾ Model in Percentage Change

Commodity or Commodity Group	Assumptions		Results		
	Change in EC's		Change in EC's		Change in World Market Price
	CSE ²⁾	PSE ³⁾	Consumer Price	Producer Price	
Wheat	-41.7	-43.5	-23.6	-26.4	9.0
Corn	-57.4	-58.2	-24.8	-28.6	3.0
Other Coarse Grain ⁴⁾	-20.0	-20.0	-12.7	-11.3	-0.5
Soybeans	46.1	-	44.7	-	-2.5
Soybean Meal	46.1	46.1	41.5	41.5	-7.5
Other Oilseeds ⁵⁾	46.1	-	44.1	-	-5.0
Other Meals ⁶⁾	46.1	46.1	39.3	39.3	-12.0

1) SWOPSIM is a Static World Policy Simulation Model developed by the United States Department of Agriculture. 2) Consumer Subsidy Equivalent. 3) Producer Subsidy Equivalent. 4) Barley, Millet, Mixed Grains, Oats, Rye and Sorghum. 5) Copra, Cottonseed, Flaxseed, Palm Kernels, Peanuts, Rapeseed, Safflower, Sesame Seed. 6) Copra, Cottonseed, Linseed, Palm Kernels, Peanuts, Rapeseed, Safflower, Sesame Seed, Sunflower.

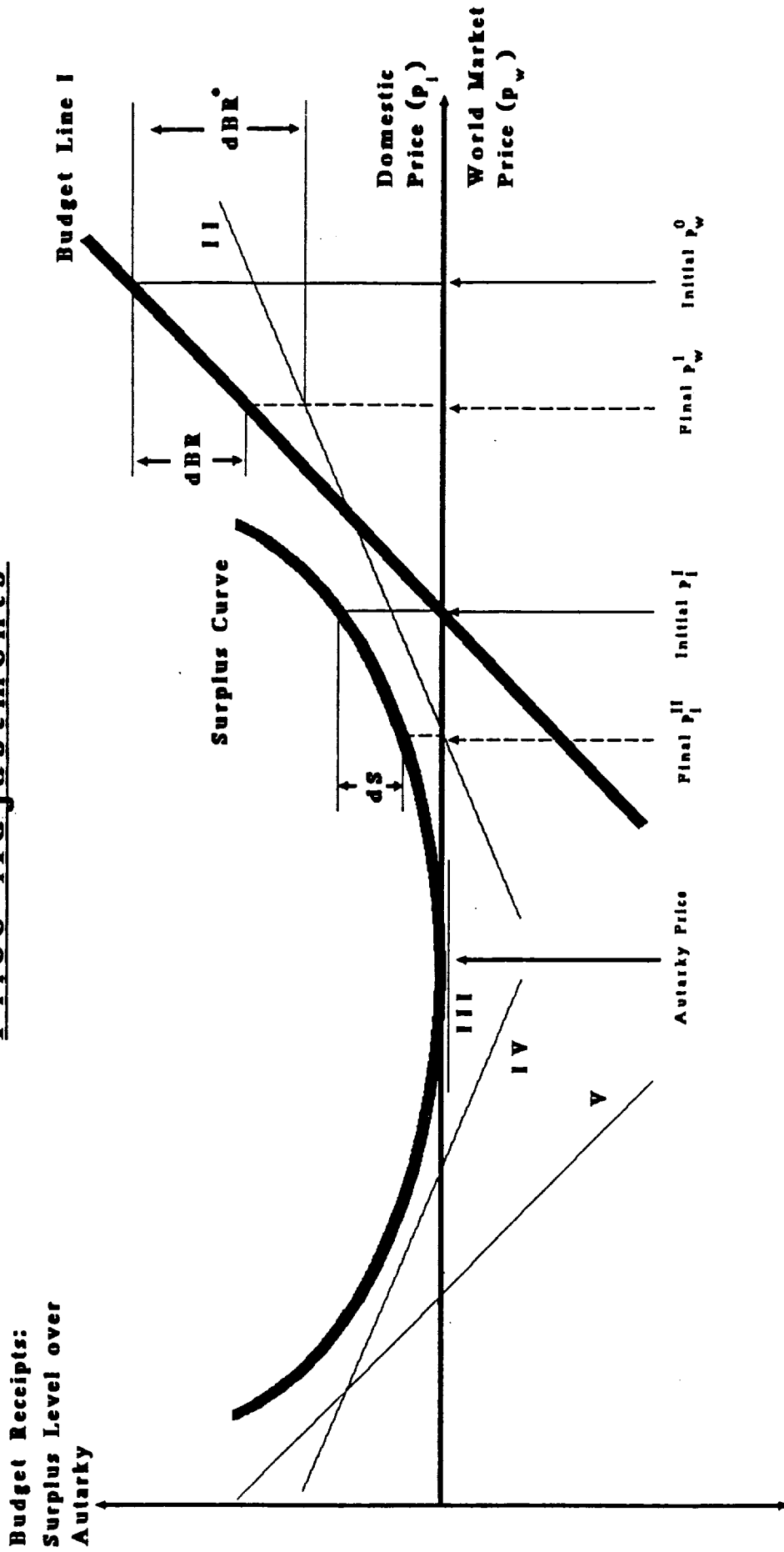
Source: ABARE (AUSTRALIAN BUREAU OF AGRICULTURAL AND RESOURCE ECONOMICS) (ed.), Some Implications of 'Rebalancing' EC Agricultural Protection. Discussion Paper 90-5, Canberra 1990.

Table 2: Welfare Effects of a 'Rebalancing'-Policy in the EC-Feed Sector for Selected Developing Countries and Regions (in Million US Dollar)^{a)}

Country/Region ^{b)}	World Price Transmission Elasticity = 1				World Price Transmission Elasticity = 0 Welfare Change
	Equivalent Variation	Producer Surplus Change	Net-Budget Income Change	Welfare Change	
Mexico	-28.97 (-28.67)	36.10 (35.63)	(-8.50)	7.13 (-1.54)	5.32
Brazil	-7.74 (-7.54)	-142.18 (-142.30)	(-1.80)	-149.92 (-151.64)	-155.06
Argentina	34.20 (34.05)	-60.75 (-61.70)	(-14.31)	-26.55 (-41.96)	-34.35
Venezuela	0.75 (0.71)	-0.72 (-0.73)	(-3.02)	0.03 (-3.04)	-0.49
Other Latin America	-57.49 (-57.49)	-0.12 (-0.12)	-	-57.61 (-57.61)	-61.05
Nigeria	-0.84 (0.01)	-8.95 (-8.95)	(36.30)	-9.79 (27.36)	-10.27
Other Sub Saharan Africa	14.48 (14.48)	-66.37 (-66.37)	-	-51.89 (-51.89)	-54.94
Egypt	-71.20 (-70.62)	8.32 (8.30)	(16.34)	-62.88 (-45.98)	-64.18
Middle East and North Africa Non-Oil-Producers	-163.88 (-163.88)	130.53 (130.53)	-	-33.35 (-33.35)	-37.79
Middle East and North Africa Oil-Producers	-225.70 (-225.70)	129.94 (129.94)	-	-95.76 (-95.76)	-99.39
South Africa	-20.08 (-20.08)	28.23 (28.14)	(-3.17)	8.15 (4.89)	7.30
India	-175.88 (-174.88)	174.80 (176.99)	(98.77)	-1.08 (100.88)	-14.82
Other South Asia	-141.60 (-140.22)	120.96 (122.12)	(61.12)	-20.64 (43.02)	-28.23
Indonesia	17.88 (17.72)	-34.64 (-34.65)	(8.38)	-16.76 (-8.55)	-19.05
Other Low and Middle Income Asia	4.73 (4.73)	-88.14 (-88.14)	-	-83.41 (-83.41)	-86.03
China	-697.30 (-697.30)	576.83 (576.83)	-	-120.47 (-120.47)	-135.96
All Developing Countries	-1,518.64 (-1,514.68)	803.84 (805.52)	(190.11)	-714.80 (-519.05)	-788.99

^{a)} Values in parenthesis include own agricultural policies for those countries where data were available. ^{b)} For the country composition of the regions see note 5.
 Source: Own calculations for the year 1986. Data are taken from: SULLIVAN, J. and V. RÖNINGEN, A Database for Trade Liberalization Studies. Washington 1989; ABARE (Australian Bureau of Agricultural and Resource Economics) (ed.), Some Implications of 'Rebalancing' EC Agricultural Protection. Canberra 1990.

Figure 1: Welfare Effects of Exogenous and Endogenous Price Adjustments



dS Change of Surplus over Autarky due to Domestic Price Adjustment
dBR Change of Budget Receipts due to Exogenous World Market Price Adjustment at a Given Domestic Price Level p_i^I
dBR* Change of Budget Receipts due to Exogenous World Market Price Adjustment and Induced (Endogenous) Domestic Price Change from p_i^I to p_i^{II}

I. **II.** **III.** **IV.** **V** Budget Lines for Different Domestic Prices

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