Welfare Effects of the EU's Common Organization of the Market in Bananas for EU Member States[*)]

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Abstract

In this paper we analyze the welfare effects of the EU's common banana regime, which came into force on 1 July 1993. Our estimates suggest that, over the period 1993-2000, the regime cost consumers about ECU 2073 million, whereas international banana traders (ECU 937 million) and the national budgets of the EU member states (ECU 1036 million) gained. The resulting total deadweight loss to the EU as a whole was around ECU 100 million. Considered by country, the former free traders lost welfare, the formerly severely regulated countries gained. In absolute terms the biggest loser is Germany, the biggest winner is France.

1 Introduction

With a world market share of some 23% the European Union is the world's second biggest banana importer, following the United States (30%). Thus, the banana trade policy of the EU has a great impact on the world banana market. The largest importer among the EU countries in absolute terms is Germany (1,032,470t in the year 1998), per capita consumption is highest in Sweden (16.6 kg per capita). From an EU perspective, however, imports of bananas are quantitatively only of minor importance accounting for just 0.2% of total extra-EU imports.[1]

Until 1993, the EU countries had separate, widely differing national banana market policies. Germany, for example imposed no restrictions on the import of bananas. The Benelux-Countries, Denmark and Ireland applied a 20% customs duty on banana imports from non-preferred, i.e. other than EU and ACP suppliers, whereas the other countries (UK, France, Italy, Spain, Portugal and Greece) heavily regulated their banana markets by the application of quota schemes. On 1 July 1993 the Council Regulation on the common organization of the market in bananas came into force, replacing the mosaic of separate national arrangements. The regulation established a combined quota-tariff regime with preferential access for ACP and EU suppliers. This preference scheme was mainly justified by the argument that protection of ACP banana exports would serve as development aid. Due to its discriminatory nature against imports from elsewhere (including developing countries from South America), the EU banana import regime was challenged by the United States along with Ecuador, Guatemala, Honduras and Mexico in 1996. This import regime was found to be illegal by the WTO in 1997 because it violates WTO obligations under the General Agreement on Trade in Services (GATS) and the Agreement on import licensing procedures. The Dispute Settlement Body's (DSB) recommendations were implemented only partly in a revised scheme by the EC on January 1999 (EC Reg. 1637/98 and 2362/98). Consequently, the WTO DSB authorized US retaliatory tariffs amounting to US$ 191.4 million per year on European exports to the USA starting from March 1999.[2] Despite some modifications of the regulation its discriminatory nature has remained. As of July 1, 2001 the USA have lifted their retaliatory tariffs, after accepting the modified EU's banana import regime. The WTO-compatible system

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[1] 1998-values, banana imports of EU excluding intra-EU trade. Source: FAOSTAT online (http://www.fao.org/) and UN World Trade Databank (taken from the homepage of the Austrian Institute of Economic Research: http://www.wifo.ac.at).
[2] For details see Breuss (2001).

of the EU import regime for bananas, which the EU council has decided upon on 19 December 2001, brought the banana dispute with the US and Ecuador to an end. After an interim period it will fully come into force in 2006.

In this paper we evaluate economically the welfare implications of the Banana Market Regime of the EU for its member states. There are only a few earlier studies dealing with this subject (see Borrel, 1999, Herrman, 1999, Messerlin, 2001), none of which covers the EU countries separately. In section 2 we describe the import regimes for bananas before and after 1993. Section 3 presents the theoretical approach used. The results of the estimations are to be found in section 4. Section 5 concludes and draws out implications for EU trade policy.

2 Former Banana Import Regimes and the EU's Common Market Regulation

2.1 Import Regulations prior to the EU's Common Market Regulation[3]

Before 1993, as a general policy of the EU, a common external tariff of 20% ad valorem was levied on banana imports. The Lomé Convention of 1975 provided an exception to this common external tariff which allowed preferential access of ACP[4] bananas to the EC market in the form of a zero tariff and it guaranteed Community assistance to improve ACP competitiveness. Imports from other members of the European Community were also granted duty free entrance. However, due to a number of exceptions, the banana market in the European Community prior to the new regime consisted of four categories of importers: free trade countries, tariff-imposing countries, the ACP supplied countries and countries with own production (Table 1).

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[3] see also Behr and Ellinger (1993, chapter 2).
[4] The ACP bananas stem from the African, Caribbean and Pacific countries associated with the EU under the Convention of Lomé. The new banana market regulation differentiates between *"traditional"* and *"non-traditional ACP countries"*. The 12 *"traditional ACP countries"* comprise (Belize, Cameroon, Cape Verde, Cote d'Ivoire, Dominica, Grenada, Jamaica, Madagascar, Somalia, St Lucia, St Vincent and the Grenadine, Suriname). The *"non-traditional ACP countries"* comprise the rest.

Table 1: Import regulations prior to 1993

Import regime	Description
Free trade countries (A, D, S, FIN)	No restrictions at all
Tariff imposing countries (B, LUX, NL, DK, IRL)	20 % on bananas except EU and ACP bananas, no quota
ACP Supplied countries (I, UK)	20 % import tariffs on bananas except EU and ACP bananas and reserved quota for ACP suppliers
Countries with own production (F, E, EL, P)	Highly restrictive regimes, ranging from combined quota – tariff schemes (F) to completely closed markets (E).

Note: Old Regimes were in force until July 1993. In the case of A, S and FIN, who joined the EU on 1 January 1995, the old regimes remained in force until the end of 1994.

2.2   The EU's Common Organization of the Market in Bananas since 1993

The original system of 1993 aimed at protecting EU banana producers (and giving them assistance) and granting special preferences to (traditional) ACP producers which otherwise would not have been competitive at world market prices. Due to the customs union and the single market status of the EU, bananas originating within the EU *("Community or EU bananas")* can move duty-freely within the European Union. Table 2 gives an overview of the original regulation and its subsequent modifications in 1998.

The Common Organization of the Market in Bananas (COMB) is a tariff quota system with three kinds of quotas according to three categories of suppliers: *Quota 1* comprises imports of bananas from the twelve traditional ACP countries (*"Traditional ACP bananas"*), which enter *duty-free* up to the maximum quantity of 857,700 t. *Quota 2 comprises* imports from non-traditional ACP countries (*"Non-traditional ACP bananas"*) and bananas from non ACP-third countries (primarily from Latin America; „*Third country or Dollar bananas*"), which are subject to a tariff quota of, originally, 2 million t. This tariff quota was increased to 2.533 t (*Quota* 3) as a result of "consumption and supply needs" due to the accession of three new EC member States (Austria, Finland and Sweden) in 1995. Additional modifications of the regulation were made in 1998 (see column 4 in Table 2). For a comprehensive overview of the history of the changes in the EU's banana market regime and the legal issues in the Banana Dispute, see Salas and Jackson (2000), Komura (2000) and Vranes (2000).

Table 2: The EU Import Regime for bananas since 1 July 1993 and modifications

Category of banana imports	Original regime of 1993			Modifications of the EC tariff quota regime under Regulations 1637/98 and 2362/98
	Access volume (Quotas)	Source/ Definition	Tariffs applied	
Traditional ACP bananas	857,700 t (*Quota 1*)	Imports from 12 traditional ACP countries	Duty-free	- elimination of country- specific allocations (of Reg. 403/93)
Non-traditional ACP bananas	2,553,000 t[1] (*Quota 2: 2,200,000 t; Quota 3: 353,000 t*)	Imports of traditional ACP quantities above the 857,700 t or quantities supplied by non-traditional ACP countries.	Duty-free up to 90,000 t. ECU 750 per t for additional imports out-of-quota.	- elimination of country- specific allocations and "other" category totaling 90,000t (of Reg. 478/95). - increase in duty-free access opportunities from 90,000t to 240,748 t under the "other" category of the 2.553 million t tariff quota. - increase of preference for out-of-quota imports from 100 to Euro 200 per t.
Third-country bananas ("Dollar bananas")		Imports from any non-ACP source	ECU 100 per t up to 2.553 million t. Under the Frame-work Agreement on Bananas (BFA) allocation of tariff quota to 4 countries plus others. ECU 850 per t for additional imports out-of-quota (as of 1 January 1999 Euro 737 per t).	- Euro 75 per t up to 2.553 million t (Euro 737 per t for out-of-quota imports). - modified country-specific allocations to 4 Members and an "others" category. Transferability of unfilled portions of country - Specific allocations eliminated. Increase in access opportunities by 90,000 t to 2.553 mill. t because of the elimination of country-specific allocations to non-traditional ACP suppliers.

[1]In the Council Regulation (EEC) 404/93 the import quota amounted to 2,000,000 t and was increased by a volume of 353,000 t in 1995 and 1996 due to the EC-accession of Austria, Finland and Sweden (*Quota 3*).
Sources: Council Regulations (EEC) No 404/93 of 13 February 1993 on the common organization of the market in bananas, Official Journal L 047, 25/02/1993, p. 0001-001. Council Regulation (EC) No 1637/98 of 20 July 1998 amending Regulation (EEC) No 404/93 on the common organization of the market in bananas, Official Journal L 210, 28/07/1998, p. 0028-0031. Commission Regulation (EC) No 478/95 of 1 March 1995 on additional rules for the application of Council Regulation (EEC) No 404/93 as regards the tariff quota arrangements for imports of bananas into the Community and amending Regulation (EEC) No 1442/93, Official Journal L 049, 04/03/1995, p. 0013-0017. Commission Regulation (EC) No 2362/98 of 28 October 1998 laying down detailed rules for the implementation of Council Regulation (EEC) No 404/93 regarding imports of bananas into the Community, Official Journal L 293, 31/10/1998, p. 0032-0045.

In December 2000, the Agricultural Council of the EU adopted the Commission's proposal for a new import system for bananas. In April 2001 an understanding was reached by the US and the EU. From 2006 the European Banana Market shall be subject to a tariff only system with preferential access for ACP countries. With the council decision of 19 December 2001 a two-step, WTO-comparible solution was reached: A modified banana regime based on historical allocation of licences entered into force on 1 July 2001 with the adoption of the

Commission regulation 896/01 (phase I). In phase two, which started on 1 January 2001, 100.000 t were transferred from quota C (reserved for ACP countires) to quota B (for all suppliers), leaving an amount of 750.000 t for the ACP countries. A detailed description of the transitional regime is given by Messerlin (2001, p. 316ff.).

The US government has suspended its trade sanctions (increased tariffs on EU products), which were implemented over two years (mid-1999 to mid-2001). After a costly detour of eight years, the banana dispute seems to have come to an end. However, the actual regime is still far from a free trade regime and the question arises of whether the banana saga continues (Jackson and Grane, 2001).

3 Welfare Effects of the EU Banana Market Regime – the theoretical model

Our study is the first analysis of the welfare effects of the new banana market regime for each of the 15 EU member countries.[5] The welfare consequences are analyzed for three differently affected groups: consumers, international banana traders and the government. Basically we follow the stylized partial equilibrium model set out by Herrmann (1999). The essence of the welfare analysis can be best illustrated graphically.

Figure 1: Welfare effects of the new banana market regime
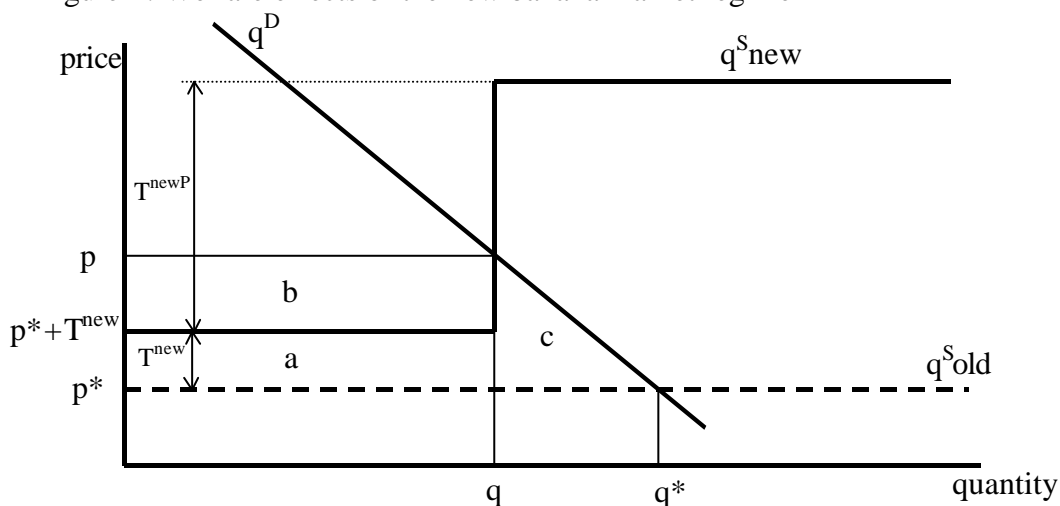
Source: Hermann (1999, p. 70).

[5] Other studies, which focus either on a single country (Germany) or on the aggregate EU, are Herrman (1999), Borrel (1999) and Messerlin (2001).

Assuming free trade and totally price elastic exports (small country assumption) the export supply curve is given by the horizontal line (q^{S}old), which is intersected by the demand curve (q^D) at the world price level p*. Of course, from the perspective of the country in question these exports of the banana suppliers have to be regarded as imports. In the absence of own production, the imported bananas are equal to domestic consumption. Suppose now that the new banana market regime as described above is introduced. An import tariff T^{new} is imposed on import quantities up to an amount of q. On quantities in excess of this quota q a prohibitive tariff (T^{new} + T^{newp}) is imposed. This results in a double-kinked supply curve (q^{s}new) with a vertical part at q. The new equilibrium is given at the intersection of the demand curve (which is assumed as stable) and the new supply curve, resulting in a new price p and a new quantity q. As one can see the price increase from p* to p is not only due to the tariff imposed but also to the "artificial scarcity" of the banana supply as a result of the quota that enables the banana traders to sell their goods at a higher price than under a pure tariff regime. As regards the welfare effects resulting from this regime shift, three differently affected groups have to be distinguished.

Consumers obviously incur a welfare loss (forgone consumer surplus) as a result of the price increase. It corresponds to the area (*a* + *b* + *c*) in Figure 1 and can be formally expressed as

$$\ddot{A}W_C = \int_p^{p*} q^D(p)dp \qquad (1)$$

where ΔW_C = Welfare effect on consumers, $q^D(p)$ = banana demand function, p = actual price after the regime shift, p* = hypothetical price without regime shift

The international banana traders gain as the quota system makes bananas even more scarce than under a pure tariff regime. The welfare effect on the banana traders (quota rent: ΔW_T) is given by the area (*b*) in Figure 1. Formally, we have

$$\ddot{A}W_T = [p - (p*+T^{new})]\, q \qquad (2)$$

Finally, we have to consider the effect on the *budget of the country's government (a)*. Compared with the situation under free trade the additional tax revenues amount to

$$\ddot{A}W_G = T^{new}\, q \qquad (3)$$

Thus the *resulting aggregate welfare effect* (ΔW) is a typical deadweight loss (area c in Figure 1) and amounts to the sum of these three components (of which ΔW_C has a negative sign):

$$\Delta W = \Delta W_C + \Delta W_T + \Delta W_G. \tag{4}$$

Whether additional tariff revenues resulting from the new regime are actually welfare gains for the individual EU member states or the EU as a whole is a subtle question. In general, tariff revenues of the EU member states are part of the EC's own budget resources and therefore transferred directly to the EU budget. However, the total gross contribution of the EU Member States on average has a ceiling of 1.27% of GNP. If tariff revenues increase, the residual position, namely the transfers from GNP resources can be decreased accordingly. Thus, we regard additional tariff revenues as a result of the EC's new banana import regime as welfare gains of the individual EU member states.

4   Results of the Estimation

For each EU member state we apply the partial equilibrium approach outlined above to evaluate the welfare effects on consumers, traders and the government. First, we estimate banana demand functions for each country. Then we predict the development of banana prices under the hypothetical scenario of no regime shift, mainly based on trend projections. This yields us the variables, we need to calculate the welfare effects according to equations (1), (2), (3) and (4), compared with the situation under the old regime. A more detailed description of the methodology and a description of the data used is given in the appendices A and B. Table 3 summarizes the key results of our estimation.

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Table 3: Welfare Effects of the EU's Common Organization of the Market in Bananas over the period 1993-1998 (mill. ECU)

	Consumers (1)	Traders and Producers (2)	National budgets (3)	Total (1+2+3)
Free trade countries				
Austria	-84.07	29.25	41.50	-13.33
Finland	-77.18	38.21	27.21	-11.78
Germany	-979.87	107.45	636.13	-236.30
Sweden	-108.42	45.67	52.49	-10.26
Total	-1,249.78	220.57	757.54	-271.67
Tariff imposing countries				
Belgium-Luxembourg	-135.61	86.42	-3.36	-52.54
Netherlands	-214.04	257.79	-75.34	-36.60
Denmark	-83.17	79.72	-16.71	-20.17
Ireland	-33.41	30.53	-1.56	-4.44
Total	-466.22	454.45	-96.97	-108.75
ACP supplies countries				
Italy	113.99	-69.86	-21.56	22.55
United Kingdom	166.31	-93.85	-71.59	0.85
Total	280.28	-163.70	-93.17	23.41
Countries with own production				
France	146.06	135.91	32.83	314.80
Greece	22.75	-4.01	15.93	34.65
Portugal	-352.74	236.22	72.28	-44.22
Spain	211.91	-321.65	93.88	-15.84
Total	28.00	46.46	214.93	289.40
EU-15 [1]				
In absolute terms	-1,407.71	557.77	782.34	-67.59
Relative to GDP [in %][2]	-0.01874	0.00741	0.01043	-0.00090

[1] 1993 and 1994: EU-12, 1995 to 1998: EU-15 (incl. the new members Austria, Sweden and Finland).
[2] relative to GDP of 1998

To sum up, we can state that among the groups of countries the biggest losers are the former free trade countries, led by Germany. Their total loss amounted to ECU 271.7 mill. The tariff imposing countries belong to the losers as well; their aggregate welfare decreased by ECU 108.8 mill. The ACP supplied countries achieved a small gain of some ECU 23.41 mill. The big winners are the formerly most severely regulated countries with own production, led by France. Their total welfare gain amounts to ECU 289.4 mill.

From an aggregate EU view, the cumulative welfare loss over the period 1993 to 1998 amounts to ECU 67.6 mill. or 0.00090% of GDP of 1998. This very small value is not surprising because of the quantitatively negligible weight of the bananas in the total consumption of an industrialized economy.[6] Considered by the differently affected groups,

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[6] In a recent paper, Borrell (1999) estimated the aggregate loss in the European Union as being much higher. He found a loss of US$ 2 billion in consumer welfare per year. This loss is significantly higher than the results of our study (ECU 234.7 million per year) because Borrell compared the EU banana regime with a situation of free trade for the whole European banana market. Similarly, Messerlin (2001) in a multi-sector study, finds potential

consumers are the losers of the new banana market regime; they incurred a total aggregate welfare loss of ECU 1,407.7 mill. The winners of the banana market policy are the traders and producers. Their gains amount to ECU 557.8 mill. over the total period. On average, national budgets were also favored by the new banana market policy; their additional tariff revenues made up ECU 782.3 mill.

The Common Organization of the Market in Bananas was slightly modified in 1998. In order to roughly estimate the welfare impact in 1999 and 2000, we can use our estimates for 1998 and assume that the slight tariff reduction by 25% for within quota-imports from non-traditional ACP and third-country suppliers mitigated the negative welfare impact by an equivalent amount (25%). The cumulative welfare loss over the whole history of the COMB (1993 to 2000) for the aggregate EU rises to some ECU 100 million (or cumulatively – 0.0012% of EU-GDP in the year 2000). Similar calculations for the three differently affected groups suggest a cumulated welfare loss for European consumers of ECU 2073 mill. over the period 1993 to 2000, a gain to traders amounting to ECU 937 mill. and a gain to EU governments of some ECU 1036 mill. Thus, although the aggregate deadweight loss is negligibly small, a considerable redistribution of welfare from the consumers to the state and the traders has taken place. Additionally a welfare redistribution within the EU took place: the formerly most liberalized countries lost whereas the formerly severely regulated countries gained.

5 Conclusions

Due to the formerly heterogeneous banana market the welfare effects of EU's Common Organization of the market in bananas vary widely among EU member states. All previously 'free trade' countries were net losers from the new banana regimeas are countries that used to impose tariffs ACP supplied countries were less severely affected by the banana market policy. We find that their aggregate welfare change is negative but small. In countries which have their own production the situation is different. France and Greece benefitted from the banana market regime shift, whereas the two other banana-producing countries - Portugal and Spain - lost marginally.

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net welfare effects of fully liberalizing the banana market, amounting to ECU 582 mill. for the year 1990. In contrast to Borrell and Messerlin we compared the welfare in the current situation with the old external trade

Considered from an aggregate European view, the results show that the aggregate welfare loss by the consumers in the EU totals ECU 2073 mill. over the period 1993 to 2000. The gain for the international traders on the EU market and the EU producers amounts to ECU 937 mill. The national budgets of the EU member states' gained ECU 1036 mill. due to the increase in tariff income. Consequently, in total about ECU 100 mill. (or 0.001% of GDP) welfare were lost in the European Union, due to the CMOB which was not in conformity with WTO law from the beginning.

Despite some modifications of the regulation its discriminatory nature will remain in force for a long time. The European Union has only recently, after a costly detour of over seven years, modified its banana import regime to be acceptable to the USA and Ecuador. On the one hand the EU was finally inclined to give in because she was the losing party in the mini-trade war with the USA (see Breuss, 2001), on the other hand the EU wanted to signal their good will at the eve of a new WTO trade round. The banana case was only one of several transatlatic trade disputes between the EU and the USA. Other cases, which have not been resolved yet, involve the "hidden" export promotion by the US Foreign Sales Corporations (FSC), the EU's import ban on meat of hormone treated animals, and most recently, the introduction of tariffs by the USA in order to protect the domestic steel industry.

regimes and estimated the welfare policy induced changes. In this way we identified some winners from the regime shift, which partly compensated for the welfare losses.

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Appendices

Appendix A: Methodology

The analysis in section three shows that the key ingredients for calculating the welfare effects are p, q p*, q* and T^{new}. p and q are given by the actual development after the regime shift, T^{new} is the tariff imposed by the new regime. The variables, we have to determine in our ex-post analysis are p* and q*, the quantity and price under the hypothetical situation without a regime shift. The heterogeneity of the countries' prior banana trade regimes de facto precludes the application of a standard procedure for all countries to calculate the welfare effects. Here we only sketch the implementation for the simplest case of the free trade counties. A detailed description of the methodology used is given in Badinger, Breuss and Mahlberg (2001) (available at http://fgr.wu-wien.ac.at/institut/ef/wplist.html). In a first step, we estimate banana import demand functions q^D. Thereby, we use a log-linear demand function that uses the price as basic explanatory variable. The second step involves forecasting the hypothetical price p* and quantity q* that would have materialized if no regime shift had taken place. As an approximation we forecast the price under the old regime based on "plausibility considerations" mainly by using a linear trend technique. In many of the cases the situation is "quite clear": that means one can see a clear effect due to the regime shift, e.g. constant or slightly decreasing prices up to 1992 and a sharp price increase after the introduction of the new regime. However, one has to bear in mind that this ad hoc technique can only be regarded as approximation, especially in cases where the situation is not that clear. The hypothetical demand under the situation of no regime shift is then simulated using the estimated import demand function from step one and the forecasted price q*. Finally, the actual values p and q are adjusted for exchange rate changes and we have all variables (p*, q*, q, p and T^{new}) to calculate the welfare effects ΔW_C, ΔW_T, ΔW_G and the deadweight loss ΔW

according to equations (1), (2), (3) and (4). Hence, our welfare changes are the deviations of the actual developments from a baseline scenario. This baseline is not a free trade scenario but the extrapolation of the past trade regimes prior to 1993.

Appendix B: Data

As data from Eurostat turned out as useless – they suffer from an "Antwerp effect", i.e. imports shipped over the harbor of Antwerp are registered as Belgian imports – we referred to the UN World Trade Databank (COMEXT-database, all data taken from the homepage of the Austrian Institute of Economic Research). It provides data on banana imports classified by origin, which enabled us to calculate the according import-quantities/values of Dollar, EU, traditional ACP and non-traditional ACP bananas. Our time series start with 1979, the latest year covered is 1998. Although not without problems and implausibilities, these data turned out to be the best source available. To complete and check our data, a useful source has been the FAO database (FAOSTAT online: http://www.fao.org/). One should also note that the definition of the bananas in the UNO and FAO databases do not exactly coincide with the definition in the regulation. For a detailed description of the data set and the problems involved we refer the reader to Badinger, Breuss and Mahlberg (2001). Exchange rate data were taken from International Financial Statistics and the Commission of the European Communities. GDP data are from International Financial Statistics.