Agricultural Import Surges in Developing Countries: Exogenous Factors in their Emergence

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Content

Annex

1 Introduction

As a pragmatic definition applied throughout this paper, an import surge is considered a situation in which the quantity or value of imports suddenly exceeds a "normal" level. This somewhat loose concept leaves questions as to how "suddenly", "normal" and "excess" should be defined precisely, and whether a conceptual distinction needs to be made between symmetric surges (a fall after an increase in imports or vice versa), and asymmetric surges (an increase in imports which remains at a similar level thereafter). It also leaves open the question of whether imports are the right reference, or if instead net imports should be the relevant criterion.

Thus, the prevalence of import surges does not allow for value judgments without any additional information: import surges are not inherently "good" or "bad" phenomena with respect to development policy goals such as food security and poverty reduction. In the case of drastically reduced domestic supply, e.g. for climatic reasons, import surges may contribute significantly to food security and may be a proof of the successful integration of national markets in an international environment. On the other hand, an import surge resulting from a transitory exogenous factor (e.g. policies or climate in third countries) may result in low domestic prices and drive local suppliers out of the market. This, in turn, may affect food security negatively at a later stage.

Many factors can contribute to the genesis of import surges. Some of them clearly originate in the importing country. These include domestic supply instability because of climatic or political reasons, unilateral changes in trade policies, or changes in the exchange rate policy of the importing country. Others clearly stem from third countries, for example changes in agricultural policies or supply volatility for other reasons. For some factors, the mapping to domestic or exogenous origin is equivocal: an importing country may change its domestic trade regime due to external reasons such as the implementation of trade liberalization agreed upon in the WTO, the implementation of Structural Adjustment Programs (SAP) or membership in a Regional Trade Agreement (RTA). In such cases countries could escape the policy adjustment by not belonging to the WTO or the respective RTA, or not accepting a SAP. Higher ranking policy aims may, however, dominate aspects of agricultural policy.

This paper is part of a larger FAO project which comprehensively analyzes various aspects of agricultural import surges in developing countries. Therefore, it does not cover the areas of definition and measurement of import surges nor does it cover domestic factors, including policy changes resulting from RTAs, SAPs or the implementation of WTO agreements. Instead, the focus is on exogenous factors. After a few conceptual considerations in Section 2, Section 3 analyzes to which extent policies of third countries may contribute to import surges. Section 4 then analyzes nonpolicy factors including supply volatility or sudden devaluations of the currency in third countries. In Section 5, policy responses to observed import surges are highlighted and Section 6 draws some conclusions.

2 General Remarks

Whether policy or nonpolicy factors, third country factors usually affect importing countries via trade quantities of these third countries and their impact on trade prices. In a simple economic model, the relevant effect would be the change in the world market price, which in turn may affect the importing country's domestic prices and thus net imports. As will be shown below, the effect of many third country factors on average world market prices is probably low. But in the real world trade happens on a bilateral base on imperfect markets. Markets are not always fully integrated due to high transportation costs and established trade relations. In such cases, the effect of any changes in the trade of close trading partners on bilateral trade prices may be significantly higher than their effect on average world market prices. For example, the effect of a sudden devaluation of the Brazilian currency may affect import prices of Argentina, a direct and important trading partner, more than those of Sudan. This distinction between average and specific trade price effects should be kept in mind throughout this paper.

An additional aspect which strongly impacts the effectiveness of trade prices on imports is the degree of price transmission from border to domestic prices. Due to various factors such as policy of the importing country and marketing structure, price transmission may differ. Trade price changes which result in strong import surges in one country may affect another country much less. Issues of price transmission in the importing country are not dealt with in this paper.

An initial assessment of which third countries could have significant effect on the development of world market prices should look at which third countries have the potential to impact on world market prices due to their size and degree of world market integration. To this purpose, Tables 1 and 2 (see Annex Tables 1 and 2 for more products) display the most important countries for exports and imports of aggregated product groups.

Table 1: Largest Exporters and their Share in World Exports (Average 1994-2003)

Product	Five Largest Exporters & Export Share					Cumulative Share (CR_5)
Cereals	USA	EU-15	Canada	Argentina	Australia	
	38.3%	10.1%	9.4%	8.4%	8.4%	74.6%
Wheat (incl. flour)	USA	Canada	Australia	EU-15	Argentina	
	27.9%	16.5%	14.1%	14.1%	8.2%	80.8%
Rice	Thailand	Viet Nam	India	USA	China	
	28.2%	14.3%	12.9%	12.6%	8.5%	76.5%
Maize	USA	Argentina	China	SAF	Hungary	
	68.1%	13.1%	10.0%	1.9%	1.7%	94.8%
Sugar (raw equiv.)	Brazil	EU-15	Thailand	Australia	Cuba	
	23.9%	14.9%	10.3%	10.3%	8.1%	67.5%
Poultry meat	USA	Brazil	EU-15	China HK	Thailand	
	40.4%	15.2%	14.7%	9.0%	5.6%	84.9%
Bovine meat	Australia	USA	EU-15	NZ	Brazil	
	20.8%	17.1%	13.9%	8.2%	7.8%	67.8%
Pig meat	EU-15	Canada	USA	China	Brazil	
	31.5%	16.6%	15.8%	10.5%	6.3%	80.7%
Butter	NZ	EU-15	Australia	Ukraine	CZ	
	37.6%	24.3%	12.5%	3.6%	2.9%	80.8%
Milk powder	EU-15	NZ	Australia	USA	Argentina	
	30.2%	24.4%	13.7%	4.4%	4.0%	76.6%
Oilseeds	USA	Brazil	Canada	Argentina	Paraguay	
	46.6%	18.1%	8.9%	8.3%	3.2%	85.1%
Pulses	Canada	China	Australia	Myanmar	USA	
	26.0%	11.9%	10.6%	10.2%	8.6%	67.4%
Vegetable oils	Malaysia	Indonesia	Argentina	EU-15	USA	
	31.7%	15.0%	13.5%	7.6%	6.6%	74.4%
Soybean oil	Argentina	Brazil	USA	EU-15	Malaysia	
	37.2%	23.1%	13.3%	12.8%	2.1%	88.5%
Sunflower oil	Argentina	Ukraine	USA	EU-15	Hungary	
	49.1%	14.0%	10.0%	8.1%	3.5%	84.6%
Palm oil	Malaysia	Indonesia	PN Guinea	Singapore	China HK	
	63.6%	25.9%	2.0%	1.6%	1.0%	94.1%
Cotton Lint	USA	Uzbekistan	Australia	EU-15	Turkmenistan	
	30.5%	15.0%	9.9%	3.4%	3.1%	62.0%
Coffee	Brazil	Colombia	Viet Nam	Indonesia	Guatemala	
	21.2%	11.7%	10.1%	6.3%	4.7%	54.0%
Bananas & plantains	Ecuador	Costa Rica	Colombia	Philippines	Guatemala	
	31.4%	16.0%	12.3%	11.2%	6.1%	76.9%
Weighted average						80.3%

Source: FAO (2005a), own calculations.

Table 2: Largest Importers and their Share in World Imports (Average 1994-2003)

Product	Five Largest Importers & Import Share					Cumulative Share (CR_5)
Cereals	Japan	China	South-Korea	Mexico	EU-15	
	12.3%	5.9%	5.6%	5.2%	4.3%	33.3%
Wheat (incl. flour)	Brazil	Japan	Egypt	EU-15	Algeria	
	6.7%	5.7%	5.3%	4.6%	4.6%	26.8%
Rice	Indonesia	EU-15	Iran	Brazil	Philippines	
	8.8%	4.4%	4.1%	4.0%	3.9%	25.2%
Maize	Japan	S-Korea	China	Mexico	Egypt	
	23.4%	11.8%	8.6%	6.8%	5.2%	55.8%
Sugar (raw equiv.)	Russia	EU-15	USA	Japan	South-Korea	
	12.1%	5.7%	5.4%	4.6%	4.1%	31.9%
Poultry meat	Russia	China HK	Japan	China	EU-15	
	15.9%	15.0%	12.5%	8.6%	6.2%	58.3%
Bovine meat	USA	Japan	Russia	EU-15	Mexico	
	21.3%	15.9%	11.3%	7.6%	5.1%	61.3%
Pig meat	Japan	Russia	USA	China HK	Mexico	
	27.1%	16.9%	12.1%	6.3%	5.8%	68.2%
Butter	RUS	EU-15	Egypt	Mexico	Morocco	
	16.9%	13.4%	6.8%	4.5%	3.6%	45.1%
Milk powder	Algeria	Mexico	Brazil	Philippines	China	
	8.0%	7.0%	5.8%	5.7%	5.5%	31.9%
Oilseeds	EU-15	China	Japan	Mexico	S-Korea	
	35.0%	18.4%	13.3%	8.3%	2.9%	77.8%
Pulses	EU-15	India	Pakistan	Egypt	Bangladesh	
	24.8%	16.0%	4.2%	4.0%	2.8%	51.8%
Vegetable oils	EU-15	China	India	USA	Pakistan	
	14.4%	11.3%	10.4%	5.5%	4.4%	46.0%
Soybean oil	China	Iran	India	Bangladesh	China HK	
	15.7%	9.6%	8.4%	7.2%	4.6%	45.4%
Sunflower oil	EU-15	Algeria	India	Russia	Iran	
	9.4%	8.7%	7.5%	7.5%	7.2%	40.4%
Palm oil	EU-15	India	China	Pakistan	Japan	
	17.3%	16.9%	13.4%	8.5%	3.1%	59.3%
Cotton Lint	EU-15	China	Indonesia	Turkey	Thailand	
	13.9%	11.9%	9.2%	6.4%	6.0%	47.3%
Coffee	EU-15	USA	Japan	Canada	Poland	
	45.4%	23.5%	7.2%	3.2%	2.3%	81.7%
Bananas & plantains	USA	EU-15	Japan	Russia	Canada	
	32.7%	26.8%	7.5%	4.2%	3.3%	74.5%
Weighted average						46.0%

Source: FAO (2005a), own calculations.

Tables 1 and 2 show that concentration in world agricultural trade is much more pronounced on the export than on the import side. For the agricultural products covered by this analysis, the share of the 5 largest exporters (CR_5) is, on average, about 80%. For individual product groups this varies between 54% for coffee and about 98% for soybeans. For some product groups world exports are clearly dominated by few developed economies. This is for example for cereals (except rice), meat, and dairy products. For others, such as vegetable oils, coffee and bananas, world exports are dominated by few developing countries.

Table 2 shows that world agricultural imports are much less concentrated than exports. On average, the CR_5 is at 46%. For different product groups the CR_5 ranges from 25% (rice) to almost 90% (sunflower oil).

Conclusions from this analysis with respect to the importance of different players for world markets need some additional qualification. Probably the most important is that countries with a large domestic market and a large potential for integration in international trade but only little current trade integration, may not appear in Tables 1 and 2, but any changes on domestic markets may have strong impacts on world markets in the future. For example the appearance of China, India and Russia in Tables 1 and 2 is limited, but changes in their production and consumption may result in huge effects on trade volumes.

An additional weakness of the information in Tables 1 and 2 is that some countries may serve as a transit rather than a country of primary origin or final destination. For example Hong Kong appears as one of the 5 most important poultry importers and exporters, which does not reflect the size of its domestic market, but rather transit trade.

In any case specific analysis of import surges Tables 1 and 2 may be built for the respective product and country. What are the most important trading partners for the product concerned and to what extent could factors originating in these countries have contributed to any import surges?

3 Determining Factors of Import Surges: Policies of Third Countries

3.1 General Remarks

An important aspect of whether third countries' policies are considered causal factors in the emergence of import surges is the choice of the reference situation. Is it the simple absence of any third countries or the full trade integration of these countries?

Policies of many countries tend to more or less isolate their national markets from international price signals. For example an intervention price system together with a variable export subsidy bridging the gap between intervention price and world market price may result in very stable net exports, as long as domestic supply and demand are stable. Such a policy would therefore have an impact on the world market price level, but not a direct impact on the volatility of the world market price, and thus not a direct impact on import surges (with a domestic supply or demand shock, however, a fixed domestic price would export the instability). With respect to import

surges, such third countries' policies thus result in a situation which is similar to the nonexistence of these countries.

If, however, full trade integration is considered the relevant reference, such policies clearly are a relevant factor in causing import surges. This is because the isolation from international markets prohibits the country's domestic market from acting as a buffer for world market price volatility. For example with a major harvest in other countries, world market prices would decline more than in the case of full trade integration, because domestic demand would not increase and supply would not decrease in countries which are isolated from world markets. This may contribute to import surges.

For the purpose of this paper, full trade integration is chosen as a reference. Policies which result in an isolation of domestic markets from international markets are therefore considered to contribute to import surges which result from world market price volatility.

3.2 Direct Export Policies

3.2.1 Export Subsidies

The incidence of export subsidies in agriculture is continuously declining since their peak in the 1980s before the conclusion and implementation of the Uruguay Round which limited the use of export subsidies effectively for the first time.

Table 3 presents export subsidy bindings agreed upon in the Uruguay Round as well as for the implementation period until the most recent data available.

Table 3: Shares of Selected Countries in Total Value of Agricultural Export Subsidies (WTO Limit and Annual Expenditures)

	WTO limit		Expenditures		
	Uruguay Round base	2004	1995	1998	2002*
Total Mill. US $	23,003	13,065	7,7112	6,641	3,092
EU		70.9%	88.5%	87.9%	89.8%
USA		4.5%	0,4%	2.2%	1.0%
Switzerland		2.7%	6.3%	4.4%	6.2%
Others		21.8%	4.9%	5.5%	3.0%

* Notifications for all countries were not yet available. Among those countries where no notification had been submitted, only Switzerland and South Africa had applied export subsidies in the previous year. Expenditures of these countries are therefore based on 2001 data.

Sources: Bank Al-Maghrib (2004), Central Bank of Tunisia (2004), European Central Bank (2004), GATT (1994), United Nations Statistics Division (2005), WTO (2002, 2005), own calculations.

In 2002 worldwide expenditures for export subsidies were at US$ 3.1 billion, which is only about 24% of the current WTO limit and 13% of the Uruguay Round base period. Export subsidies have mainly been a phenomenon in EU agricultural policy, during the base period for reduction commitments and even more so since that period. The EU accounts for 71% of current export subsidy bindings and about 90% of export subsidies paid in 2002 worldwide.

In order to get an impression of the relevance of export subsidies for global markets for agricultural products, Table 4 presents the development of product-specific worldwide budgetary outlays for export subsidies between the base period of the Uruguay Round and 2002.

Table 4: Expenditures for Export Subsidies since the Uruguay Round Base Period (in Mill. US$)

	UR base	1995	1998	2002*	2002 in % of UR base period	2002 in % of 2001-2003 world trade
Total	**23,003**	**7,712**	**6,641**	**3,092**	**13.4%**	
Wheat and wheat flour	4,688	165	548	134	2.9%	0,9%
Rice	231	54	28	21	9.1%	0,3%
Coarse grains	2,522	407	839	158	6.3%	1,3%
Oilseeds	122	0	0	0	0.0%	0,0%
Vegetable oils	221	81	1	0	0.0%	0,0%
Butter and butter oil	1,905	348	315	515	27.0%	39,9%
Skim milk powder	798	234	217	181	22.7%	8,9%
Sugar	1,704	496	889	277	16.3%	3,1%
Cheese	911	629	219	253	27.8%	5,8%
Other milk products	1,841	1264	1055	606	32.9%	11,3%
Bovine meat	2,608	1943	714	279	10.7%	2,5%
Pig meat	435	131	393	14	3.2%	0,2%
Sheep meat	45	6	1	0	0.0%	0,0%
Poultry meat	273	164	103	88	32.2%	1,1%
Eggs	91	20	21	5	5.5%	0,7%
Wine	91	77	32	18	19.8%	0,2%
Fruit & vegetables	791	163	94	20	2.5%	0,0%
Tobacco	169	25	1	0	0.0%	0,0%

* Notifications have not yet been submitted by all countries.

Sources: Bank Al-Maghrib (2004), European Central Bank (2004), GATT (1994), United Nations Statistics Division (2005), WTO (2002, 2005), own calculations.

Table 4 shows that export subsidies for all products were significantly below UR base period levels in 2002. Only for dairy products and poultry meat were export subsidies around 30% of the UR base, for all other products they were significantly below that level, at about 13.4% of the UR base on average.

As a first indicator for the effect of export subsidies on world market prices, their share in the product-specific value of world trade is presented in the last column of Table 4. Only for coarse grains, bovine meat, pig meat, sugar and dairy products was this share above 1%. Products for which export subsidies make the largest shares of the value of world trade are butter with 40%, and skim milk powder (SMP), cheese and other milk products between 6 an 11%.

The OECD (2002) has simulated the effects of an elimination of export subsidies (and the necessary reduction of domestic support to allow for such an elimination) based on the partial equilibrium agricultural sector model AGLINK (see also Table 8 below). The results reflect the high levels of export subsidies for dairy products and rather insignificant levels for other products presented in Table 4. It is only for dairy products that the elimination of export subsidies is

projected to have a significant positive effect on world market prices. For these products price effects projected for 2005 vary between 6% for SMP in case of a weak € and 30% for butter in case of a strong Euro. For beef, cereals and oilseeds the effects are rather small.

Do export subsidies contribute to the emergence of import surges? Long-term stable export subsidies would not result so much in trade volatility, but rather in a higher market share of the subsidizing country. But usually export subsidy rates vary with world market prices. For example for dairy products, the EU needs to get certain SMP and butter quantities out of its domestic market to maintain intervention prices. Without any changes in intervention policy, these quantities are rather stable, but at low world market prices higher export subsidy rates are required to bridge the gap between the intervention price and world market price. The varying character of export subsidies applied in such a manner not only contributes to a lower world market price level, but also to a higher volatility of world market prices because it insulates the EU market from world market price movements. This may contribute to surge-like phenomena in third countries.

Due to their low level, export subsidies are not very likely to actively contribute to import surges on a global level: dairy products seem the only product group for which the effect of export subsidies on world markets is significant. Yet some care must be taken with respect to such a conclusion based on an equilibrium model analysis: model results reflect average annual world market price effects. At a specific point in time, for a specific destination, such effects may be stronger (FAO, 2005b: 4). EU export subsidies for most products vary throughout the year. Decisions on export subsidy rates/tenders in the EU are taken by the respective EU management committees in light of the domestic and international market situation. Although export subsidy tenders are not destination specific, the period for which export subsidies apply may largely determine the destination because specific countries act as buyers in that period.

Export subsidies are therefore probably a rather weak contributing factor to import surges in developing countries. This is because budgetary outlays for export subsidies have declined significantly over the last decade and are not very relevant for price formation on most international markets. Dairy products may be an exception, and additional exceptions may result from the concentration of export subsidies on specific destinations and time windows. In the long run, however, export subsidies will probably be phased out during the implementation of the results of the current WTO round, and thus become irrelevant as determining factors of import surges.

3.2.2 Export Credit Subsidies

If conditions of public or publicly financed export credits are more favorable than those which would prevail under market conditions, they have an effect which is similar to that of export subsidies. Such favorable conditions could consist of reduced interest rates or longer terms. Therefore, export credits could play a role in the emergence of agricultural import surges as well as export subsidies.

As the effect of subsidized export credits is similar to export subsidies, they are under discussion in the WTO. The August 2004 agreement on a framework for modalities provides a rough approach to distinguish between "green" and prohibited export credits.

Data availability on export credits is weak as they are not subject to any notification requirements in the WTO. Therefore, the latest figures available stem from OECD (2000) calculations for members of the Export Credit Arrangement. In addition to the total export credits granted, the OECD study assesses the subsidy elements within these export credits from the various relevant credit parameters, e.g. interest rates, terms, fees and payment modalities. Some of these results are summarized in Table 5 below.

Table 5: Agricultural Exports, Export Credits, and Subsidy Elements within these Export Credits Compared to Export Subsidies 1998

	Ag. exports	**Export credits**	**Subsidy shares of export credits (SSEC)**			**Export subsidies (ES)**		**SSEC/ES**
	Mill. US$	Mill. US$	Mill. US$	% of ex. c.	% of ex.	Mill. US$	% of ex.	%
Australia	10,501	1,553	5.1	0.3	0.0	1	0.0	510.0
Canada	17,555	1,108	13.6	1.2	0.1	0	0.0	
EU	57,028	1,254	23.8	1.9	0.0	5,968	10.5	0.4
USA	57,395	3,929	258.0	6.6	0.4	147	0.3	175.5
Others	9,749	65	0.1	0.2	0.0	89	0.9	0.1
Total	152,228	7,909	300.6	3.6	0.2	6,205	4.1	4.8

Sources: OECD (2000), own calculations.

Table 5 shows that Australia, Canada, the EU and the USA are the major players in export credits and accounted for more than 99% of total export credits in 1998. In terms of subsidy elements within export credits, the US accounted for a share of 86% in that year. Although subsidy elements in export credits play a more important role than direct export subsidies for some countries such as Canada, Australia and the US, their worldwide total in 1998 was far below total export subsidies granted in that year as well as export subsidies granted since (see above).

The low amount of total subsidy elements in export credits suggests their relevance in the emergence of import surges to be even smaller than that of export subsidies. As for export subsidies, however, their high impact during specific time windows for specific destinations and products may be higher (FAO, 2005b: 6). This is unlikely for many developing countries, as most export credits are granted for OECD destinations. In the period 1995 to 1998 almost 60% of export credits were received by OECD countries, whereas only 9% were received by Net Food Importing Developing Countries and 0.2% were received by Least Developed Countries (OECD, 2002).

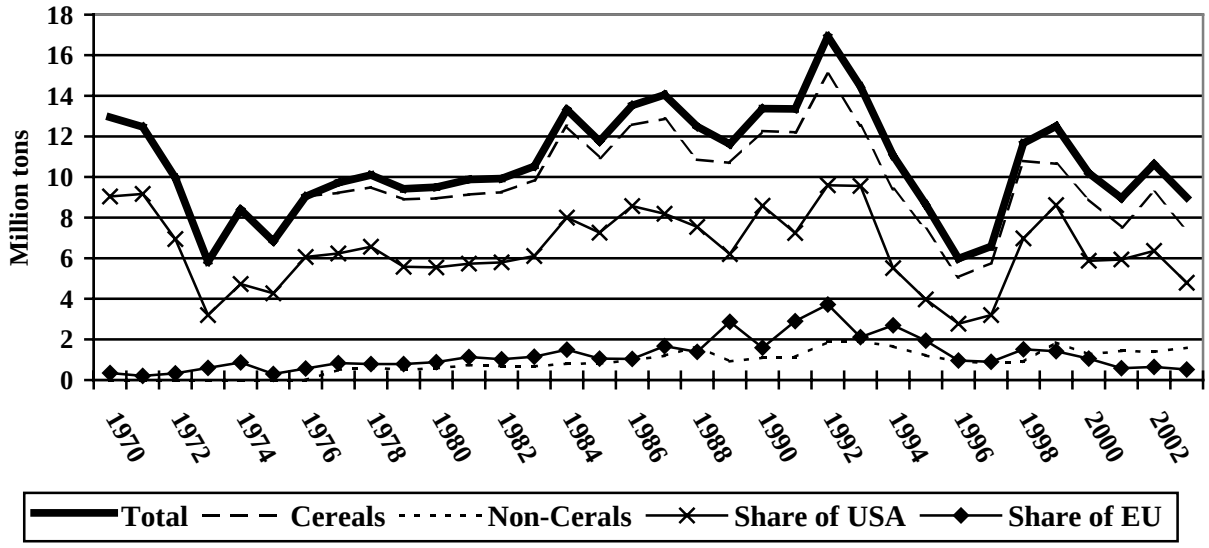
3.2.3 Food Aid

International food aid includes various forms of providing food commodities among countries free of charge or under highly concessional terms. Project food aid, program food aid and emergency

food aid can be distinguished with emergency food aid accounting for more than 50% of the total (FAO, 2002).

The motivation for food aid in the donor country is often twofold, including development objectives as well as using food aid as an internationally acceptable outlet for surplus production. Due to the ambiguity of distinguishing clearly between food aid and commercial export interests, international rules on food aid have been part of various international agreements like the Uruguay Round Agreement on Agriculture, the Food Aid Convention, and the FAO Principles of Surplus Disposal. Furthermore, the Framework for Modalities from August 2004 foresees a further strengthening of disciplines on food aid in the WTO. Graph 1 displays the volume of international food aid over the period 1970-2003.

Graph 1: Development of Food Aid (1970-2003)

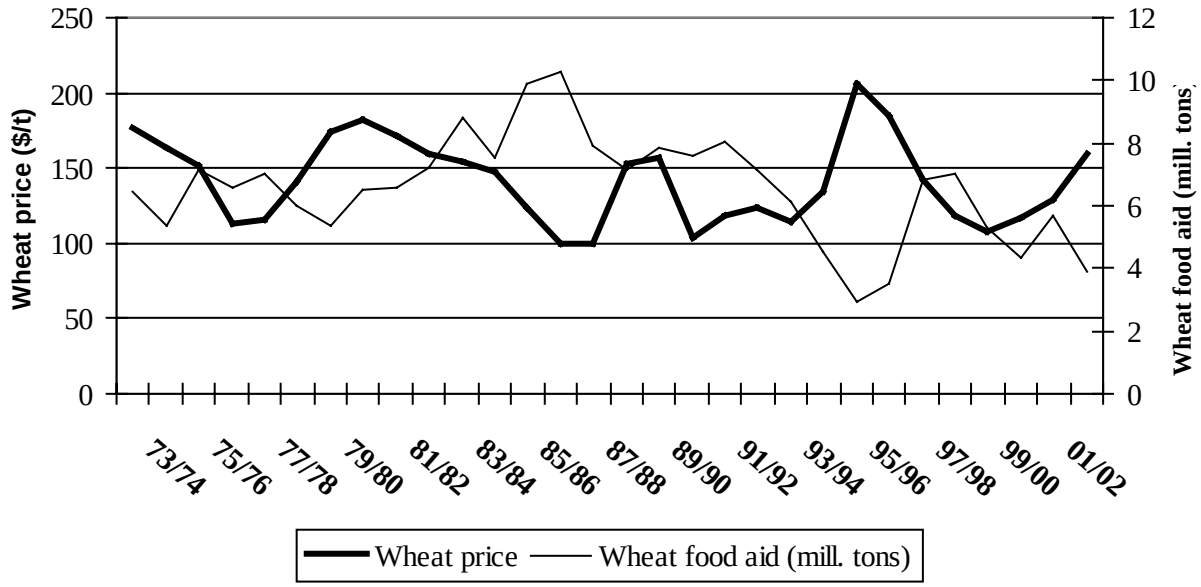


Sources: FAO (2005a), own calculations.

Total food aid varied considerably between 1970 and 2003 with a peak of almost 17 million tons in 1992 and minimum of about 6 million tons in 1973 and 1996. Cereals account for more than 90% of total food aid, with the US granting a 40 to 60% share of the total.

The ambiguity in the motivation of food aid results in nonoptimal targeting with respect to development issues. An example for this is the high prevalence of food aid in periods of low world market prices. This is because of the higher domestic market pressure in the donor countries and the lower opportunity cost of food aid in such a situation in contrast with the needs of the food aid receiving countries, which are relatively more in need when world market prices are high. The anticyclical pattern of the international price level and food aid is presented in Graph 2 for wheat.

Graph 2: Food Aid of Wheat and International Wheat Price (1973/74-2002/03)



Sources: FAO (2005a), OECD (2004), own calculations.

How could food aid impact on import surges? This depends on whether food aid is included in the definition of imports for the analysis of import surges or whether only commercial imports are looked at. If food aid is included in the concept, the mechanism is clear: a situation with suddenly increasing food aid, for example as emergency aid, would easily establish an import surge. If only commercial imports are looked at, food aid can also have an impact. Food aid can replace commercial imports, and the elimination or reduction of food aid can therefore result in an increase in commercial imports, which could establish an import surge.[1] Table 6 displays average food aid for 2002/2003 for selected products relative to total imports of developing countries.

Table 6: Food Aid Relative to Total Imports of Developing Countries (2002/2003 Average)

Product	Food aid (tons)	In % of total imports of developing countries
Total cereals	7,712,876	7.2%
Coarse grains	1,155,254	1.8%
Wheat and wheat flour	4,434,663	9.4%
Rice	1,463,061	25.2%
Pulses	443,737	16.0%
Sugar	79,523	0.4%
Vegetable oils	428,219	2.4%
Skim milk, evaporated	90,760	431.0%[a]
Meat and products	11,944	0.1%

[a] Data from the trade and food aid databases are not consistent for SMP.
Sources: FAO (2005a), own calculations.

[1] For a discussion of the "additionality" of food aid see FAO (2005c).

Table 6 shows that food aid accounts for a significant share of total food imports of developing countries. For total cereals this share is 7.2% and for rice it is more than 25%. Taking into account that the bulk of food aid goes to a few developing countries, it seems likely that food aid has the potential to heavily impact commercial product trade in some cases.

3.2.4 State Trading Enterprises

In some countries external trade is controlled by state trading enterprises which either have the monopoly to export and import certain products themselves or are able to control external trade by the issuing of import and export licenses. Rationales behind the installation of such agencies by governments are manifold. They can for instance be intended to use their monopoly power to attract the producer surplus of exporting farmers or to secure the supply of basic food commodities by policies such as stockholding, as it has been the case with the Food Corporation of India (FCI). Sudden changes in the policies of such agencies can have strong effects on world markets and markets of major trading partners, especially if the respective country is a large exporter or importer.

In 2002, for instance, India announced a new export/import policy for the next five-year period. This new policy included a lifting of the quantitative export restrictions and a lowering of the minimum export price for certain types of rice in order to reduce public stocks (FAO, 2003). This led to an increase of Indian rice exports from around 2 million tons to around 5 million tons in 2002 and 3.5 million tons in 2003 (FAO, 2005a). In absolute terms most of these additional imports went to Asian countries as can be seen in Table 7. In particular this policy change contributed to an import surge in Bangladesh, where imports from India rose from 0.1-0.3 million tons to 0.9 million tons e. Large relative increases in imports also took place in some African countries. In most cases listed in Table 7, the increase in imports came along with either a considerable decline in import unit values or persistently low levels in previous years, generally below $200 US per ton, in some cases even below $150 US[2] (ITC, 2005).

It is interesting to note that some countries had already faced large amounts of imports of Indian rice in 1998, especially Bangladesh. This corresponds to a peak in Indian exports of rice in 1998 which had already risen to almost 5 million tons from a level of 2.0-2.5 million tons in the years before and decreased again in the following years. Unit values of Indian exports in 1998 do, however, not show a serious decline.

[2] The exemptions are Gabon and the Philippines with import unit values of $239 and $295 US per ton, respectively.

Table 7: Rice Imports from India 1998-2002

	1998	1999	2000	2001	2002
Bangladesh	2,333,278	380,738	318,416	102,984	937,239
Indonesia	18,722	1,184	10	142,066	561,945
Malaysia	25,345	301	10,601	52,985	359,601
Philippines	55,394	52	0	153	527,196
Singapore	16,172	16,812	18,692	41,716	102,517
Comoros	1,201	0	22	0	31,151
Djibouti	9,435	10,486	3,457	5,624	21,038
Gabon	0	0	0	0	51,050
Kenya	37,115	13,118	22	12,178	31,750
Madagascar	3,000	0	0	0	22,681
Sudan	9,746	84	2,377	1,704	24,412

Source: ITC (2005).

3.3 Other Policies which Impact on World Market Prices

3.3.1 Overview

Many agricultural policies other than direct export policies affect supply and demand – and thus net exports and world market prices. The total Producer Support Estimate (PSE) for OECD member countries, which is a measure of total transfers to agricultural producers which result from agricultural policies, was at $280 billion US in 2003 (OECD, 2004). The total PSE contains very different policies and effects of policies which differ widely in their impact on world markets. Effects on world market prices may be distinguished in two dimensions: effects on the level and effects on the volatility.

With respect to the impact on the world market price level, the main criterion is to what extent policies are coupled to production and consumption. For example price policy affects supply and demand strongly: high prices result in more production and less consumption, and thus higher net exports and a depressing effect on world market prices. In contrast, producer subsidies with internationally integrated markets only affect production and not demand. Their world market price-depressing effect is therefore less pronounced than that of price policy. Also producer subsidies can be classified according to their production-distorting potential. Producer subsidies for crop output are also incentives to enlarge the areas under that crop and incentives to increase yields by higher production intensity. If a subsidy is bound to area grown to particular crops, it will be less production-distorting as the incentive to increase yields is obsolete. Providing payments to farmers that are not bound to current production or production factors would have even less effects on production. However, even payments which are fully decoupled from production in a technical sense may have some effect on production. It is often argued that so-called decoupled payments lead to increasing wealth levels and thus to higher production by risk-

averse producers (Burfisher and Hopkins, 2003). Also the better position of farmers on credit markets may affect production (OECD, 2001).

Indirectly, depressed world market price levels may contribute to import surges. This is because they could result in importing countries more fully using their tariff bindings and therefore less able to charge additional tariffs in case of exceptionally low international price levels. With respect to the impact on world market price volatility, which may directly translate into import surges, two criteria are relevant. First, whether the policies tend to isolate the domestic market from international price signals or whether they transmit international price signals to domestic markets. And second, whether policies are stable in time, or are volatile themselves. Usually agricultural policies in the main subsidizing countries tend to be relatively stable and change slowly in time. Therefore, changes in agricultural policies as a cause for import surges are probably an exception rather than the rule, but policies differ widely as to the extent to which they isolate domestic markets from international markets. Table 8 provides examples for such a classification.

Table 8: Examples of Policies which Isolate Domestic from International Markets to a Different Degree

Policies which tend to isolate domestic markets from international price signals	**Policies which allow for transmission of international price signals to domestic markets**
Variable export subsidies	Export subsidies at fixed rates
Variable tariffs/threshold prices	Fixed non prohibitive tariffs (specific tariffs more than ad valorem tariffs)
Prohibitive tariffs	
Subsidies which depend on income/price gap between international and domestic market	Subsidies which do not vary with income/price parameters
Intervention prices	

Source: Own composition.

Rather than discussing detailed policy composition in major subsidizing countries, the following two sections summarize the results of selected empirical studies which try to determine the level as well as volatility effects of agricultural policies on world market prices.

3.3.2 Summary of Model Based Analyses: How Distorted are World Market Price Levels?

Different model studies project wide variations of world market prices for most agricultural products with liberalization. Such variation can be due to different model base periods and projection horizons, product and policy coverage, model formulation, model parameters and scenario formulation. For this reason, their comparability is very limited. Nonetheless, results of model-based studies have been surveyed and are presented and compared in Tables 9 and 10 in order to provide an overview of the order of size of world market price distortions. Table 9 presents the expected world market price changes estimated in four studies under partial liberalization scenarios.

Table 9: Distortion of World Market Prices: Effects of Partial Liberalization

Study	Frandsen et al. (2003)	Leetmaa (2001)	OECD (2002)	Poonyth and Sharma (2003)	Kuhn (2003)	Range
Model	**GTAP**	**ESIM**	**AGLINK**	**ATPSM**	**WATSIM**	
Projection year	**2013**	**2007/08**	**2005**		**2010**	
Cereals						**-5.4– 17.5%**
Rice	0%			1.6%	0.5-0.9%	0.0-1.6%
Wheat	2%	-5.4 / -6.1%	-1%	10.8%	6.4-8.4%	-5.4-10.8%
Barley		6.3 / 7.3%		1.5%	11.5-17.5%	1.5-17.5%
Maize			1%	2.7%	3.6-4.5%	1-4.5%
Sorghum				0.6%		0.6%
Other grains	2%	4.8 /4.9%			6.4-10.0%	2.0-10.0%
Pulses				**2.7%**	**4.5-5.0%**	**2.7-5.0%**
Sugar	**-2%**			**4.7%**	**35.8-37.0%**	**-2%-37.0%**
Oilseeds	**1%**	**-4.9 / + 19.4%** [a]	**-4%**	**1.0%**		**-4.9-19.4%**
Vegetable oils	**1%**			**3.4%**		**1.0-3.4%**
Meat						**2.5-10.1%**
Beef	7%		1%/-1%	6.0%	6.8-7.0%	6.0-7.0%
Pig meat		9.9 / 10.1%	0%	2.6%		2.6-10.1%
Poultry meat		3.3 / 3.2%		2.5%		2.5-3.0%
Sheep meat				6.0%		6.0%
Other meat	2%				6.6-6.8%	2.0-6.8%
Dairy products	**-9%**					**2.0-20.2%**
Butter			26%	20.2%	13.2-13.5%	13.2-20.2%
Cheese				13.0%	5.8%	5.8%-13.0%
SMP			9%		2.0-2.1%	2.0-2.1%
WMP			15%			15%
Fruit & vegetables	**0%**			**0.9-2.3%**		**0.0-2.3%**

[a] Rapeseed.

Sources: Frandsen et al. (2003), Leetmaa (2001), Poonyth and Sharma (2003), Kuhn (2003), own calculations.

Frandsen et al. (2003) use the GTAP model to simulate the effects of abolishing all export subsidies[3] and domestic policies for agricultural products, and a 30% reduction of all import tariffs. Leetmaa (2001) applies the ERS version of the ESIM model to run two scenarios of an elimination of EU export subsidies, one of which assuming a strong Euro versus the US$, one

[3] A uniform decoupled payment to land owners is introduced, exactly compensating for the negative impact of the policy changes on land prices.

assuming parity of both currencies. The OECD study (2002), which is based on the AGLINK model, also simulates the abolishment of export subsidies, though not only those of the EU but of all OECD countries[4]. Also different scenarios are carried out with different assumptions about the exchange rate between the Euro and the US$. The studies of Poonyth and Sharma (2003) using ATPSM and Kuhn (2003) using WATSIM simulate the implementation of the Harbinson Proposal for the Doha Round of WTO Negotiations. The latter is conducting two scenario runs with different assumptions about technical progress in crop production in the former USSR.

In the group of cereals, the price of rice is expected to respond least to partial liberalization. Increases between 0% and 1.6% are expected. For other cereals, the projected price changes are higher. For wheat, Leetmaa (2001) forecasts a price decrease, as it assumes that more wheat will be grown in subsidized regions as the domestic price decrease for coarse grains is more pronounced than that for wheat. The OECD study (2002) also forecasts a decrease of the world wheat price, however, only in the case of a weak Euro. The other studies predict a price increase between 2% and 11%. The coverage of coarse grains differs a lot among the surveyed studies. This may have contributed to the large spread of the predicted price changes which range from about 2% to 17.5% for temperate zone cereals. Sorghum was only covered by one of the studies and the projected price increase is minor. The model assumptions on liberalization efforts, however, differ among the studies. In light of this it is surprising that the GTAP-based study (Frandsen et al., 2003) predicts such low price changes for cereals, as it assumes, unlike all other studies, full abolishment of domestic support, which is most unanimously seen as the major source of distortion of cereal markets.

Pulses are only covered by the two studies of the market effects of the Harbinson Proposal. Both studies do not see large price changes, but their predictions vary considerably from each other in relative terms with 2.7 and 4.5-5%.

The greatest variety of results shows up in world market price expectations for sugar. Frandsen et al. (2003) predict a 2% decrease of the world market price as a result of lifted EU production quotas. The study of Poonyth and Sharma (2003) predicts a modest increase of about 5%. The WATSIM-based study (Kuhn, 2003) forecasts an enormous increase of the world sugar price, more than 35%.

Also the coverage of oilseeds is different. The three studies that cover oilseeds as an aggregate expect small price changes between –4% and 1%. The decrease predicted by the AGLINK-based study stems from an assumed increase in EU production as a response to falling grain prices. The ESIM-based study covers only rapeseed and predicts a high range of results due to the abolishment of export subsidies. In case of a strong Euro, world prices are expected to fall by about 5% due to cross-price effects as rapeseed is not eligible for export subsidies in the EU. In case of parity the world market price increases immensely by about 19.4%.

[4] The results have already been referred to in Section 3.2.1

Vegetable oils are covered by the GTAP- and the ATPSM-based studies. The expected price increases are minor in both studies, but vary widely in relative terms which may in part be contributable to different scenario assumptions.

The coverage of meat products is again highly diverse. The studies which cover beef predict quite unanimously an increase of world market prices by about 6 to 7%. Only the AGLINK-based study expects minor changes due to assumed low substitutability of subsidized EU exports with beef from other sources. Pork is only covered by Leetmaa (2001), OECD (2002), and Poonyth and Sharma (2003). Although the latter simulate a stronger liberalization, the effects predicted are smaller, 9.9-10.1%, 0% and 2.6% respectively. Leetma (2001) and Poonyth and Sharma (2003) report similar expectations for poultry meat with 3.2-3.3% and 2.5%, respectively. As for beef, the OECD study (2002) assumes strong differences in qualities of meat exports from the EU and other sources leading to low substitutability and therefore small price changes. Sheep meat is only covered by the ATPSM-based study and world market prices are expected to rise by 6%. The studies of Frandsen et al. (2003) and Kuhn (2003) cover all meats but beef as an aggregate, coming to quite different result for the world market price changes with projected increases of 2% and 6.6/6.8%, respectively. Again this may be due to different assumptions on the degree of liberalization, which is assumed to be higher in the field of domestic support and lower in the field of market access in Frandsen et al. (2003).

Dairy products are not covered by the ESIM-based study. The GTAP study covers them as an aggregate and expects, as a result of the abolishment of the EU milk quota regime, a decrease of the world market price. The two studies simulating the Harbinson proposal predict considerable increases of world market prices for butter and cheese. The study of Kuhn (2003) predicts increases which are lower than those expected by Poonyth and Sharma (2003). The world market price for butter is assumed to increase by 13% to 20% and the expected increase of the cheese price is around 6% and 13%, respectively. The OECD study (2002) does not cover cheese. The price increases predicted for butter are, at 22-30%, the largest among partial liberalization studies. Only two studies cover SMP and forecast price increases between 2 and 11%. The OECD study (2002) is the only one that includes whole milk products (WMP) and expects, depending on the development of exchange rates, increases between 9 and 21% in world market prices.

The price projections for fruit and vegetables are difficult to compare among each other as the aggregate is highly heterogeneous. The studies which cover these products expect price changes between 0% and 2.3%.

Table 10 presents model results of two studies simulating complete agricultural liberalization scenarios. The study of FAPRI (2002) uses the FAPRI model, the USDA study (Diao et al., 2001) uses a dynamic global CGE model.

Table 10: Distortion of World Market Prices: Effects of Full Liberalization

Study	FAPRI (2002)	Diao et al. (2001)
Model Projection Year	FAPRI 2002-2011	Dynamic Global CGE Model (USDA)
Rice	10.3%	10.1%
Wheat	4.8%	18.1%
Other grains	5.7% [a]	15.2%
Soybean	3.1%	11.2%
Soybean meal	3.8%	
Soybean oil	7.0%	
Rapeseed	20.5%	
Rapeseed meal	-1.8%	
Rapeseed oil	11.0%	
Sunflower seed	4.3%	
Sunflower seed meal	-12.9%	
Sunflower seed oil	7.0%	
Palm oil	4.6%	
Cotton	11.4%	
Butter	39.6%	22.3%
Cheese	22.3%	
SMP	30.5%	
WMP	25.6%	
Beef	3.8%	
Pork	10.3%	
Poultry meat	7.9%	
Fruit and vegetables		8.2%

[a] Maize.
Sources: FAPRI (2002), Diao et al. (2001).

Among the cereals, the results for world market price increases for rice are remarkable. With around 10% they are much larger than the expected effects in the partial liberalization studies, which seems plausible because of the abolition of high tariffs in large importing countries. For temperate zone grains the results are more heterogeneous. While prices are predicted to increase by around 5% by FAPRI, an increase of more than 15% is expected by the USDA study. The oilseed sector is highly disaggregated in the FAPRI analysis. While the aggregated oilseed price is expected to increase by 11.2% in case of full liberalization of agricultural policies by Diao et al. (2001), increases between 3.1% for soybeans and 20.5% for rapeseed are predicted by the FAPRI study.

The livestock sector is combined in one large aggregate in the USDA study. The projected world market price increase is 22.3%. On average this expectation is supported by the FAPRI study, although results vary immensely among products. Expected price increases are large for dairy

products, especially for butter with 39.6% and SMP with 30.5%, and are smaller for meat products especially for beef with an increase of 3.8%. The latter figure is even smaller than those suggested by the various studies of partial liberalization scenarios.

The FAPRI study is the only one among the ones surveyed here which covers cotton. The expected price increase in case of liberalization is 11.4%.

The USDA study attempts to attribute the observed world market price distortions to three categories of agricultural policies: import tariffs, export subsidies and domestic subsidies. While for most products import tariffs seem to be the major reason for distorted prices, for wheat and other grains it is the level of domestic subsidies. Export subsidies are not the most important factor for any commodities, although they have a significant impact on the level of distortion in some cases.

Summarizing the findings, one can conclude that results are quite heterogeneous. This seems only partly attributable to different scenario assumptions as in some cases scenarios assuming a smaller degree of liberalization show larger effects on world market prices. Most studies find distortions to be highest in the dairy sector and relatively moderate in the meat sector. For all other sectors general conclusions cannot be extracted from the model survey.

3.3.3 To What Degree Do Third Country Policies Impact on World Market Price Volatility?

In the context of import surges it is not the general level of price distortions that has the greatest impact, but the unsteady character of distortions which result from third countries' policies. Unfortunately there is little empirical literature attempting to asses present agriultural policies with regard to their impact on world market price volatility. A short overview of some theoretical and empirical work on this subject is given here.

Bale and Lutz (1979) present a simple two-country model for the analysis of different types of import and export policies with respect to their amplifying or cushioning of price instability compared to a free trade situation on both the domestic market of the applying country and the other country's market, which could be considered equivalent to the world market. From the world market's point of view they conclude that fixed *ad quantum* tariffs and export subsidies do not have any effect on price instability, *ad valorem* tariffs have an instability-decreasing effect in the exporting country, i.e. the world market, but an increasing effect in the importing country. The opposite would be true for ad valorem export subsidies which are of no practical importance, though. Quotas are not considered as upper limits to exports or imports in the study, but rather as fixed amounts, regardless of relative prices. Defined thus, in most cases quotas and trade prohibitions (equivalent to zero-quotas) tend to increase instability in the applying country as well as the world market. Policies of fixed prices and variable levies and export subsidies increase instability on the world market while they decrease instability on the domestic market of the applying country. Observed world market price volatility measured as the trend-adjusted coefficient of variation for selected products is presented in Section 4.2.

When assessing the impact of world market price volatility on developing countries' agricultural sectors, the precise temporal pattern of price variation which is not captured by the concept of the coefficient of variation may be of relevance. In contrast to the prevalence of price spikes, which may be detrimental for net food importing countries in the context of their ability to pay their food bill (FAO, 2004), the persistence of low price episodes may have the potential to harm developing countries' producers (Valdés and Foster, 2003).

Empirical literature on the long term development of international price volatility is largely concentrated on cereals. Sarris (2000) does not find changes in international price volatility for cereals for the period 1970 to 1998, whereas Valdés and Foster (2003) report coefficients of variation of cereal prices to be lower between 1986 to 1997 compared to 1973 to 1985.

Empirical literature on the contribution of agricultural policies to world market price volatility is limited. Valdés and Foster (2003) suggest that it may be the removal of quantitative restrictions and variable levies which would contribute to the explanation of the observed decline in international price variability. The time series presented, however, seem rather short as they only cover three years of the tariffication period. Valdés and Foster (2003) also cite Tyers and Anderson (1992) who conclude from policy simulations that "[t]he effect of tariffication is to reduce [world] price volatility substantially" during the 1990s. FAO (2004) reports the frequency of price spikes for wheat, sugar, chicken and skim milk to be lower in the 1990s than in the 1980s, but higher for coarse grains and rice.

Jayne (1993) performs a model-based analysis of instability of world rice prices. His results indicate that the link between domestic stabilization policies and volatility of world market prices seems to have been exaggerated, and that it may well be that in a situation without those policies instability on world rice markets would be higher.

4 Determinants of Import Surges: Non Policy Factors in Third Countries

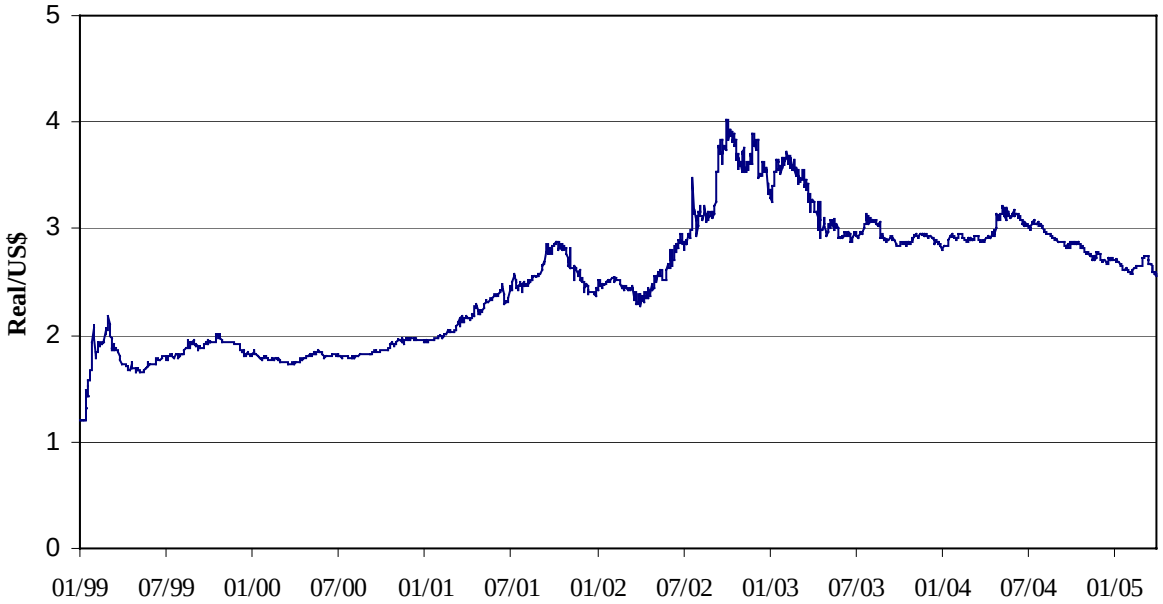
4.1 Sudden Currency Devaluations in Third Countries

4.1.1 Sudden Currency Devaluations in Exporting Countries: Brazil

Sudden devaluations of currencies of third countries can result in import surges via two mechanisms. The first conceivable scenario would be the devaluation of the currency of a trading partner which is an exporter of a certain product. In case of a devaluation of that partner’s currency, import prices in the importing country's currency from that source will decline and imports from that country can therefore rise quickly. This happened when the Brazilian Real was devalued and lost one-third of its value relative to the US$ in 2001 (see Graph 3). This led to a sharp increase of Brazilian poultry exports and import surges in some destination countries. Table 11 shows Brazilian poultry meat exports increased almost 20% from 2000 to 2001. In the course of a further devaluation of the Real by 30% in 2002, poultry exports increased by another 40%. As the table shows, most of the additional exports went to European and Asian markets. However, the percentage increase for the exports to African countries was also very large. The additional exports to Europe went largely to the EU.

For developing countries Table 12 presents an overview of selected county examples where poultry imports from Brazil increased rapidly. The table shows two African countries and two Middle East countries and one South-East Asian country. What distinguishes the African countries from the other three is the fact that after the first year of the surge imports of poultry from Brazil declined again, though not to their former level. The same table also shows the total imports of poultry for the same countries and years. Changes in imports are highly diverse among the countries and make it difficult to draw general conclusions. For the African countries, fluctuation of import levels seems to be quite usual. For Malaysia and Yemen there seems to be a trend of growing poultry imports. Only imports of the United Arab Emirates increased immensely from a very stable level in 2000 and the years before, which would be a criterion to label this situation as an import surge. Furthermore, OECD (2004) world market price data do not record a major depression of world poultry prices in 2001 and 2002. Focusing on bilateral trade relationships rather than on altering conditions on world markets, it would be interesting to investigate how unit values of Brazilian exports in general and in the respective importing countries in particular have developed in the same period of time. However, no evidence could be found in trade data that the observed rise in poultry imports from Brazil came along with a sharp decline in import unit values. In fact import unit values of all countries in Table 12 as well as export unit values of Brazil (in US$) rose in 2001 and declined in 2002 below their level in 2000. The only exemption from this is Malaysia, where unit values of poultry meat imports from Brazil stayed relatively constant from 2000 to 2002, slightly falling in both years.

Graph 3: Exchange Rate of the Brazilian Real against the US$ (1999-2005)



Sources: OANDA (2005), own calculations.

Table 11: Brazilian Poultry Meat Exports by Destination (1999-2002, in tons)

	1999	2000	2001	2001 in % of 2000	2002	2002 in % of 2000
Total	632,002	795,970	949,247	119%	1,317,354	166%
Africa	20,006	25,649	45,356	177%	73,769	288%
Latin America	94,048	66,542	60,571	91%	63,308	95%
Asia	391,099	539,568	607,444	113%	769,671	143%
Europe	125,584	160,798	229,053	142%	409,800	255%

Sources: ITC (2005), own calculations.

Table 12: Poultry Imports of Selected Countries (1998-2001, in tons)

	1998	1999	2000	2001	2001 in % of 2000	2002	2002 in % of 2000
Congo, D.R.	20,161	10,087	11,825	13,003	110%	15,812	134%
of which from Brazil		24	99	2,543	2569%	462	467%
Gabon	12,620	11,833	16,179	12,981	80%	19,688	122%
of which from Brazil		74	823	5,122	622%	2,088	254%
Malaysia	15,312	29,664	32,654	39,567	121%	50,486	155%
of which from Brazil		25	26	2,163	8319%	5,144	19785%
U.A.E.	111,000	116,000	110,900	131,000	118%	144,416	130%
of which from Brazil	24,553	25,454	30,145	53,090	176%	78,277	260%
Yemen	31,189	34,543	60,196	62,335	104%	80,093	133%
of which from Brazil	500	9,130	27,803	39,481	142%	48,148	173%

Sources: FAO (2005a) for total trade, ITC (2005) for bilateral trade, own calculations.

4.1.2 Sudden Currency Devaluations in Importing Countries: Russia

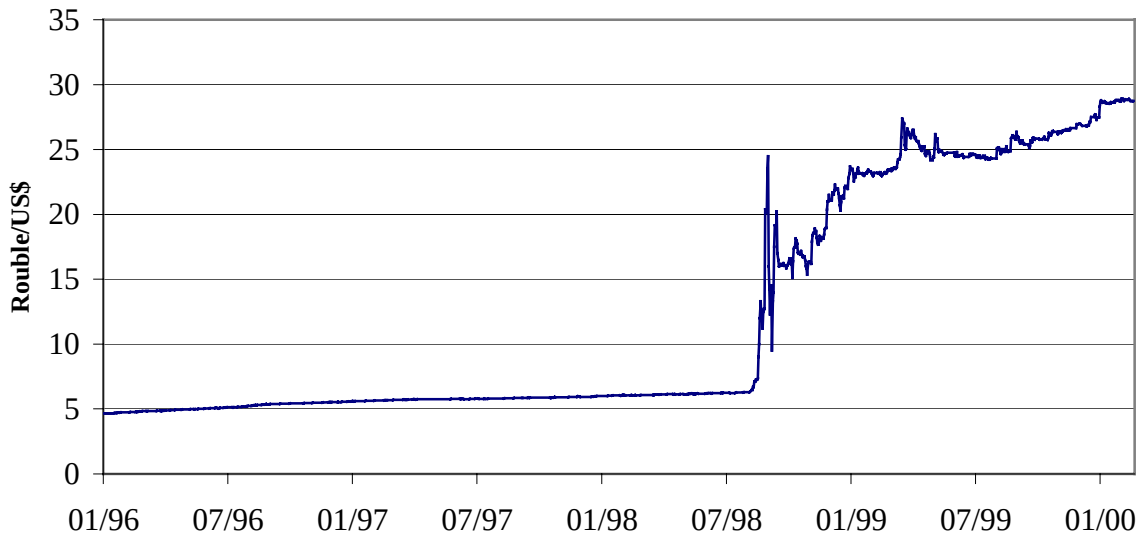
A second mechanism via which the devaluation of the currency of a third country could result in import surges is a devaluation in a large importing country of a certain product. With devaluation imports become relatively more expensive and therefore decrease. This will in turn lead to exporting countries looking for other destinations for their exports, and provide a possible source of import surges in these alternative destination countries. This has been the case with the Russian financial crisis in 1998/99 leading to a collapse of the Russian import market for poultry. After the Rouble fell dramatically against the Dollar in summer and fall 1998 (see Graph 4), Russian poultry imports fell from 826 thousand tons in 1998 to 233 thousand tons in 1999 (FAO, 2005a). The USA, at that time a major source of Russian poultry imports, then directed their poultry exports to other countries which led to a multiplication of imports from the US in many countries. It may be interesting to note that US exports of poultry in the same period remained constant, declining by less than 1%.

Table 13 shows some country examples where imports from the US and total imports of poultry meat have risen significantly from 1998 to 1999. When Russian poultry imports recovered in 2000 to 691 thousand tons, which is more than 80% of their level in 1998, poultry imports in most of the countries presented in Table 13 decreased. The only exception to this is Albania, where total

poultry imports decreased, but imports from the US continued to increase also in that year. Albania is also the only country in which the rise in total imports of poultry was more pronounced than the increase of poultry imports from the US. This raises questions of whether there have been other sources of import surges of poultry which may also have been caused by the Russian currency crisis or by some other factors.

In all countries, import unit values of US poultry imports decreased sharply in 1999 and increased again in 2000 though not to their former levels. This movement is, however, not observable with world market prices. One possible explanation for this discrepancy may be that only certain, low priced, qualities of poultry were driving the observed changes in trade flows.

Graph 4: Exchange Rate of the Rouble against the US$ (1996-2000)



Sources: OANDA (2005), own calculations. Note: Before 1998: 1,000 Roubles = $1 US.

Table 13: Poultry Imports of Selected Countries during the Russian Financial Crisis in 1998/1999

	1996	1997	1998	1999	1999 in % of 1998	2000
Albania	18,861	7,124	3,194	24,078	754%	13,696
of which from the US	1,749	1,367	1,498	6,278	419%	8,770
Ukraine	91,777	56,969	51,526	88,810	172%	26,477
of which from the US	15,871	8,511	6,282	45,431	723%	709
Bahamas	5,100	5,521	8,450	12,330	146%	11,402
of which from the US	3,588	5,538	6,322	10,413	165%	3,805
Haiti	9,344	14,087	19,765	33,571	170%	15,684
of which from the US	10,751	15,325	18,309	35,007	191%	16,266
Philippines	1,801	2,908	4,245	31,331	738%	20,569
of which from The US	760	2,524	2,998	33,630	1122%	15,551

Sources: FAO (2005a) for total trade, ITC (2005) for bilateral trade. Note: As data is extracted from different sources, it may be inconsistent in some cases.

4.2 Supply Volatility

Volatility of agricultural production (yield levels) due to climatic conditions may be a possible reason for volatility of exports and therefore create import surges in the domestic markets of major trading partners in years when yields rise. Also volatility at a global level may depress world market prices in such years and create import surges in any importing country.

To give an impression of the volatility of world production of major agricultural products, trend-adjusted coefficients of variation have been calculated for the global production of selected crops over the last two decades and are presented in Table 14. The volatility presented, of course, is the result of climatic conditions as well as other nonpolicy and policy factors. It can therefore not be solely attributed to climatic conditions. Most of the coefficients of variation are below 10%. In general they are low for cereals and sugar crops and somewhat higher for pulses and oilseeds. The highest variability of production can be found for tobacco. Volatility is remarkably low for rice and sugar cane.

Table 14: Trend-Adjusted Coefficient of Variation (CV) of Global Production (1985-2004)

Product	CV	Product	CV
Wheat	4.2%	**Oil palm fruit**	8.9%
Rice	2.6%	**Olives**	10.1%
Barley	6.0%	**Sunflower**	7.9%
Maize	6.0%	**Rapeseed**	7.7%
Sugar cane	2.6%	**Cottonseed**	7.2%
Sugar beets	4.2%	**Linseed**	9.8%
Beans	4.5%	**Bananas**	2.3%
Peas	10.9%	**Plantains**	1.8%
Chick-peas	10.9%	**Coffee**	7.2%
Lentils	8.4%	**Tea**	2.4%
Soybeans	8.0%	**Tobacco leaves**	11.3%
Groundnuts	5.0%	**Cotton**	7.0%
Coconuts	3.2%		

Sources: FAO (2005a), own calculations.

As demand for agricultural products is much less volatile than supply, one would expect the volatility of supply to be the main source of world market price volatility. But world market price volatility also depends on the share of internationally traded goods in total supply. The lower the trade share, the stronger the leverage of any changes in supply on world market prices. Trend-adjusted coefficients of variation for world market prices of some agricultural products are listed in Table 15. In addition, Table 15 lists the product-specific shares of international trade in world production.

Table 15: Trend-Adjusted Coefficients of Variation of World Market Prices and Trade Share in Total Production (1983/84-2002/03)

Product	CV	Share of international trade in world production [a]
Wheat	20%	18%
Coarse grains	19%	11%
Rice	18%	3%
Oilseeds	13%	16%
Oilseed meals	16%	n.a.
Vegetable oils	23%	33%
Sugar	28%	22%
Beef and veal	8%	9%
Pork	13%	3%
Poultry meat	5%	8%
Sheep meat	21%	7%
Butter	20%	11%
Cheese	15%	7%
SMP	24%	30%
WMP	17%	50%

Sources: OECD (2004), FAO (2005a), own calculations. [a] Trade figures only available from 1986.

Cereal prices vary despite lower volatility in production, around 20%, which is considerably higher than that for oilseeds at about 13%. This may stem from the higher share of trade in world production for oilseeds, if one takes trade in first-stage processed products into account. The highest variability among crop products is for sugar with a coefficient of variation of almost 30%. Looking at livestock products one finds that price volatility is much higher for dairy products than for meat. The coefficients of variation for meat products are lower than those for arable products which can be explained with presumably lower variability of animal production. The volatility of world market prices for dairy products is around 20%, the same level as that of cereals. This high volatility of the world market price despite lower volatility of world production could be explained by the tiny volume of world markets for dairy products compared to total milk production, which is much lower than for other agricultural products.

4.3 Changes in Comparative Advantage

Changes in comparative advantages usually take place slowly and smoothly and are therefore not likely to contribute to surge-like phenomena, but rather have an effect on the level of world market prices. Exceptions in which certain sectors of a country may grow significantly in a rather short period of time due to the realization of a comparative advantage may exist for a variety of reasons. These reasons can be sudden technical progress in production or factor endowment, which may be induced by intervention of governments or non-policy factors. Also conceivable would be the case of sudden price decreases for other products which compete with the product in question for limited area or other factors of production. The induced growth of the sectoral output will have effects on the world market or on the markets of important trading partners if the sector of the country is large in terms of global production and integrated in international markets.

An example of such a fast process is Vietnam, whose coffee sector exploded in the 1990s when production grew from 92,000 tons in 1990 to more than 800,000 tons in 2000. Vietnam advanced from the 18th largest coffee producer in the world to the 2nd largest, and from the 15th largest exporter to the 2nd largest (FAO, 2005b). For Robusta coffee beans, Vietnam is the leading producer and exporter (Niesten et. al., 2005).

Yet coffee is not a very relevant example of import surges of agricultural products in developing countries. Most major importing countries do not have a domestic coffee sector which could be hurt by pressure on the world coffee market. It is rather other exporting developing countries whose sectors have been hurt by the increase of Vietnamese coffee exports.

4.4 Changing Consumption Habits

In the course of income growth the composition of food demand changes. Shifts occur from plant to animal sources of protein and calories, and from lower to higher quality products. A well documented (Gitli et al., 2001) example is the lower preference for chicken parts such as wings and thighs in industrialized countries, whereas the preference for higher quality parts like chicken breast is higher than in low income countries. In such a situation the export price for the low quality parts can become very low, as the alternative domestic use is limited to animal feed. On developing countries' markets, imports of such low quality and low price products may compete with domestic production of poultry meat and result in increasing imports. Empirical evidence for such difference in consumer choices is provided in Gitli et al. (2001: 6), who report that the US wholesale price for drumsticks was 50% below the chicken breast price in 1999/00 whereas drumsticks were 13% more expensive than chicken breast in Costa Rica.

Such processes may result in strongly increasing imports in developing countries, but usually they would take place over a longer period because trade relations and the respective domestic markets need to be developed. Therefore, it is questionable whether these processes would contribute to surge-like phenomena with sudden increases in imports.

4.5 Marketing Strategy of Third Countries' Companies

4.5.1 Predatory Pricing

The textbook argument is that foreign companies may attempt to achieve a monopolistic position on developing countries' markets by setting initial prices below their marginal cost of exportation. Subsequently, after having pushed domestic companies out of the market, foreign companies may use their market position for the realization of monopoly profits. Such a scenario would necessarily involve some kind of informal agreement among foreign companies on how developing countries' markets should be attributed among them. Otherwise, the option to establish monopoly power would be prohibited by other foreign countries' companies entering the market once domestic companies are out.

Because of the strong homogeneity of agricultural raw products and most products of the first processing levels this phenomenon is probably not very relevant for the agricultural sector, but rather for industrial goods. For highly processed food products, such as drinks, convenience foods,

highly processed dairy products, etc., predatory pricing cannot be excluded a priori on the basis of product characteristics. Nonetheless, no specific examples are known to the authors.

4.5.2 Selling Below Full Production Cost because of Missing Alternative Marketing Channels

Companies in third countries may have reasons other than predatory pricing for selling below marginal cost of production/full cost of production on developing countries' markets. This may be the case if no alternative marketing channels which would allow to charge the full cost price exist. This could, for example, be due to a wrong assessment of marketing opportunities or to unforeseen quality deficits.

In such a situation the company may look at nontraditional markets in developing countries on which the respective products can be sold at a price at least above the cost of marketing and the opportunity cost of getting rid of the products elsewhere. Under such circumstances the choice of selling on nontraditional markets may well fit the goal of not negatively affecting traditional outlet channels. In case of quality deficits, the often weak sanitary and phytosanitary standards in developing countries, and even more importantly, their deficient implementation, may result in their markets being especially suitable as an outlet. As for predatory pricing, this reasoning has some appeal, but no specific examples are known to the authors.

5 Conclusions

This paper examines exogenous factors in the emergence of agricultural import surges in developing countries. These factors can be grouped into the categories "policies of third countries" and "nonpolicy factors in third countries".

Policy factors include direct export policies such as export subsidies, export credits, food aid and actions of state trading enterprises. In particular, worldwide outlays for export subsidies have decreased enormously during the last decade and due to overall relatively low monetary volume, direct export policies are unlikely to have a major impact on global markets for agricultural and food products. This, however, in no way says that they may not have strong effects on product, time and country-specific trade in some cases.

Policy factors also include many other agricultural policies such as import barriers and subsidies in third countries, which impact supply and demand, and therefore trade. Protectionist agricultural policies contribute to import surges in two ways. First, they depress world market or bilateral trade price levels which may result in importing countries not being able to protect their domestic markets in periods of especially low world market prices due to restrictions on their tariff levels which result from international agreements. Second, some of these policies contribute to world market price volatility, mainly through their tendency to isolate domestic markets from international price signals.

Simulation model analyses clearly show that world market prices would be significantly higher in the absence of main agricultural policies for most products, for some dairy products this effect

may be even higher than 20%. Analyses show direct export policies to have a less distinctive effect on world market price levels than the policy categories of domestic support and market access. The empirical literature on the contribution of agricultural policies to world market price volatility is rather limited and does not allow for general conclusions. Nonetheless the theoretical case of widespread policies such as prohibitive tariffs, variable export subsidies and intervention price systems contributing to world market price volatility is clear.

In the area of nonpolicy factors, the sudden currency devaluation in large exporting or importing countries can contribute heavily to import surges as shown by the examples of Brazil and Russia. Also, supply volatility in major producing countries may play a role. Other factors like changing consumption habits and comparative advantages are more likely to develop smoothly and therefore not contribute to surge-like phenomena. Strategic marketing of companies in exporting countries may contribute to import surges in specific cases.

As a final conclusion, it may be that domestic factors play a more important role in the emergence of import surges than exogenous factors. Unilateral trade policy changes of the importing country, whether for purely domestic reasons or any kind of international commitments such as RTAs, WTO commitments or the implementation of structural adjustment programs, have the potential to strongly impact on imports.

This paper is intended as a background paper for the preparation of a number of case studies. As potential exogenous factors in the emergence of import surges are manifold and divergent in nature, and their relevance differs widely among products, countries and periods, no general analytical approach to identify the relevant factors can be recommended. It may be helpful to go through the factors listed above with a view to global commodity markets: how have prices evolved? What happened in the markets of countries which strongly impact world market developments? As a second step, the same kind of questions may be posed with a focus on the bilateral trade flows: how did bilateral trade prices develop? What happened on markets of main trading partners? Once a factor which is likely to have contributed to an import surge is identified, hastily jumping to conclusions should be avoided as it may be a combination of many factors which finally result in an import surge.

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Annex Table 1: Largest Exporters and their Share in World Exports

Product	Five Largest Exporters & Export Share					Cumulative Share	World Market (000 Mt)
Cereals	USA	EU-15	Canada	Argentina	Australia		
	38.3%	10.1%	9.4%	8.4%	8.4%	74.6%	223,131
Wheat (incl. flour)	USA	Canada	AUS	EU-15	Argentina		
	27.9%	16.5%	14.1%	14.1%	8.2%	80.8%	103,434
Rice	Thailand	Viet Nam	India	USA	China		
	28.2%	14.3%	12.9%	12.6%	8.5%	76.5%	23,053
Maize	USA	Argentina	China	SAF	Hungary		
	68.1%	13.1%	10.0%	1.9%	1.7%	94.8%	69,276
Barley	EU-15	Australia	Canada	Ukraine	Russia		
	34.6%	19.0%	12.1%	7.6%	7.5%	80.7%	16,381
Sugar (raw equiv.)	Brazil	EU-15	Thailand	AUS	Cuba		
	23.9%	14.9%	10.3%	10.3%	8.1%	67.5%	37,036
Poultry meat	USA	Brazil	EU-15	China HK	Thailand		
	40.4%	15.2%	14.7%	9.0%	5.6%	84.9%	6,256
Bovine meat	Australia	USA	EU-15	NZ	Brazil		
	20.8%	17.1%	13.9%	8.2%	7.8%	67.8%	5464.7829
Pig meat	EU-15	Canada	USA	China	Brazil		
	31.5%	16.6%	15.8%	10.5%	6.3%	80.7%	3,104
Sheep & goat meat	NZ	Australia	Uruguay	India	Sudan		
	51.2%	38.1%	1.7%	1.4%	0.9%	93.3%	691
Cheese and Curd	EU-15	NZ	Australia	Switzerland	USA		
	37.5%	18.0%	13.6%	4.4%	3.3%	76.8%	1,284
Butter	NZ	EU-15	AUS	Ukraine	CZ		
	37.6%	24.3%	12.5%	3.6%	2.9%	80.8%	814
Milk powder	EU-15	NZ	Australia	USA	Argentina		
	30.2%	24.4%	13.7%	4.4%	4.0%	76.6%	2,597
Eggs in shell	EU-15	USA	China	Malaysia	Belarus		
	20.8%	15.0%	12.7%	12.2%	6.2%	66.9%	447
Oilseeds	USA	Brazil	Canada	Argentina	Paraguay		
	46.6%	18.1%	8.9%	8.3%	3.2%	85.1%	56,352
Soybeans	USA	Brazil	Argentina	Paraguay	Canada		
	59.0%	24.0%	9.4%	4.2%	1.6%	98.1%	42,631
Sunflower Seed	RUS	Ukraine	Argentina	Hungary	USA		
	24.4%	20.9%	15.4%	8.5%	6.4%	75.5%	2,896
Rape & mustard seed	Canada	Australia	EU-15	CZ	USA		
	60.7%	14.2%	9.8%	3.6%	3.1%	91.3%	5,822
Groundnuts	China	USA	Argentina	India	Viet Nam		
	31.2%	16.4%	15.0%	10.4%	8.0%	81.0%	1,173
Cottonseed	Australia	USA	Benin	EU-15	Syria		
	36.4%	20.8%	10.6%	5.7%	4.9%	78.4%	950
Linseed	Canada	USA	EU-15	Nepal	Argentina		
	93.3%	3.4%	0.9%	0.3%	0.3%	98.1%	778
Pulses	Canada	China	Australia	Myanmar	USA		
	26.0%	11.9%	10.6%	10.2%	8.6%	67.4%	6,810

Dry beans	Myanmar	China	USA	Argentina	Canada		
	26.9%	24.2%	14.4%	9.3%	7.7%	82.6%	2,557
Dry peas	Canada	Australia	EU-15	Ukraine	USA		
	54.6%	12.6%	9.0%	6.4%	5.2%	87.7%	2,109
Chickpeas	Australia	Turkey	Mexico	Iran	Canada		
	29.4%	21.6%	19.6%	8.7%	7.9%	87.1%	666
Lentils	Canada	Turkey	India	USA	Australia		
	40.7%	18.5%	9.7%	8.7%	7.9%	85.5%	898
Vegetable oils	Malaysia	Indonesia	Argentina	EU-15	USA		
	31.7%	15.0%	13.5%	7.6%	6.6%	74.4%	29,684
Soybean oil	Argentina	Brazil	USA	EU-15	Malaysia		
	37.2%	23.1%	13.3%	12.8%	2.1%	88.5%	6,837
Sunflower oil	Argentina	Ukraine	USA	EU-15	Hungary		
	49.1%	14.0%	10.0%	8.1%	3.5%	84.6%	2,735
Rapeseed oil	EU-15	Canada	USA	China	China HK		
	39.4%	35.7%	6.7%	5.8%	4.5%	92.1%	1,502
Palm oil	Malaysia	Indonesia	PN Guinea	Singapore	China HK		
	63.6%	25.9%	2.0%	1.6%	1.0%	94.1%	13,493
Coconuts oil	Philippines	Indonesia	Malaysia	PN Guinea	EU-15		
	60.7%	24.9%	4.3%	2.5%	1.9%	94.2%	1,700
Olive oil	EU-15	Tunisia	Turkey	Morocco	USA		
	57.4%	23.5%	11.7%	1.6%	1.4%	95.7%	423
Cotton Lint	USA	Uzbekistan	Australia	EU-15	Turkmenistan		
	30.5%	15.0%	9.9%	3.4%	3.1%	62.0%	5,716
Wool (greasy)	Australia	NZ	EU-15	Argentina	SAF		
	65.7%	7.7%	3.3%	2.9%	2.8%	82.4%	676
Wool (scoured)	NZ	Australia	EU-15	China	Argentina		
	40.0%	29.6%	6.3%	3.6%	2.4%	81.9%	343
Tobacco	USA	Brazil	EU-15	Zimbabwe	China		
	15.7%	14.0%	12.8%	6.7%	5.4%	54.6%	2,812
Coffee	Brazil	Colombia	Viet Nam	Indonesia	Guatemala		
	21.2%	11.7%	10.1%	6.3%	4.7%	54.0%	5,032
Tea	Sri Lanka	Kenya	China	India	Indonesia		
	18.2%	17.2%	16.7%	13.6%	6.9%	72.6%	1,290
Bananas & plantains	Ecuador	Costa Rica	Colombia	Philippines	Guatemala		
	31.4%	16.0%	12.3%	11.2%	6.1%	76.9%	12,946
Weighted average						80.3%	

Source: FAO (2005a), own calculations.

Annex Table 2: Largest Importers and their Share in World Imports

Product	Five Largest Importers & Import Share					Cumulative Share	World Market (000 Mt)
Cereals	Japan	China	South-Korea	Mexico	EU-15		
	12.3%	5.9%	5.6%	5.2%	4.3%	33.3%	221,798
Wheat (incl. flour)	Brazil	Japan	Egypt	EU-15	Algeria		
	6.7%	5.7%	5.3%	4.6%	4.6%	26.8%	102,635
Rice	Indonesia	EU-15	Iran	Brazil	Philippines		
	8.8%	4.4%	4.1%	4.0%	3.9%	25.2%	22,003
Maize	Japan	S-Korea	China	Mexico	Egypt		
	23.4%	11.8%	8.6%	6.8%	5.2%	55.8%	69,562
Barley	Saudi Arabia	China	Japan	USA	Iran		
	28.8%	12.1%	9.7%	5.0%	3.4%	59.0%	15,997
Sugar (raw equiv.)	RUS	EU-15	USA	Japan	S-Korea		
	12.1%	5.7%	5.4%	4.6%	4.1%	31.9%	34,470
Poultry meat	RUS	China HK	Japan	China	EU-15		
	15.9%	15.0%	12.5%	8.6%	6.2%	58.3%	5,662
Bovine meat	USA	Japan	RUS	EU-15	Mexico		
	21.3%	15.9%	11.3%	7.6%	5.1%	61.3%	5304.1381
Pig meat	Japan	Russia	USA	China HK	Mexico		
	27.1%	16.9%	12.1%	6.3%	5.8%	68.2%	3,082
Sheep & goat meat	EU-15	USA	Saudi Arabia	China	Japan		
	32.2%	7.5%	7.1%	5.3%	5.1%	57.2%	672
Cheese and Curd	Japan	USA	EU-15	RUS	Saudi Arabia		
	14.8%	14.8%	11.0%	8.6%	5.2%	54.5%	1,221
Butter	RUS	EU-15	Egypt	Mexico	Morocco		
	16.9%	13.4%	6.8%	4.5%	3.6%	45.1%	731
Milk powder	Algeria	Mexico	Brazil	Philippines	China		
	8.0%	7.0%	5.8%	5.7%	5.5%	31.9%	2,406
Eggs in shell	China HK	Singapore	Canada	Switzerland	UAE		
	20.0%	9.1%	6.5%	5.9%	5.1%	46.6%	417
Oilseeds	EU-15	China	Japan	Mexico	S-Korea		
	35.0%	18.4%	13.3%	8.3%	2.9%	77.8%	56,204
Soybeans	EU-15	China	Japan	Mexico	S-Korea		
	35.9%	21.7%	11.5%	8.4%	3.4%	80.8%	42,685
Sunflower Seed	EU-15	Turkey	Morocco	Mexico	USA		
	68.3%	14.7%	2.6%	2.2%	1.7%	89.6%	2,840
Rape & mustard seed	Japan	China	EU-15	Mexico	USA		
	35.7%	16.8%	15.5%	12.8%	5.3%	86.1%	5,790
Groundnuts	EU-15	Indonesia	Canada	Mexico	RUS		
	36.6%	9.9%	6.9%	5.1%	4.2%	62.7%	1,268
Cottonseed	Mexico	EU-15	Japan	USA	S-Korea		
	19.7%	18.8%	18.7%	14.6%	7.3%	79.2%	907
Linseed	EU-15	USA	Japan	Egypt	Canada		
	66.9%	17.9%	7.8%	2.1%	1.0%	95.8%	807

Pulses	EU-15	India	Pakistan	Egypt	Bangladesh		
	24.8%	16.0%	4.2%	4.0%	2.8%	51.8%	6,588
Dry beans	EU-15	India	Japan	Brazil	Mexico		
	21.3%	7.3%	7.1%	6.6%	5.1%	47.3%	2,023
Dry peas	EU-15	India	Bangladesh	China	Pakistan		
	41.8%	18.8%	5.3%	5.0%	3.1%	74.1%	1,973
Chickpeas	India	EU-15	Pakistan	Bangladesh	Algeria		
	26.9%	18.2%	12.6%	5.8%	5.8%	69.3%	653
Lentils	EU-15	Egypt	Sri Lanka	Algeria	Turkey		
	19.4%	8.5%	8.1%	6.1%	5.9%	47.8%	899
Vegetable oils	EU-15	China	India	USA	Pakistan		
	14.4%	11.3%	10.4%	5.5%	4.4%	46.0%	28,272
Soybean oil	China	Iran	India	Bangladesh	China HK		
	15.7%	9.6%	8.4%	7.2%	4.6%	45.4%	6,450
Sunflower oil	EU-15	Algeria	India	RUS	Iran		
	9.4%	8.7%	7.5%	7.5%	7.2%	40.4%	2,750
Rapeseed oil	USA	China	China HK	RUS	Mexico		
	28.0%	18.1%	7.5%	4.7%	4.7%	62.9%	1,497
Palm oil	EU-15	India	China	Pakistan	Japan		
	17.3%	16.9%	13.4%	8.5%	3.1%	59.3%	12,193
Coconuts oil	EU-15	USA	Malaysia	China	S-Korea		
	40.7%	27.8%	5.4%	5.3%	2.7%	81.9%	1,674
Olive oil	USA	EU-15	Japan	Brazil	Australia		
	33.8%	27.8%	5.0%	4.8%	4.5%	76.0%	487
Cotton Lint	EU-15	China	Indonesia	Turkey	Thailand		
	13.9%	11.9%	9.2%	6.4%	6.0%	47.3%	5,712
Wool (greasy)	EU-15	China	India	Turkey	USA		
	39.9%	31.5%	4.3%	3.6%	2.7%	82.0%	617
Wool (scoured)	EU-15	China	Japan	India	S-Korea		
	29.1%	13.7%	11.0%	10.4%	5.5%	69.7%	324
Tobacco	EU-15	USA	Russia	Japan	Ukraine		
	21.9%	10.5%	10.1%	6.8%	2.5%	51.8%	2,599
Coffee	EU-15	USA	Japan	Canada	Poland		
	45.4%	23.5%	7.2%	3.2%	2.3%	81.7%	4,919
Tea	EU-15	Russia	Pakistan	USA	Egypt		
	19.6%	11.7%	8.6%	7.2%	5.3%	52.3%	1,264
Bananas & plantains	USA	EU-15	Japan	RUS	Canada		
	32.7%	26.8%	7.5%	4.2%	3.3%	74.5%	12,470
Weighted Average						46.0%	

Source: FAO (2005a), own calculations.