TABLE 5.6

Transfers from risk-related policies in selected emerging economies 1992-97 and 2002-05

Millions EUR	Brazil		Chile		China		Russia		South Africa		Ukraine	
	1995-97	2002-05	1992-97	2002-06	1993-97	2002-05	1992-97	2002-05	1992-97	2002-05	1994-97	2002-05
Risk reduction measures in PSE	**-3 911**	**603**	**325**	**201**	**-2 702**	**12 488**	**-4 652**	**4 433**	**892**	**577**	**-3 021**	**-667**
-- MPS	**-4 019**	**526**	**308**	**164**	**-3 073**	**11 147**	**-4 680**	**4 333**	**891**	**577**	**-3 021**	**-667**
-- Other risk reduction measures	***108***	***77***	***17***	***37***	***371***	***1 341***	***28***	***101***	***1***	***0***	***0***	***0***
Private storage/non marketing	0	1	0	0	0	0	0	0	0	0	0	0
Water management[1]	0	0	2	7	0	0	0	0	1	0	0	0
Certified seeds/breeds	0	0	0	0	0	0	15	33	0	0	0	0
Technical assistance/extension	108	76	15	22	275	1 218	0	0	0	0	0	0
Pest and disease control	0	0	0	8	96	122	13	68	0	0	0	0
Risk reduction measures in GSSE	**565**	**131**	**19**	**49**	**202**	**454**	**100**	**324**	**28**	**78**	**29**	**147**
Water management[2]	477	96	19	42	0	0	0	22	1	14	9	66
Pest and disease control	44	22	0	0	96	122	0	0	0	0	16	13
Inspection (GSSE)	44	13	0	7	106	331	100	302	26	64	3	69
Ex ante risk mitigation/coping measures in PSE	**93**	**117**	**0**	**1**	**0**	**0**	**7**	**44**	**0**	**0**	**623**	**204**
Variable rate payments based on output[3,4]	61	42	0	0	0	0	0	0	0	0	623	204
Variable rate payments based on current A/An/R/I[3]	0	0	0	0	0	0	0	0	0	0	0	0
Variable rate payments based on non-current A/An/R/I, production required[3]	0	0	0	0	0	0	0	0	0	0	0	0
Variable rate payments based on non-current A/An/R/I, prod. not required[3]	0	0	0	0	0	0	0	0	0	0	0	0
Insurance subsidies[5]	33	75	0	1	0	0	7	44	0	0	0	0
Futures markets subsidies	0	0	0	0	0	0	0	0	0	0	0	0
Income tax smoothing schemes	0	0	0	0	0	0	0	0	0	0	0	0
Ex post risk mitigation/coping measures in PSE	**926**	**635**	**4**	**2**	**772**	**2 559**	**1 660**	**139**	**15**	**26**	**186**	**12**
Disaster relief payments	0	0	4	2	329	871	11	4	15	26	0	0
Ad hoc assistance	0	0	0	0	0	0	2	0	0	0	0	0
Social assistance/labour replacement	0	0	0	0	443	1 688	0	0	0	0	0	0
Debt rescheduling/write-off	926	635	0	0	0	0	1 648	135	0	0	186	12
Total PSE	**-2 284**	**2 377**	**341**	**291**	**311**	**25 535**	**235**	**5 759**	**924**	**687**	**-1 435**	**178**
Total risk-related measures in PSE	**-2 892**	**1 355**	**329**	**204**	**-1 930**	**15 047**	**-2 984**	**4 617**	**907**	**603**	**-2 212**	**-452**
% share of risk-related measures in PSE	*n.a.*	*57*	*96*	*70*	*n.a.*	*59*	*n.a.*	*80*	*98*	*88*	*n.a.*	*n.a.*
% share of risk-related measures other than MPS in PSE	*n.a.*	*35*	*6*	*14*	*n.a.*	*15*	*n.a.*	*5*	*2*	*4*	*n.a.*	*n.a.*
%share of MPS in PSE	*n.a.*	*22*	*90*	*56*	*n.a.*	*44*	*n.a.*	*75*	*96*	*84*	*n.a.*	*n.a.*
%share of MPS in risk-related measures	*n.a.*	*39*	*94*	*80*	*n.a.*	*74*	*n.a.*	*94*	*98*	*96*	*n.a.*	*n.a.*
Total GSSE expenditures	**2 364**	**1 050**	**39**	**92**	**5 713**	**13 794**	**1 065**	**794**	**453**	**441**	**300**	**353**
Risk related measures in GSSE	**565**	**131**	**19**	**49**	**202**	**454**	**100**	**324**	**28**	**78**	**29**	**147**
% share in total GSSE	*24*	*12*	*49*	*53*	*4*	*3*	*9*	*41*	*6*	*18*	*10*	*42*

n.a.: not applicable because of negative numbers; A/An/R/I: Area/Animal number/Receipts/Income

1. Subsidies to water use and investment assistance in irrigation and drainage systems on the farm.
2. Infrastructure assistance for water management off the farm.
3. Payments of this PSE category that have a variable rate label, except those included in the disaster relief payments or insurance subsidies items in this table.
4. Includes Marketing loans subsidy from preferential interest in Brazil; and deficiency payments for crop and livestock products in Ukraine.
5. Includes PROAGRO insurance payments, Rural insurance premium and Insurance payments Garantia Safra in Brazil; Agricultural Insurance Programme COMSA, CORFO, MINAGRI in Chile; and Compensation of insurance payments and Crop insurance subsidies in Russia.

Source: OECD, PSE database 2006.

Support to *ex ante risk mitigation* systems includes payments with a variable rate, although some disaster payments with a variable rate are classified as *ex post* in Tables 5.5 and 5.6. This is because disaster payments are granted after the disaster has occurred and damage has been estimated. However, the frontier between *ex ante* and *ex post* measures is not always clear. Insurance and futures options subsidies are also classified as *ex ante* risk mitigation measures. *Ex ante* risk mitigation support is particularly significant in Canada and the United States, and to a lesser extent in Australia and Mexico.

Subsidies to purchase futures option contracts are only available in Mexico and they have gained importance in recent years. Most risk mitigation payments are, however, *Ingreso Objetivo* payments, which are paid per tonne with a variable rate. Brazil also subsidises risk premium for private options contracts for cooperatives and agro-food industries so government expenditures on these subsidies is included in the consumer support estimate (CSE).

Insurance subsidies are relatively common in the countries examined. They exist in 17 EU member states, 5 non-EU OECD countries (out of 11) and 5 emerging economies out of the 8 examined. However, the level of subsidies varies greatly by country, depending on the development of insurance schemes. In most countries, subsidies to insurance schemes are included in the PSE as payments based on variable input use, insurance being considered as a variable input. In these cases, government expenditures transferred every year to insurance companies operating insurance schemes are considered. However, in several countries (Brazil, Canada, Turkey and the United States), insurance subsidies are reported as a share of the payment received by farmers from insurance schemes in the year the payment is granted, and are thus considered as payments with a variable rate. Insurance payments are paid per hectare in the case of crop insurance, or based on receipts or net income in the case of revenue/income insurance.

In Australia, government transfers to income tax smoothing schemes[6] are included in the PSE. The tax system of other countries also allows for spreading taxable income over several years, but the transfers they may generate are not included in the PSE, either because the system is not specific to farmers (Netherlands) or because, while the option is only available to farmers, the value of the tax concession is not estimated.

Payments with a variable rate other than insurance payments and disaster relief payments include various deficiency and stabilisation payments paid per tonne, per hectare, per animal head or based on receipts or income. When based on current parameters (e.g. current area), they meet the difference between current receipts/income (per hectare) and a reference, often historical, level.

[6] These are the Income Equalisation Deposits Scheme, replaced in 1999 by the Farm Management Deposit Scheme, as well as the Income Tax Averaging Scheme for primary producers.

Payments based on output with a variable rate are found mainly in Japan (e.g. price stabilisation for fruits and vegetables, payments for rice, manufacturing milk, sugar cane), Mexico (*Ingreso objetivo* payments), Ukraine and the United States (loan deficiency payments, marketing loan gains, storage payments). Most payments based on current area, animal numbers, receipts or income with a variable rate are in Canada, where they include crop insurance payments (based on area) as well as various federal and provincial revenue insurance payments such as the Net Income Stabilisation account (NISA) and the Canadian Agricultural Income Stabilization (CAIS), the "assurance stabilisation du revenu agricole"(ASRA) in Quebec and the Ontario Risk Management Program. They are operated by the federal government and/or by provincial governments, with contributions from farmers. As such, they are considered as government programmes and payments are not identified as insurance subsidies in Table 5.6. Canada and the United States also make variable rate payments based on non current parameters for which production is not required (respectively the CAIS Inventory Transition Initiative in Canada, and the Countercyclical payments introduced in the 2002 Farm Bill and Crop market loss assistance in the United States).

Support to *ex post risk mitigation* systems considered here includes disaster relief payments, *ad hoc* assistance, social assistance specific to farmers and debt management measures. While *ad hoc* assistance payments are mainly found in Canada, disaster relief payments are more widespread. Disaster relief payments are negligible in countries with high support levels, as well as in New Zealand and Turkey. Conversely, they account for a significant share of support in Australia, where support levels are relatively low at around 5% of farm receipts. In recent years, disaster relief mainly came from the "Exceptional circumstances" programme, which provides short-term assistance to long-term viable farm businesses to cope with rare circumstances that are beyond the scope of normal risk management practices[7]. In the EU, disaster relief payments are funded at the national or regional level and many member states have granted such payments over the period. Among emerging economies considered, China is the only one with significant levels of disaster relief assistance (Table 5.6). In countries which use disaster relief assistance to a larger extent, the level of these payments has increased in the 2000s compared to the previous decade.

Social assistance includes short term relief assistance to help farm households cope with emergency situations and poverty alleviation measures. In Australia, the

[7] To qualify as exceptional circumstances, "the event must be rare (it must not have occurred more than once on average in every 20 to 25 years; it must result in a rare and severe downturn in farm income over a prolonged period of time (e.g., greater than 12 months); it cannot be planned for or managed as part of farmers' normal risk management strategies; and must be a discrete event that is not part of long-term structural adjustment processes or normal fluctuations in commodity prices" (DAFF, 2005). OECD (2007) summarises the process for defining exceptional circumstances and the conditions for receiving support.

Farm Family Restart Scheme (or Farm Help) provides short term financial assistance in the form of income support and investment grants to re-establish outside agriculture (as well as training and advice) to help farmers with financial problems, either by improving the financial performance of their farm enterprise, finding alternative sources of off-farm income or re-establishing outside farming. In Mexico, agricultural producers or workers are paid the minimum wage to participate in community work in extremely poor areas during the period of low agricultural activity. This could be considered as a measure to diversify income sources rather than a safety-net in case of temporary problems as in the Australian case.

Labour replacement assistance provides subsidies to replace the farmer in case of illness or accident. Such assistance has been available over the period considered (1986-2007) in a number of EU member states, in Iceland and in Norway. Debt rescheduling or write-off has generated significant levels of support during the two periods considered in Brazil and Russia and to a lesser extent in Mexico and Ukraine.

WTO notifications and risk management

Since the Uruguay Round Agreement on Agriculture in 1995, member countries notify their domestic support to the WTO. These notifications report annual levels of agricultural domestic support, whether subject to reduction commitments or not. Support under measures subject to the reduction commitment is reported as the current total Aggregate Measurement of Support (AMS), often referred to as Amber Box. Measures exempt from the reduction commitment include: measures exempted because they qualify under the criteria set out in Annex 2 to the Agreement (often referred to as Green Box measures); measures respecting conditions for exemption set for direct payments under production-limiting programmes (often referred to as Blue Box measures); and for countries with developing country status, measures notified under "development programmes" as part of Special and Differential Treatment (often referred to as Development Box measures). Moreover, product-specific and non-product specific AMS support that accounts for less than 5% of the value of production (referred to here as *de minimis* support) is exempted from the current total AMS.

As OECD indicators of support, WTO notifications on domestic support commitments include information on transfers associated with risk-related measures. These measures can be found in all categories of support (referred to here as boxes). Price support is reported as AMS support, while support to general services, including government expenditures on inspection services, pest and disease control, or training, extension and advisory services, is notified in the Green Box. The Green Box includes two categories of measures specifically designed to include insurance subsidies, income safety-nets and disaster relief payments with strictly defined implementation criteria (Annex 2, paragraphs 7 and 8 of the Agreement

on agriculture)[8]. However, as these categories are defined by strict implementation criteria to ensure they are minimally distorting, many insurance subsidies do not qualify.

Depending on implementation criteria, stabilisation and insurance payments can be either in the AMS support, the Blue Box or the Green Box. Deficiency payments or stabilisation payments based on output are generally notified in the Amber Box. Some payments such as crop insurance subsidies are notified as non-product specific AMS support. For many countries, non-product specific AMS support is exempted under the *de minimis* provisions and is therefore not counted towards the ceiling commitment. In Mexico, subsidies on insurance premiums, available to all producers, including AGROSEMEX, are notified in the Development Box. In Japan, the rice farming income stabilisation programme is notified in the Blue Box. Payments made in case of financial hardship such as the AAA Farm help programme in Australia[9] or agricultural social programmes in Argentina and Korea are notified in the Green Box as decoupled income support (Annex 2, paragraph 6 of the Agreement on agriculture).

Table 5.7 identifies the share of some risk-related measures in different WTO categories of support. In Japan, the rice farming income stabilisation programme is the only programme included in the Blue Box. Most crop and revenue insurance subsidies are notified as non product specific support in Canada, the EU and the United States, where they account respectively for 36%, 58% and 29% of support in this category. Other stabilisation or compensation payments such as NISA and CAIS payments in Canada, and 2002 Farm Bill countercyclical payments in the United States, are also in this category. Canada and Australia are the only countries, where support from income insurance and income safety-net programmes accounts for a significant share of the Green Box, while payments for relief from natural disaster are significant in more countries.

Support to general services forms the main part of the Green Box in many countries. The highest shares for pest and disease control and/or inspection services are found in Argentina, Australia, Canada and Mexico. Research, which is only an important component of expenditures in the Green Box, might also include a risk-related dimension.

[8] These are "Government financial participation in income insurance and income-safety-net programmes" (Annex 2, paragraph 7 of the Agreement on agriculture) and "Payments for relief from natural disaster" (Annex 2, paragraph 8 of the Agreement on agriculture).

[9] This programme provides a short-term welfare safety net for low-income farmers experiencing financial hardship and who cannot borrow further against their assets. The support is provided while they decide whether to improve their farms' financial position, obtain off-farm income or exit.

TABLE 5.7
Share of risk-related support in WTO notifications

	Argentina	Australia	Chile	Canada	EU	Japan	Korea	Mexico	Norway	United States
	2000/1-2003/4	2000/1-06/7	2000-06	2000-04	2000-05	2000-06	2000-04	2001-04	2000-04	2000-05
% share in current total AMS of:										
- MPS[1]	0	0	--	47	88	64	100	0	95	49
- Deficiency or stabilisation payments[2]	0	0	--	52	1	22	0	64	--	51
%share in product-specific *de minimis* of:										
- Deficiency or stabilisation payments[3]	0	0	--	82	0	87	4	80	0	79
%share in non product-specific AMS[4] of:										
- Deficiency or stabilisation payments[5]	--	0	0	26	0	0	0	0	0	64
- Insurance subsidies[6]	--	0	0	36	58	100	0	0	0	29
% share in the Blue box of:										
- Deficiency or stabilisation[7]	--	–	--	–	--	100	--	–	--	–
% share in the Development box of:										
- Insurance subsidies	--	–	0	–	--	–	0	4	--	–
%share in the Green box of:										
- income insurance and income safety-net programmes	0	8	1	22	0	0	0	0	0	0
- Payments for relief from natural disasters	1	17	0	0	2	2	8	0	1	3
- General services	81	54	97	55	21	79	58	28	21	17
. Pest and disease control	41	9	0	2	6	1	2	7	6	n.a.
. Training services	0	2	22	3	1	0	1	0	1	n.a.
. Extension and advisory services	4	7	4	8	1	11	1	0	2	n.a.
. Inspection services	1	4	19	20	1	0	2	0	0	n.a.

n.a.: not available separately; -- no support notified in this category or not applicable.
1. MPS (and equivalent measurement of support in the EU).
2. Market Revenue Program, ASRA, Ontario Grain Stabilization Payments and Provincial Direct Payments in Canada; Direct aid for banana in the EU; price-related payments and deficiency payments in Japan; Ingreso Objetivo payments in Mexico; ; and loan deficiency payments, marketing loan gains, trade adjustment assistance, certificate exchange gains, commodity loan forfeit in the United States.
3. Same as above, for different commodities depending on the year; beef deficiency payments in Korea.
4. Non-product specific support is often excluded from reduction commitments on de minimis grounds.
5. NISA and CAIS in Canada; Crop market loss assistance before 2002 and from 2002 countercyclical payments in the United States.
6. Crop insurance and production insurance in Canada; National insurance subsidies in the EU; Agricultural Insurance Scheme in Japan; Crop and revenue insurance subsidized by the Federal Crop Insurance Program in the United States.
7. Rice farming income stabilisation programme in Japan.
Source: WTO notifications on domestic support commitments.

5.4 Ongoing OECD work

Risk management policy measures are likely to remain an important part of agricultural support in the years to come. This offers a good opportunity to apply the holistic framework to both policy analysis and policy design. The ongoing OECD project on risk management in agriculture will attempt to respond to this challenge via two avenues: a thematic review of risk management policies in agriculture in specific countries and an analysis of risk management policies and strategies using

micro models. The Thematic review will analyze the availability and use of different risk management instruments in five OECD countries, with a particular emphasis on the interaction between policy measures and market and on-farm strategies. The micro model analysis will focus on the measurement of risk exposure at the individual farm level, and the use of calibrated micro simulation models to study farmers response to policies, markets and on-farm instruments.

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6

Market access versus domestic support: Assessing the relative impacts on developing countries' agriculture

Antoine Bouet and David Laborde Debucquet[1]

Introduction

It is commonly believed that market access restrictions imposed by countries of the Organization for Economic Co-operation and Development (OECD) on developing countries' agricultural trade have greater impact on world welfare than domestic support policies. Market access restrictions may also limit new agricultural, food or biofuel production opportunities.

This policy conclusion should apply to developing countries, although to vastly different degrees. Agricultural exports from developing countries still face high import barriers, but the impact of market access restrictions varies widely across developing countries. First, most favoured nation (MFN) regimes do not actually apply to all countries and commodities: for example, many developing countries that benefit from preferential access under the Generalized System of Preference (GSP), the African Growth and Opportunity Act (AGOA) or the Everything but Arms (EBA) schemes face lower restrictions on eligible products than do other developing countries. Second, developing countries form a heterogeneous group in terms of income, product specialization and net trade flows: for example, some developing countries may specialize in a few agricultural products, making them more vulnerable to policies in OECD countries that are restrictive in agriculture; also market access restrictions may impact developing countries that are net food exporters differently than those that are net food importers.

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This study addresses these issues and draws several conclusions from a review of literature and an original modelling exercise, undertaken with the MIRAGE model of the world economy[2] and with the help of the MAcMAP-HS6 database on market access for 2004. In particular it shows that market access to agricultural trade is still restrictive for developing countries. Amongst the countries where agricultural exports are most restricted in the world by border protectionism when they penetrate foreign markets are Guyana (for which 2004 agricultural exportations faced an average import duty of 107.2 percent) Fiji (56.3 percent), Armenia (52.7 percent), Saint Kitts and Nevis (50.8 percent) and Swaziland (50.6 percent). The 70 countries most penalized by agricultural protectionism are developing countries. Market access restrictions are not uniform across products, countries or groups of countries, as they are dependent not only on developing countries' income and development levels but also on whether countries are subject to MFN or preferential tariffs, on countries' product specializations, and on their net trade position. This clearly means that the structure of market access restrictions significantly affects the composition of agricultural trade and production possibilities of developing countries.

This study provides an overview of the type and extent of market import barriers facing developing countries' agriculture: tariffs under either ad valorem or specific forms and tariff rate quotas (TRQs). It then provides an overview of model-based assessments of the relative impacts of market access versus domestic support on world welfare and agriculture in developing countries and a summary of the salient findings from trade models in trade liberalization studies. Finally, we present our own analysis of global trade liberalization using a database of bilateral tariffs applied at the HS6 level and integrated in a Computable General Equilibrium (CGE) model in order to clearly isolate the effects of market access from the effects of domestic support policies.

The study is structured as follows: Section 2 details the agricultural trade and market access characteristics of developing countries; Section 3 reviews the literature on the potential impact of market access and domestic support on developing countries; Section 4 presents the results of various liberalization scenarios on the level of border protection and on agricultural trade and welfare in developing countries; and Section 5 provides conclusions.

6.1 Agricultural trade and market access in developing countries

In this section we develop indicators of trade and trade policy in order to illustrate the heterogeneity of developing countries in terms of agricultural trade and

[2] MIRAGE is a multi-sector, multi-region Computable General Equilibrium Model devoted to trade policy analysis, initially developed at CEPII, Paris. See Decreux and Valin, 2007 for further information.

impact of agricultural protection. Two distinctions are considered relevant for this study: first, we separate the group of developing countries into least-developed countries (LDCs), as they are defined by the United Nations today, and middle-income countries (MICs). This first distinction enables us to highlight the potential implications of agricultural trade liberalization on the poorest countries, the LDCs. Second, food products are separated from other agricultural products in order to address the concern of numerous countries regarding the effect of trade liberalization on food security.

6.1.1 Protectionism applied on and faced by developing countries

We first examine trade policies in developing countries illustrated by the protection they apply on imports and the protection they face on exports with respect to the world. The average applied tariffs in agriculture calculated from the last release of the MAcMap-HS6 database for 2004 (Boumelassa, Laborde, and Mitaritonna, 2009) are displayed in Table 6.1 (more details are provided in Annex 6.1)[3]. The average Ad Valorem Equivalent (AVE) tariff combines the protection implemented under *ad valorem* and specific tariffs adjusted for the preferences given through regional agreements, North-South preferential schemes, and tariff rate quotas (column Total). Other columns detail these adjustments: column 'TRQ_MARG' indicates how market access concessions given through TRQs reduce the total protection applied in agriculture; column 'PREF_MARG' provides the same information for regional agreements and North-South preferential schemes; and column 'AD_VAL Comp' evaluates the impact of *ad valorem* duties and therefore allows the evaluation of the *ad valorem* equivalent of specific tariffs by comparing it with the column 'APPLIED/FACED AVE'. Agricultural products definition follows WTO guidelines.

TABLE 6.1

Average protection faced by and applied on developing countries on agricultural products

	Protection faced by developing countries' exports				Protection applied on developing countries' imports			
Partner	Total	TRQ_ MARG	PREF_ MARG	AD_VAL comp.	Total	TRQ_ MARG	PREF_ MARG	AD_VAL comp.
World	19.84%	2.54%	2.35%	11.22%	20.32%	2.77%	1.83%	18.58%
HICs	17.98%	2.42%	3.35%	4.88%	18.42%	2.82%	2.62%	17.26%
MICs	23.02%	2.91%	0.97%	20.47%	22.64%	2.83%	0.96%	20.23%
LDCs	13.89%	0.00%	0.78%	13.78%	18.17%	0.57%	1.05%	16.29%

Source: Authors' calculations based on MAcMapHS6-v2.1.
Note: Reference group weighting scheme.
HICs stands for High Income Countries, MICs for Middle Income Countries and LDCs for Least Developed Countries.

[3] Methods of calculation are explained in Bouet et al., 2008.

Two technical remarks are important: first, average figures are computed using the reference group weighting scheme (see Bouet et al. 2008) that allows tariff peaks to be captured and endogeneity of trade flows to tariffs at the bilateral level to be reduced without losing exporter specificities; second, all intra-European union (EU) trade relations are discarded from the analysis in this paper and therefore do not impact EU-specific or worldwide aggregate figures. Globally agricultural exports by developing countries are highly taxed (19.84 percent), in particular when they export towards MICs. Preferential duties given either through TRQs or preferential schemes by rich countries have substantially reduced the average duty faced by developing countries' agricultural exports (2.42+3.35=5.77 percent). The significant protectionist impact of specific duties in rich countries is noteworthy. Developing countries globally tax more LDCs' agricultural exports (18.17 percent) than LDCs tax developing countries' agricultural exports (13.89 percent), and the impact of specific duties in developing countries' agricultural protection is minor.

We then present four maps on protection in the world: Figures 6.1 and 6.2 show a world map of applied protection to imports globally (agriculture and industry) and to agricultural imports, respectively. Figures 6.3 and 6.4 illustrate protection faced by exports globally and by agricultural exports, respectively.

At the global level, high-income countries (HICs) are generally more open than developing countries, even if some countries of the latter group have low national averages: for example, Chile, Guatemala, Myanmar and Madagascar[4]. The African continent offers a very contrasting picture of applied protectionism while the Middle East and South Asia regions are highly protectionist (in particular, Iran, Pakistan, India and Bangladesh). Protectionism in the South American continent is concentrated around the 10 percent level (Figure 6.1).

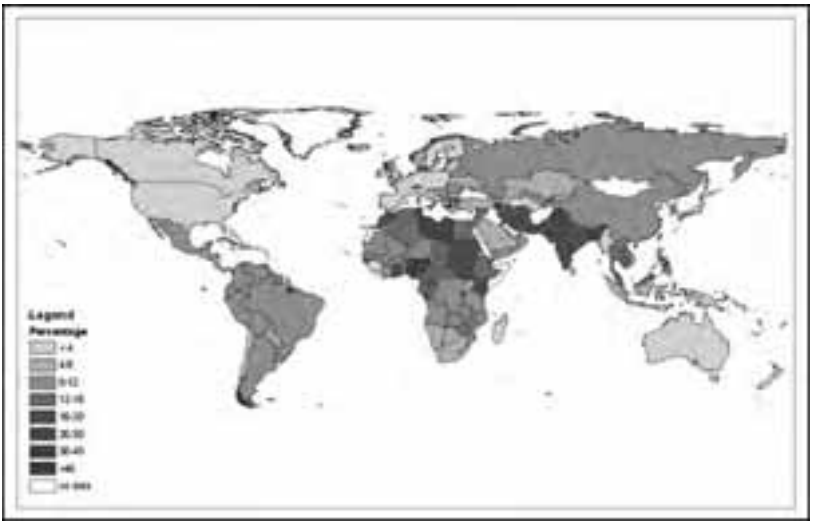
Agriculture offers a much more contrasting picture, with peaks of protection in HICs such as Iceland (63.6 percent), Israel (33.4 percent), Japan (28.2 percent), Norway (74.4 percent), South Korea (36.8 percent), Switzerland (54.0 percent), and in MICs such as Egypt (41.5 percent), India (58.4 percent), Morocco (40.8 percent), Nigeria (42.6 percent), Thailand (38.8 percent), Tunisia (46.3 percent) and Turkey (35.3 percent)[5]. Dispersion of agricultural protection across countries is high in Africa and Asia, but low in South America. In Africa, agricultural protection is relatively low in Western Sub-Saharan Africa, higher in the South African region, and even higher in the Central African and North African regions (see Figure 6.2).

[4] See Boumelassa, Laborde, and Mitaritonna (2009) for a presentation of the 2004 release of the MAcMap-HS6 database.

[5] See Annex 1 for country details.

FIGURE 6.1

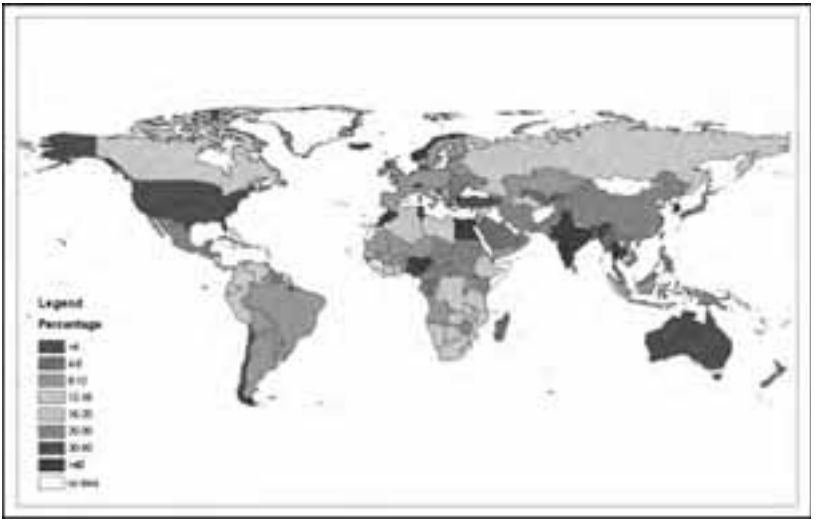
Protection applied to imports – 2004



Source: MAcMap-HS6, version 2. Reference group weighting scheme (see Boumelassa, Laborde, and Mitaritonna, 2009).

FIGURE 6.2

Protection applied to agricultural imports – 2004



Source: MAcMap-HS6, version 2. Reference group weighting scheme (see Boumelassa, Laborde, and Mitaritonna, 2009).

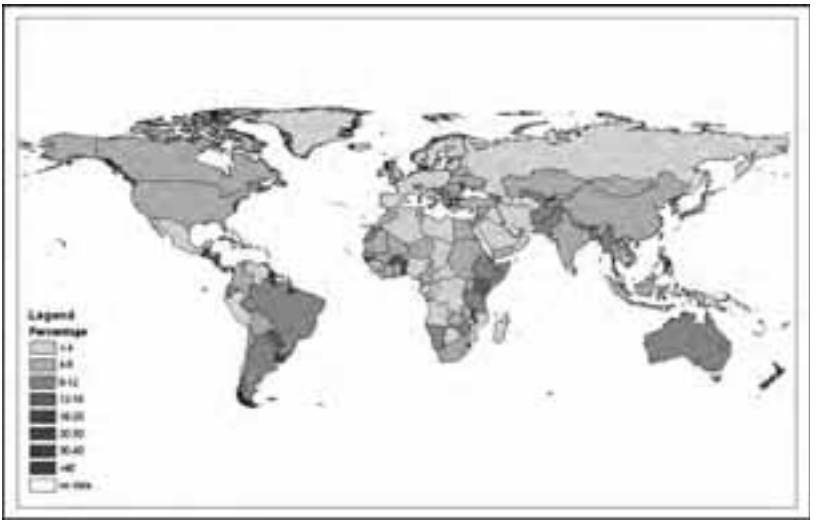
At the global level only a few countries face very restricted access to foreign markets: Guyana, Fiji, Moldova, Belize, Malawi, Uruguay, Swaziland, and Guatemala (see Figure 6.3)[6]. They tend to be small countries very specialized in highly protected products such as sugar, meat and tobacco.

Once again, at the agricultural level, protection faced by exports differs vastly across developing countries. Protection faced by agricultural exports ranges from a very low level for Comoros (1.6 percent) to an amazingly high level of 107.2 percent for Guyana (see Annex 6.1).

The agricultural exports of 107 countries out of 179 are restricted by average tax rates of more than 15 percent. Twenty-nine countries face average tax rates of more than 30 percent and five countries face an average protection of more than 50 percent: Armenia (54.6 percent), Fiji (77.2 percent), Guyana (107.2 percent), Mauritius (53.0 percent), Saint Kitts and Nevis (53.6 percent)[7]. The dispersion of protection faced by agricultural exports within each continent is high (Figure 6.4).

FIGURE 6.3

Protection faced by exports – 2004



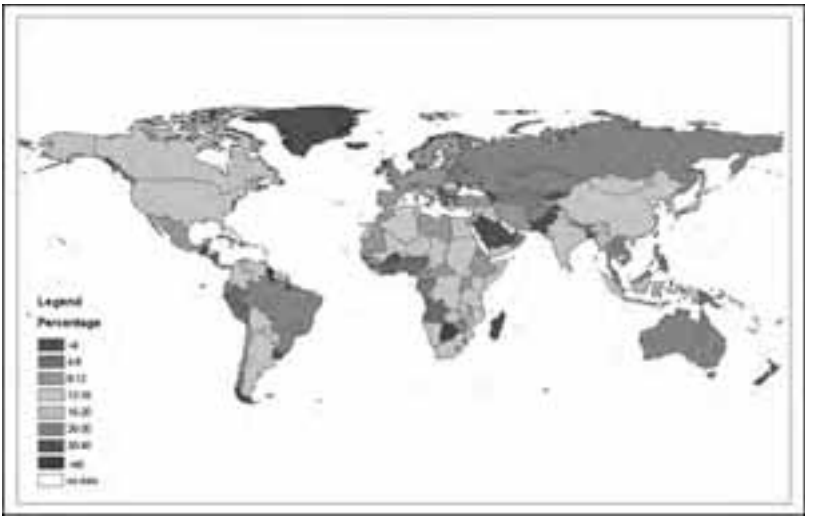
Source: MAcMap-HS6, version 2. Reference group weighting scheme (see Boumelassa, Laborde, and Mitaritonna, 2009).

6 See Boumelassa, Laborde, and Mitaritonna (2009).

7 See Annex 1 for country details.

FIGURE 6.4

Protection faced by agricultural exports – 2004



Source: MAcMap-HS6, version 2. Reference group weighting scheme (see Boumelassa, Laborde, and Mitaritonna, 2009).

Of course import tariffs are not the only barrier to trade. Non-tariff barriers can substantially impede trade and are often more severe in the agricultural sector. Disdier, Fontagné and Mimouni (2008) show that Sanitary and Phyto-Sanitary (SPS) and Technical Barriers to Trade (TBT) measures are prominent in the OECD agricultural sector and negatively influence total OECD imports. Their estimations also suggest that SPS and TBT significantly reduce developing countries' and LDCs' exports to OECD countries while having no significant impact on trade between OECD members.

Table 6.1 and Appendix 6.1 show clearly that both TRQs and preferential access, either under regional agreements or non-reciprocal preferences, substantially decrease the level of applied protection in agriculture: for example at the world level the average applied tariff of 18.9 percent is the result of an average initial MFN tariff of 24.7 percent adjusted down by TRQ (3.1 percent) and preferences (2.7 percent) margins. This is the case in OECD countries in particular, such as Canada, Switzerland and Japan (Annex 6.1).

At the world level, specific tariffs represent about 43 percent of agricultural protection. While for more than three-fourths of countries for which protection is assessed the share of specific tariffs in total protection is nil, many rich countries such as in the EU, and Iceland, Israel, Japan, New Zealand, Switzerland, Norway and the

USA, use specific tariffs extensively (Annex 6.1). The restrictive impact of a specific duty varies with the level of import prices. This means that the restrictiveness of agricultural protectionism changes from one year to the next, adding a new source of cost for agricultural exporters.

Of course the average duty placed on a country' exports depends on the composition of exports (which itself depends on the structure of protection faced). Table 6.2 gives the level of protection for 24 agricultural sectors corresponding to the HS2 classification. The column 'World average' is the world protection calculated using the MAcMap-HS6 methodology, and the column 'Simple average' is the arithmetic average of national average protection. The last two columns provide the percentage of countries where average protection is higher than 20 percent and 40 percent, respectively.

Protection is very high for 'Sugar and sugar confectionary', 'Meat and edible meat offal', 'Dairy products' and 'Tobacco and manufactured tobacco substitutes' corresponding to HS2 chapters 17, 2, 4 and 24, respectively. For a few HS2 chapters, 'Meat and edible meat offal', 'Dairy produce', 'Cereals' and 'Sugars and sugar confectionery', the World average, which takes into account the trade importance of the importing country, is higher than the Simple average, indicating that globally large countries tax these products more than small countries. But in the case of 'Beverages, spirits and vinegar', for example, the Simple average is higher than the World average, indicating that globally small countries tax these products more than rich countries.

Table 6.2 also shows that protection is higher on meat and animal products than on live animals, higher on products of the milling industry than on cereals, and higher on processed food than on raw commodities. In Table 6.3, which aggregates products according to their degree of transformation, processed products are taxed at a higher level than semi-processed products, and unprocessed products have the lowest protection. Both tables point to the presence of substantial tariff escalation, which hurts all groups of exporting countries.