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From overhang to hangover: consequences of protectionist responses to the global crisis for low-income countries

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1. Motivation

As the global economic crisis unfolds, policymakers around the world are faced with increasing pressures to resort to protectionist measures in support of domestic employment. The G20 November 2008 Summit in Washington underscored "the critical importance of rejecting protectionism and pledged that "within the next 12 months, we will refrain from raising new barriers to investment or to trade in goods and services, imposing new export restrictions, or implementing World Trade Organisation (WTO) inconsistent measures to stimulate exports", and the April 2009 Summit in London extended this pledge to the end of 2010. Yet, as Gamberoni and Newfarmer (2009) point out, between November 2008 and March 2009 17 of the G20 members have already implemented policy measures that restrict trade at the expense of other countries. Bown (2009) reports a significant rise in the imposition of WTO-compliant trade remedy measures such as anti-dumping and countervailing duties in the first quarter of 2009 compared to the corresponding 2008 figures and a sharp rise in the initiation of trade remedy investigations over the same period. While these indications of recent protectionist trends are certainly a far cry from the spiralling protectionism of the 1930s, and the trade restrictions implemented so far are limited in scope, it is widely expected that pressures on policymakers to adopt protectionist measures in favour of domestic producers will intensify as the crisis deepens.[1] WTO director-general Pascal Lamy (2009) warns of the dangers "of an incremental build-up of restrictions that could slowly strangle international trade".

It is important to note that the present WTO regulations governing the multilateral trading system leave considerable scope for rule-consistent increases in import barriers. This scope arises not only from the aforementioned limited WTO trade remedy provisions, which allow conditional resort to anti-dumping measures, countervailing duties to offset subsidies to exporters in other countries and safeguard measures, but also from the presence of substantial binding overhangs – or "water" - in the tariff schedules of many WTO members. Binding overhang exists when the bound tariff rate for a product line –

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[1] See e.g. Baldwin and Evenett (2009), Dadush (2009), Erixon (2009), Rollo and Holmes (2009), Hufbauer and Stephenson (2009).

that is the maximum tariff a country can impose under its WTO obligations – exceeds the actual applied tariff imposed by the country. While binding overhangs are generally small for OECD countries, pre-Doha bound tariff rates for middle-and low-income countries are frequently a multiple of the corresponding applied rates. This fact is noteworthy, since – as pointed out by Hufbauer and Stephenson (2009) – leaders of low-income countries badly hit by the crisis are under considerable pressure to take immediate action, but lack the fiscal space for domestic support measures – and hence "trade policy is one of the few levers at their disposal".

A swift successful completion of the Doha Round would gradually reduce existing binding overhangs considerably and would thus reduce the threat of a WTO-compliant rise in global protection that is bound to impede an economic recovery. Indeed, Bouet and Laborde Debucquet (2009) suggest that a conclusion of the Doha Development Agenda should appropriately be seen as a multilateral insurance scheme against the adverse consequences of a beggar-thy-neighbour trade policy scenario, in which countries raise tariffs to their bound levels across the board. Correspondingly, a proper evaluation of the costs of a failed Doha Round would not only include the foregone ordinary net welfare gains arising from the negotiated reductions in trade distortions but should include the welfare losses associated with rising protection under a no-Doha outcome.[2]

Inspired by the approach proposed in Bouet and Laborde Debucquet (2009), this paper employs a global computable general equilibrium (CGE) trade model to contrast the outcomes of a successful Doha agreement with the consequences of a scenario in which countries raise their import duties to the maximum levels compatible with current WTO obligations. The study complements the earlier CGE analysis of Bouet and Laborde Debucquet by using a more differentiated regional disaggregation with a particular focus on low-income regions in Asia and sub-Saharan Africa, by adopting alternative factor market closures that allow for unemployment and underutilization of capital in the short

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[2] From this perspective, the recent suggestion of Mattoo and Subrimanian (2009) to abandon the Doha Development Round altogether in favour of a more ambitious multilateral negotiation agenda would seem to be counterproductive.

run, and by incorporating the most recent (December 2008) Doha Round draft modality revisions in the analysis.

The following section provides a brief informal outline of the analytical framework and highlights some salient features of the benchmark data set. Section 3 describes the trade policy scenarios under consideration and presents simulation results. Section 4 draws conclusions.

2. The Analytic Framework

2.1 The GLOBE Model

The analytic framework for the analysis is the GLOBE model, a theory-grounded, comparative-static, multi-region, multi-sectoral CGE model of global production and trade.[3] The model is calibrated to the new GTAP7 database that reflects the global input-output structure of production and trade by origin and destination in 2004. The database distinguishes 113 geographical regions and 57 commodity groups. For the present study, we retain the full geographical detail for the individual least developed country (LDC) regions and other DfID focus countries identified in the dataset along with a range of other developing country (DC) regions and three OECD[+] regions.[4] As shown in Table 1, the model distinguishes 32 regions including 19 DfID focus regions and 9 other DC regions. To keep the analysis tractable and allow a compact presentation of results, the sectoral aggregation used in this study distinguishes five broad commodity groups and activities: food and food products, fuels, other primary products, non-food manufacturing, and services. The model includes five primary production factors: skilled labour, unskilled labour, capital, land and natural resources.

International Trade

Domestically produced commodities are assumed to be imperfect substitutes for traded goods. Import demand is modelled via a series of nested constant elasticity of substitution (CES) functions; imported commodities from different source regions to a destination region are assumed to be imperfect substitutes for each other and are aggregated to form composite import commodities that are assumed to be imperfect substitutes for their counterpart domestic commodities The composite imported commodities and their counterpart domestic commodities are then combined to produce composite consumption commodities, which are the commodities demanded by domestic agents as intermediate inputs and final demand (private consumption, government, and investment). Export supply is modelled via a series of nested constant elasticity of transformation (CET)

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[3] For a detailed technical documentation of the model, see McDonald, Thierfelder and Robinson (2007).

[4] OECDAsia and OECDEurope in the model include a number of non-OECD high-income countries – hence the label OECD[+].

functions; the composite export commodities are assumed to be imperfect substitutes for domestically consumed commodities, while the exported commodities from a source region to different destination regions are assumed to be imperfect substitutes for each other. The composite exported commodities and their counterpart domestic commodities are then combined as composite production commodities. The use of nested CET functions for export supply implies that domestic producers adjust their export supply decisions in response to changes in the relative prices of exports and domestic commodities. This specification is desirable in a global model with a mix of developing and developed countries that produce different kinds of traded goods with the same aggregate commodity classification, and yields more realistic behaviour of international prices than models assuming perfect substitution on the export side.

Production, Input Demand and Factor Markets

Production relationships by activities are characterized by nested Constant Elasticity of Substitution (CES) production functions. Activity output is a CES composite of aggregate intermediate inputs and aggregate value added, while aggregate intermediate inputs are a Leontief aggregate of the individual intermediate commodity inputs and aggregate value added is a CES composite of primary factors demanded by each activity. The determination of product supply and input demand is based on the assumption of profit maximizing behaviour.

In the simulation two alternative factor market closures without and with factor market rigidities are considered. Under the first closure, all markets are characterized by inelastic factor supplies and the model solves for market-clearing factor prices. Under the alternative closure, the real wages of skilled and unskilled labour as well as the rental rates of capital are fixed in terms of the domestic consumer price index and the supply of these factors is infinitely elastic. In this specification, any shock that would otherwise reduce the equilibrium wage will instead lead to increased unemployment.

While capital, skilled and unskilled labour is mobile across activities, land and natural resources are activity-specific under the activity aggregation used in the present study.

Final Domestic Demand by Commodity

The commodity composition of government consumption demand and investment demand is fixed, with demand patterns from the benchmark data set. Households are utility maximizers who respond to changes in relative prices and incomes. In this version of the model, the utility functions for private households take the Stone-Geary form and hence consumer demand by commodity is described by a Linear Expenditure System (LES) specification.

Macro Closure

For this exercise a "neutral" or "balanced" set of macro closure rules is specified. Current account balances for all regions are assumed to be fixed at initial benchmark levels in terms of the global numeraire[5] and real exchange rates adjust to maintain external equilibrium. This assumption ensures that there are no changes in future 'claims' on exports across the regions in the model, i.e., the net asset positions are fixed. Changes in aggregate absorption are assumed to be shared equally among private consumption, government, and investment demands.

Benchmark Data and Calibration

The model is calibrated to a social accounting matrix representation of the GTAP 7.0 database (Narayanan and Walmsley (eds.), 2008) that combines detailed bilateral trade, and protection data reflecting economic linkages among regions with individual country input-output data, which account for intersectoral linkages within regions, for the benchmark year 2004. The elasticities of substitution between imports by origin in Table A.2 are aggregated from the GTAP behavioural parameter database (Dimaran, McDougall and Hertel, 2006) (after re-scaling by a factor 0.5 in the case of the short-run closure considered below). The elasticities in this database are based on an econometric study by Hertel, Hummels, Ivanic and Keeney (2007) and distinguish 57 commodity groups. In the same database, the Armington elasticities of substitution between domestic

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[5] The numeraire is the commodity basket underlying the OECD America consumer price index (CPI), which is normalised at unity. This choice allows us to represent changes in nominal export values at world market prices in the model as changes in $ export revenues (whereby a $ has constant purchasing power in the precise sense that one $ can always buy one unit of the OECD America CPI basket).

commodities and aggregate imports are determined by the so-called "rule of two", i.e. the Armington elasticities are assumed to be half as large as the elasticities of substitution between imports by origin. Some empirical support for this ad-hoc rule is provided by Liu, Arndt and Hertel (2004). The elasticities for the 57 GTAP sectors are aggregated to the 5 sectors of the present model using each destination region's sub-sectoral benchmark gross absorption shares and sub-sectoral import shares as weights. The sectoral factor substitution elasticities are likewise aggregations of the corresponding GTAP database parameters using region-specific sectoral value added shares.

2.2 Trade Patterns of Developing Regions in the Benchmark Data Set

Tables 2 to 4 show features of 2004 trade patterns for the 28 developing countries and regions in the benchmark data set. The first column of Table 2 shows the shares of individual country/region in total exports of goods and services of developing countries to all destinations.[6] China alone accounts for 35 percent of the total, while sub-Saharan Africa accounts for less than 10 percent of total DC exports. The remaining columns of Table 3 show the commodity composition of exports by region. While the Asian DCs predominantly export manufactures, the exports of a subset of African regions including North Africa, Nigeria, Central and South Central Africa, and Uganda are strongly dominated by fuels. Table 3 provides the corresponding shares on the import side.

The last column of Table 2 shows the shares of DC exports to OECD[+] regions in total DC exports of goods and services by country, while the last column of Table 3 shows the share of imports of OECD[+] origin in DC imports of goods and services. On average, nearly three-quarters of DC exports go to high-income countries, while 60 percent of DC imports are of OECD[+] origin. Table 4 exhibits net exports – i.e. the difference between exports and imports - by country and commodity group.

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[6] Note that for aggregate regions, the figures include intra-region trade.

Table 1: Regional Disaggregation of the Model

Least Developed Countries (LDCs) according to UN classification in italics

Code	Description	Notes on Composite Regions
Cambodia	*Cambodia*	
Vietnam	Vietnam	
Myanmar	*Myanmar*	
Indonesia	Indonesia	
Bangladesh	*Bangladesh*	
India	India	
Pakistan	Pakistan	
China	China	
KyrgyzRepub	Kyrgyz Republic	
RoSoAsia	*Rest of South Asia*	*Afghanistan, Nepal, Bhutan, Maldives*
RoAsia	Rest of Asia	except Middle East
RoAmericas	Rest of the Americas	Central and South America, Caribbean
NorthAfrica	North Africa	Algeria, Libya, Morocco, Tunisia
Nigeria	Nigeria	
Senegal	*Senegal*	
RoWAfrica	*Rest of Western Africa*	*Benin, Burkina Faso, Cape Verde,* Cote d'Ivoire, *Gambia,* Ghana*, Guinea, Guinea-Bissau, Liberia, Mali, Mauritania, Niger, Sierra Leone, Togo*
CntrlAfrica	*Central Africa*	Cameroon*, Central African Republic, Chad,* Congo, *Equatorial Guinea,* Gabon*, Sao Tome and Principe*
SCntrlAfrica	*South Central Africa*	*Democratic Republic Congo, Angola*
Ethiopia	*Ethiopia*	
Malawi	*Malawi*	
Mozambique	*Mozambique*	
Tanzania	*Tanzania*	
Uganda	*Uganda*	
Zambia	*Zambia*	
Zimbabwe	Zimbabwe	
RoEAfrica	*Rest of Eastern Africa*	Kenya, *Rwanda, Sudan, Burundi, Djibouti, Eritrea, Somalia, East African island states*
SouthAfrica	Republic South Africa	
RoSACU	Rest of South African Customs Union	Lesotho, Namibia, Swaziland
OECDAsia	OECD Asia and Oceania, Other High-Income Asia	Japan, Korea, Australia, New Zealand, Singapore, Taiwan, Hong Kong
OECDEurope	OECD Europe and Other EU	includes EU candidate countries inc. Turkey
OECDAmerica	OECD North America	Canada, Mexico, USA
RoW	Rest of the World	Former Soviet Union, Rest of Eastern Europe, Middle East

Table 2: Structural Features of Developing Country Exports - 2004

Percentage shares

	Share in DC Exports	AgFood	Fuels	OPrimary	NfManuf	Services	OECD[+] Share
Cambodia	0.2	3.1	1.6	0.1	79.2	16.0	90.7
Vietnam	1.7	17.8	11.3	0.3	59.6	10.9	75.8
Myanmar	0.1	19.5	28.1	12.6	31.9	7.9	38.4
Indonesia	4.4	11.4	16.2	2.6	62.5	7.2	70.9
Bangladesh	0.5	5.7	0.0	0.1	83.0	11.1	91.4
India	5.3	8.9	3.6	1.8	63.3	22.4	61.4
Pakistan	0.8	9.8	1.0	0.3	70.3	18.6	68.3
China	35.2	3.6	1.9	0.4	85.7	8.5	81.9
KyrgyzRepub	0.1	14.3	0.4	0.4	47.1	37.8	31.0
RoSoAsia	0.1	11.5	11.7	1.2	31.4	44.3	65.1
RoAsia	18.4	8.4	4.5	0.8	71.8	14.5	68.4
RoAmericas	18.3	21.9	15.7	4.5	41.0	16.8	67.3
NorthAfrica	5.2	5.8	42.3	1.1	24.7	26.1	83.9
Nigeria	1.9	1.5	86.8	0.2	2.6	8.9	65.1
Senegal	0.1	28.6	1.5	2.4	31.9	35.5	53.5
RoWAfrica	1.0	38.1	9.9	8.1	28.7	15.1	68.0
CntrlAfrica	0.7	7.1	55.0	10.7	11.5	15.6	79.9
SCntrlAfrica	0.7	0.9	86.0	4.1	2.4	6.6	54.4
Ethiopia	0.1	31.8	0.0	2.1	12.5	53.6	70.6
Malawi	0.0	57.2	23.1	0.1	13.5	6.0	64.9
Mozambique	0.1	14.6	0.1	0.7	54.1	30.4	72.8
Tanzania	0.1	37.3	0.0	6.8	19.6	36.2	57.0
Uganda	0.1	33.9	38.5	0.4	10.9	16.3	70.3
Zambia	0.1	16.8	0.0	3.5	71.7	7.9	43.4
Zimbabwe	0.1	36.5	0.3	13.3	39.9	9.9	50.9
RoEAfrica	0.9	25.3	17.7	1.5	29.2	26.2	66.3
SouthAfrica	3.2	10.3	7.4	7.6	61.3	13.4	64.2
RoSACU	0.6	13.5	3.2	32.3	37.8	13.2	66.1
Total/Average	100	9.8	10.7	2.0	64.0	13.5	73.4

Source: Own calculations based on GTAP7 Database

Table 3: Structural Features of Developing Country Imports - 2004

Percentage shares

	Share in DC Exports	AgFood	Fuels	OPrimary	NfManuf	Services	OECD[+] Share
Cambodia	0.2	12.3	2.5	0.1	76.4	8.7	37.0
Vietnam	2.2	7.7	10.1	1.0	71.4	9.8	53.5
Myanmar	0.2	14.1	10.6	0.1	67.5	7.7	34.4
Indonesia	4.2	8.8	12.7	0.8	58.7	19.1	62.6
Bangladesh	0.8	20.0	9.3	0.8	64.2	5.7	33.8
India	7.6	5.9	22.8	7.3	50.6	13.3	44.6
Pakistan	1.6	10.7	14.4	0.6	55.2	19.2	46.0
China	33.4	4.5	7.0	3.1	75.9	9.4	70.4
KyrgyzRepub	0.1	9.2	15.4	0.6	65.0	9.7	25.4
RoSoAsia	0.3	16.1	10.3	0.5	62.0	11.0	31.1
RoAsia	16.4	7.8	7.9	1.0	72.4	10.9	60.3
RoAmericas	17.2	8.7	9.8	0.9	64.6	16.1	56.9
NorthAfrica	5.5	14.8	4.7	1.2	66.0	13.4	62.9
Nigeria	1.3	12.7	11.4	0.1	56.5	19.3	57.0
Senegal	0.2	26.4	12.8	2.0	48.7	10.1	48.1
RoWAfrica	1.6	18.5	6.0	0.3	64.1	11.1	54.6
CntrlAfrica	0.5	15.1	3.2	0.6	50.7	30.3	66.2
SCntrlAfrica	0.7	13.2	3.6	0.2	51.1	32.0	69.1
Ethiopia	0.2	8.3	12.1	0.2	62.5	17.0	50.9
Malawi	0.1	17.4	5.3	0.5	67.5	9.3	30.1
Mozambique	0.1	23.3	8.3	0.3	49.1	19.1	32.2
Tanzania	0.2	13.7	7.9	0.2	61.9	16.4	39.4
Uganda	0.1	13.1	9.3	0.8	58.8	18.1	42.8
Zambia	0.1	8.2	8.7	1.6	67.8	13.6	26.3
Zimbabwe	0.1	16.7	7.5	0.7	63.1	11.9	20.0
RoEAfrica	1.3	15.8	5.8	0.6	66.3	11.5	44.7
SouthAfrica	3.1	6.4	10.8	1.9	69.6	11.2	58.7
RoSACU	0.5	14.5	6.6	0.8	62.4	15.8	23.1
Total/Average	100.0	7.9	9.3	2.1	68.2	12.5	60.6

Source: Own calculations based on GTAP7 Database

Table 4: DC Net Exports by Commodity Group – 2004

in bill US$ 2004

	AgFood	Fuels	OPrimary	NfManuf	Services
Cambodia	-0.32	-0.03	0.00	0.55	0.37
Vietnam	2.36	1.26	-0.16	-10.86	-0.72
Myanmar	0.10	0.40	0.46	-1.34	-0.03
Indonesia	3.19	3.96	1.59	7.83	-9.37
Bangladesh	-2.46	-1.43	-0.12	-0.97	0.33
India	0.95	-29.19	-5.79	-8.88	3.02
Pakistan	-1.68	-4.24	-0.13	-5.28	-2.90
China	-3.91	-31.70	-16.87	104.36	-0.85
KyrgyzRepub	-0.01	-0.27	-0.01	-0.61	0.23
RoSoAsia	-0.69	-0.32	0.00	-3.08	0.57
RoAsia	5.89	-8.37	0.39	40.73	13.20
RoAmericas	52.68	22.70	16.63	-63.20	7.15
NorthAfrica	-9.53	36.71	-0.04	-43.49	13.15
Nigeria	-2.59	29.23	0.05	-13.14	-1.45
Senegal	-0.55	-0.49	-0.03	-1.38	0.23
RoWAfrica	1.65	0.07	1.45	-14.55	-0.63
CntrlAfrica	-0.55	7.42	1.57	-3.69	-1.13
SCntrlAfrica	-1.72	11.55	0.47	-6.79	-3.80
Ethiopia	0.20	-0.49	0.03	-2.31	0.24
Malawi	0.21	0.12	-0.01	-0.71	-0.07
Mozambique	-0.28	-0.21	0.04	-0.10	0.16
Tanzania	0.33	-0.33	0.19	-2.15	0.19
Uganda	0.34	0.52	-0.01	-1.07	-0.10
Zambia	0.19	-0.19	0.04	0.02	-0.15
Zimbabwe	0.48	-0.19	0.28	-0.74	-0.08
RoEAfrica	0.15	2.88	0.11	-11.76	1.40
SouthAfrica	2.46	-2.07	4.18	-3.96	1.60
RoSACU	0.13	-0.25	3.45	-1.79	-0.02
Total	9.8	10.7	2.0	64.0	13.5

Source: Own calculations based on GTAP7 Database

3. Simulation Analysis

The trade policy shocks considered in this section include stylised Doha Round scenarios based on the revised December 2008 draft modalities for agriculture and non-agricultural market access (WTO, 2008a,b) as well as a set of scenarios based on the considerations in section 1, in which the Doha Development Agenda is abandoned and countries respond to the global crisis by raising their import duties to the maximum levels compatible with current WTO obligations.

3.1 Stylised Doha Round Scenarios

In line with WTO (2008a), the bound tariff cuts for agricultural goods shown in Table 5 are implemented in the Doha scenarios. Furthermore, the developed countries eliminate their agricultural export subsidies. Domestic support for agricultural production is cut by 80% in the OECD Europe, by 70% in OECD America and OECD Asia, and by 55% in other regions that grant domestic support to farmers.

In line with WTO (2008b), for non-agricultural bound tariffs, the Swiss formula

$$T_1 = \frac{aT_o}{a+T_o}$$

with coefficient a=8 for OECD[+] and a=22 for non-LDC developing countries is applied to determine the cut in bound tariffs, where T_o and T_1 denote the pre- and post-Doha bound rates respectively. Note that the coefficient *a* determines the upper limit for the new bound rates. In the simulation analysis, the post-Doha applied rates for each bilateral import flow are set to minimum of the new bound rate and the applied rate in the GTAP benchmark dataset. All LDC tariffs remain unchanged.

Table 5: Doha-Round Bound Tariff Cut Schedule for Agricultural Goods

OECD[+]		Developing Countries except LDCs	
Pre-Doha Bound Rate	Cut by	Pre-Doha Bound Rate	Cut by
≤ 20	54%	≤ 30	33.3%
>20 -50	57%	>30 – 80	38.0%
>50 -75	64%	>80 -130	42.7%
>75	70%	>130	46.7%

Table 6 shows the pre- and post-Doha bound rates along with the average applied rates in the pre-Doha benchmark equilibrium. The fact that for developing countries the new bound rates remain in many cases well above the average applied rates due to large initial binding overhangs does not necessarily imply that the tariff cuts in these cases are entirely ineffective, because often the tariffs on some bilateral import flows are well above the reported simple averages.

The *doha* columns in Tables 7 and 8 report the resulting aggregate changes in trade of goods and services as well as in welfare by country as measured by real absorption[7] (i.e. the sum of private consumption, public consumption and investment spending) for the two factor market closures and elasticity configurations under consideration.

Table 7 reports the results for a standard neoclassical long-run closure with flexible factor prices and standard magnitudes for the elasticities that govern the price responsiveness of trade flows and the substitutability among primary production factors. In contrast, the results in Table 8 are based on a short-run closure with lower elasticities, unlimited supplies of labour and underutilized physical capital – a closure option that may be considered more appropriate for the present global economic crisis situation.

In line with previous comparative-static CGE assessments of the Doha Round, the aggregate real welfare gains are moderate to negligible for most developing regions under the neoclassical closure. A notable exception is Cambodia with a rise in real absorption on the order of 2.6 percent. Cambodia is among the countries hardest hit by the notoriously high US tariffs on clothing and footwear[8] and enjoys a significant terms of trade gain as tariffs on its manufacturing tariffs to OECD America drop from 9.8 percent to 2.7 percent in the simulation analysis. While other Asian low-income exporters of manufactures including Vietnam, Myanmar, Bangladesh and Pakistan enjoy US import tariff cuts of a similar magnitude, the resulting aggregate welfare gain is far more

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[7] Note that changes in real absorption are almost perfectly correlated with the Hicksian equivalent variation as a percentage of benchmark consumption expenditure, and hence the Hicksian welfare measures are not separately reported.

[8] See e.g. Elliott (2007) and PPI (2007). In 2006, US duties collected on imports from Cambodia amounted to $ 366 mill. (Elliott, 2007). In the same year, US net disbursements of overseas development assistance to the country amounted to $ 58 mill. (stats.oecd.org).

pronounced for Cambodia, because the country combines a very high exports/GDP ratio (95 percent vis-à-vis around 20 percent for Bangladesh and Pakistan) with a high share of non-food manufacturing exports in total exports of goods and services (79 percent) and a high OECD America destination share in total non-food manufacturing exports (62 percent vis-à-vis around 30 percent for Bangladesh, Vietnam and Pakistan).

Only two further developing regions – Malawi and the rest of the South African Customs Union comprising Namibia, Swasiland and Lesotho – experience welfare gains in excess of one percent in this simulation. The small negative real absorption results for a range of LDCs primarily located in sub-Saharan Africa can be explained by preference erosion effects[9] in combination with the absence of gains from own import tariff cuts. These countries gain little in terms of improved market access to the OECD regions as tariffs on their exports are already generally low in the status quo ante, but face increased competition from third countries in their export markets after the Doha Round tariff cuts.

The net food importers in this group such as Nigeria, Senegal, Mozambique, Central and South Central Africa are furthermore adversely affected by world market food price rises associated with the cuts in agricultural domestic support and export subsidies within Europe and the USA.

As shown in Table 8, a switch to the alternative factor market closure with unlimited supplies of unskilled and skilled labour at a fixed real wage and excess capacity generally magnifies the welfare effects in either direction. In countries benefiting from the Doha Round under the neoclassical full employment closure with fixed factor endowment, the rise in both export demand and domestic demand generates additional employment under the alternative closure, and hence real GDP grows. Vietnam's real GDP, for instance, is boosted by nearly five percent. In contrast, the majority of countries with small welfare losses under the neoclassical closure experience slight increases in unemployment and hence marginally stronger reductions in real absorption under the alternative closure.

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[9] The prediction of noticeable preference erosion effects for a sub-set of LDCs in sub-Saharan Africa is largely consistent with the corresponding partial-analytic results in Amiti and Romalis (2006). See also Yang (2005).

3.2 WTO-Consistent Protection Scenarios

The differences between the pre-Doha Round bound rates and the average applied rates reported in Table 6 reveal the large extent of binding overhang, particularly for the developing countries and regions in the model. In the *protec* scenarios, countries are assumed to make full use of the policy space offered by these overhangs and raise their applied tariffs all the way to the pre-Doha WTO bound rates. Exceptions are the internal tariffs of composite regions in the model. Thus, barriers to trade among the members of regional trade agreements within composite regions – such as the European Single Market, NAFTA and MERCOSUL – remain unchanged in the simulation analysis. In cases where no previous tariff bindings exist, the new tariff rate is set to the maximum of the 2004 applied rates imposed by the country in the corresponding commodity group.

The *protecl* scenarios differ from the *protec* scenarios in one respect: The exports of LDCs to the OECD are exempted from tariff rises, i.e. in these scenarios the OECD countries continue to grant preferential market access to the poorest countries under schemes including the Everything But Arms initiative, the African Growth and Opportunity Act and GSP[+].

The messages from Tables 7 and 8 are unambiguous and stark: A global resort to WTO-rule-consistent protectionism in response to the crisis would have drastic implications for developing country trade and welfare across the board. Trade volumes drop sharply – most developing countries in the model experience percentage declines in aggregate real export production of double-digit orders along with corresponding reductions in aggregate import volumes. For some countries including Bangladesh, Pakistan and Tanzania real exports of goods and services fall by over 25% under the long-run full-employment closure. Under the short-run closure with factor price rigidities export production in Malawi, Tanzania and Zambia is curtailed by more than one-third.

Even under the neoclassical long-run factor market closure, in which factor price flexibility prevents unemployment and underutilization of capital, the simulated protection shock entails substantial aggregate welfare losses for most developing

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countries. Myanmar, Nigeria and Zimbabwe experience real absorption losses in excess of three percent and no developing country in the model gains from the imposition of higher barriers to trade in this scenario. The message here is plain and by no means surprising – beggar-your-neighbour trade policies are not only bound to fail but are clearly self-defeating.

This message is dramatically reinforced by the real absorption and GDP results in Table 8 for the short-run closure, in which the adverse demand shocks triggered by rising trade barriers are allowed to affect aggregate employment while real factor prices for labour and capital do not adjust. Here the consequences of the simulated global protectionist response for developing regions can only be described as devastating. For many countries real GDP and absorption drop by more than ten percent and for some countries in sub-Saharan Africa including Zambia, Zimbabwe and rest of SACU by more than 20 percent – a grim scenario with obviously catastrophic implications for poverty levels across the globe that need not be spelled out in detail. Moreover, it is a scenario in which all hopes of an impending global economic recovery - let alone hopes of further progress towards the achievement of the Millennium Development Goals - can safely be abandoned. It is noteworthy, that under this short-run scenario even the rich OECD regions, and in particular high-income Asia, are significantly dragged down by the protection-induced depression in the developing world. In contrast in the long-run scenario the OECD regions remain largely unaffected by the counterfactual protection shock, since by assumption trade barriers within each of the three OECD regions do not change and the scope for WTO-compatible increases in duties on imports among the OECD regions, which accounts for most trade of these regions, is very limited.

The assumption of no real wage and rental rate of capital adjustment underlying the results in Table 8 is certainly strong, and it might be argued that the "true" short run impacts of the counterfactual policy shock under consideration are likely to be somewhere in between the results reported in Table 7 and Table 8. However, it is worth re-emphasizing that the scenario reported in Table 8 was by no means deliberately set up as an extreme doom-and-gloom scenario. To reiterate, in the protection scenario considered here, all countries continue to comply with their WTO obligations.

Table 6: Pre- and Post- Doha Round Bound and Average Applied Tariff Rates

Percent

	Pre-Doha Bound				Post-Doha Bound				Pre-Doha Ave Applied			
	AgFood	Fuels	Oprimary	NfManu	AgFood	Fuels	Oprimary	NfManu	AgFood	Fuels	Oprimary	NfManu
OECDAsia	23.0	23.0	5.0	8.0	9.9	5.9	3.1	4.0	12.5	1.2	0.5	2.0
Cambodia	28.1	22.7	10.9	17.7	28.1	22.7	10.9	17.7	7.6	2.0	5.0	10.7
Vietnam	18.5	34.2	11.0	10.4	12.4	13.4	7.3	7.1	14.2	4.7	2.3	8.8
Myanmar	102.2	25.0	23.6	21.1	102.2	25.0	23.6	21.1	5.1	0.2	0.7	1.9
Indonesia	47.0	40.0	38.8	35.6	29.1	14.2	14.0	13.6	3.2	0.9	1.7	3.7
Bangladesh	192.0	40.7	35.6	34.4	192.0	40.7	35.6	34.4	9.2	10.5	4.9	13.9
India	114.2	39.7	38.3	36.2	65.4	14.2	14.0	13.7	33.6	8.7	10.3	14.3
Pakistan	95.6	66.4	64.7	54.6	54.8	16.5	16.4	15.7	12.0	5.7	13.1	14.2
China	15.8	3.3	8.0	9.1	10.6	2.9	5.9	6.4	7.1	1.6	0.9	5.3
KyrgyzRepub	13.1	9.1	5.4	6.7	8.8	6.4	4.3	5.1	4.0	1.0	1.2	3.7
RoSoAsia	40.0	15.0	25.0	25.0	40.0	8.9	11.7	11.7	9.0	5.8	6.0	11.5
RoAsia	128.7	15.1	24.8	17.1	73.7	9.0	11.7	9.6	23.8	2.1	3.2	6.8
OECDAmerica	8.0	2.0	2.0	4.0	4.0	1.6	1.6	2.7	6.1	0.4	0.6	3.3
RoAmericas	30.0	32.5	30.0	30.0	20.1	13.1	12.7	12.7	9.4	1.8	2.7	9.0
OECDEurope	15.1	2.0	2.0	3.9	7.6	1.6	1.6	2.6	12.1	0.1	0.1	1.4
NorthAfrica	60.0	10.0	32.0	39.0	37.2	6.9	13.0	14.1	14.0	3.9	6.3	17.3
Nigeria	150.0	24.5	55.6	48.5	80.0	11.6	15.8	15.1	24.6	12.5	6.6	18.1
Senegal	29.8	30.0	30.0	30.0	29.8	30.0	30.0	30.0	9.3	2.4	2.6	10.3
RoWAfrica	97.1	58.8	31.8	34.7	97.1	58.8	31.8	34.7	11.1	8.5	4.8	10.3
CntrlAfrica	80.0	15.2	21.7	50.0	80.0	15.2	21.7	50.0	18.9	5.5	7.4	14.8
SCntrlAfrica	75.0	85.0	80.0	75.0	75.0	85.0	80.0	75.0	9.3	5.2	5.9	8.9
Ethiopia	35.8	5.6	7.5	35.9	35.8	5.6	7.5	35.9	16.2	1.0	3.2	14.7
Malawi	121.3	9.5	41.0	42.4	121.3	9.5	41.0	42.4	7.7	2.1	0.6	8.4
Mozambique	100.0	7.5	5.1	6.6	100.0	7.5	5.1	6.6	7.7	2.8	1.3	8.0
Tanzania	120.0	1.7	7.6	120.0	120.0	1.7	7.6	120.0	13.1	0.7	1.3	9.2
Uganda	77.7	6.9	8.0	50.6	48.2	5.3	5.9	15.3	7.1	1.6	1.9	5.6
Zambia	123.3	23.0	36.1	42.2	123.3	23.0	36.1	42.2	9.9	5.1	2.5	8.5
Zimbabwe	140.1	10.5	11.6	10.8	74.7	7.1	7.6	7.2	14.0	2.5	2.1	18.6
RoEAfrica	90.0	40.0	62.0	60.0	90.0	40.0	62.0	60.0	14.1	3.4	5.2	13.1
SouthAfrica	40.8	5.2	11.8	15.7	25.3	4.2	7.7	9.2	7.0	0.3	0.3	8.2
RoSACU	40.8	5.2	11.8	15.7	25.3	4.2	7.7	9.2	8.7	0.7	0.1	10.6
RoW	22.4	9.0	20.0	13.9	15.0	6.4	10.5	8.5	9.5	2.0	3.3	6.4

Table 7: Results for Long-Run Full Employment Closure

Percentage Changes

	Real Absorption			Real Exports			Real Imports		
	doha	protec	protecl	doha	protec	protecl	doha	protec	protecl
OECDAsia	0.02	0.01	-0.01	0.55	-4.13	-4.07	0.68	-4.14	-4.13
Cambodia	2.55	-0.87	0.45	2.14	-5.23	-4.74	5.18	-6.76	-4.88
Vietnam	0.46	-1.60	-1.60	8.41	-4.19	-4.19	7.02	-4.77	-4.76
Myanmar	0.30	-3.16	-2.71	1.63	-18.45	-17.94	1.93	-18.74	-17.57
Indonesia	0.15	-0.23	-0.24	0.15	-19.22	-19.23	0.62	-19.19	-19.22
Bangladesh	0.20	-0.80	-0.44	1.29	-25.71	-24.55	1.68	-17.61	-15.61
India	0.11	-0.33	-0.33	1.03	-15.65	-15.63	1.14	-10.59	-10.58
Pakistan	0.24	-0.56	-0.56	3.07	-25.81	-25.79	2.42	-13.27	-13.26
China	0.23	-0.36	-0.36	0.85	-3.25	-3.25	1.39	-3.94	-3.95
KyrgyzRepub	-0.11	-0.79	-0.79	3.18	-7.27	-7.27	1.70	-5.19	-5.19
RoSoAsia	0.00	-0.87	-0.76	0.69	-9.90	-9.37	0.28	-6.13	-5.66
RoAsia	0.29	-0.26	-0.26	-0.33	-12.02	-12.02	-0.06	-13.24	-13.24
OECDAmerica	0.00	-0.13	-0.14	0.22	-1.52	-1.52	0.13	-1.83	-1.84
RoAmericas	0.24	-0.08	-0.08	0.18	-7.78	-7.78	1.30	-7.64	-7.64
OECDEurope	-0.01	-0.13	-0.13	0.21	-0.53	-0.51	0.15	-0.81	-0.81
NorthAfrica	-0.01	-0.44	-0.44	0.75	-9.70	-9.70	0.71	-9.47	-9.47
Nigeria	-0.05	-3.57	-3.58	1.73	-4.17	-4.18	2.54	-12.25	-12.28
Senegal	-0.10	-1.00	-0.55	0.02	-18.60	-16.80	-0.22	-8.46	-6.99
RoWAfrica	-0.07	-1.38	-0.34	0.12	-17.62	-16.29	-0.08	-11.38	-8.92
CntrlAfrica	0.04	-1.02	0.19	-0.01	-7.74	-7.67	0.16	-12.28	-8.44
SCntrlAfrica	-0.03	-2.69	-1.63	0.01	-13.96	-13.41	-0.04	-14.87	-12.79
Ethiopia	-0.07	-0.63	-0.26	-0.10	-11.46	-9.88	-0.19	-5.47	-4.15
Malawi	1.15	-1.51	-1.08	2.47	-20.78	-19.72	3.54	-12.77	-11.50
Mozambique	-0.09	-1.11	-0.37	0.95	-12.03	-10.95	0.57	-10.91	-8.47
Tanzania	-0.08	-2.17	-1.78	-0.11	-29.34	-28.15	-0.31	-17.91	-16.43
Uganda	-0.07	-1.66	-0.61	-0.07	-15.52	-14.41	-0.30	-16.09	-12.17
Zambia	-0.02	-2.30	-1.44	-0.13	-20.17	-19.43	-0.13	-20.34	-18.02
Zimbabwe	0.96	-3.00	-2.39	4.46	-8.99	-8.42	5.56	-10.76	-9.39
RoEAfrica	0.33	-1.00	-0.26	0.37	-20.38	-18.97	1.27	-14.30	-11.77
SouthAfrica	0.01	-0.63	-0.61	0.34	-7.77	-7.75	0.35	-9.22	-9.14
RoSACU	1.17	-0.39	-0.39	0.41	-9.69	-9.69	2.62	-10.92	-10.91
RoW	-0.02	-0.77	-0.78	0.08	-1.94	-1.94	0.03	-3.64	-3.66

Table 8: Results for Short-Run Closure with Unemployment

Changes in Percent

	Real Absorption			Real Exports			Real GDP		
	doha	protec	protecl	doha	protec	protecl	doha	protec	protecl
OECDAsia	1.07	-8.82	-8.71	1.41	-10.37	-10.23	1.18	-9.23	-9.12
Cambodia	3.68	-8.22	-6.52	0.99	-6.08	-6.04	1.43	-5.49	-5.00
Vietnam	2.66	-7.61	-7.56	7.87	-6.90	-6.86	4.97	-6.54	-6.50
Myanmar	0.83	-9.26	-8.78	1.45	-15.81	-15.73	0.75	-7.73	-7.67
Indonesia	0.38	-11.86	-11.82	0.07	-19.88	-19.86	0.20	-12.35	-12.32
Bangladesh	0.62	-10.72	-9.71	0.86	-28.78	-27.81	0.53	-12.30	-11.49
India	0.34	-4.00	-3.98	0.90	-13.29	-13.27	0.38	-4.52	-4.51
Pakistan	0.71	-7.31	-7.29	2.16	-24.32	-24.29	0.75	-9.12	-9.10
China	0.61	-4.57	-4.53	0.53	-4.22	-4.20	0.36	-3.36	-3.34
KyrgyzRepub	0.59	-3.77	-3.75	3.43	-9.79	-9.76	1.71	-5.55	-5.53
RoSoAsia	0.09	-4.98	-4.72	0.48	-10.94	-10.48	0.17	-5.52	-5.26
RoAsia	0.49	-12.38	-12.31	-0.36	-18.73	-18.71	0.01	-14.76	-14.73
OECDAmerica	0.06	-3.30	-3.27	0.19	-4.05	-4.01	0.07	-3.28	-3.25
RoAmericas	0.65	-8.08	-8.05	0.22	-10.46	-10.45	0.48	-8.33	-8.30
OECDEurope	-0.87	-2.55	-2.48	-0.85	-2.30	-2.22	-0.95	-2.30	-2.23
NorthAfrica	0.00	-10.04	-9.98	0.55	-12.88	-12.85	0.23	-10.47	-10.43
Nigeria	0.82	-16.14	-16.06	1.35	-5.72	-5.73	0.95	-8.38	-8.36
Senegal	-0.39	-9.16	-7.65	-0.41	-24.55	-21.90	-0.36	-13.40	-11.57
RoWAfrica	-0.27	-9.85	-7.67	-0.19	-23.96	-21.46	-0.21	-13.29	-11.20
CntrlAfrica	-0.19	-11.91	-10.04	-0.13	-9.33	-9.27	-0.16	-10.08	-9.20
SCntrlAfrica	-0.01	-17.77	-16.09	-0.02	-20.23	-19.08	-0.03	-16.48	-15.34
Ethiopia	-0.19	-4.46	-3.56	-0.20	-13.15	-11.48	-0.15	-6.05	-5.10
Malawi	2.41	-18.56	-17.44	2.44	-36.38	-33.66	2.31	-24.07	-22.75
Mozambique	0.39	-12.47	-10.69	1.27	-24.56	-22.75	0.71	-14.90	-13.31
Tanzania	-0.17	-15.07	-13.93	-0.13	-35.07	-33.58	-0.12	-18.18	-17.12
Uganda	-0.17	-13.38	-10.67	-0.09	-19.08	-17.20	-0.11	-12.80	-10.66
Zambia	0.16	-24.08	-21.93	0.01	-35.73	-34.10	0.10	-27.16	-25.34
Zimbabwe	3.61	-20.04	-18.78	5.03	-25.35	-24.34	4.29	-22.63	-21.55
RoEAfrica	0.71	-13.82	-12.08	0.51	-26.81	-24.43	0.59	-16.83	-15.23
SouthAfrica	0.28	-13.84	-13.63	0.47	-16.09	-15.93	0.34	-14.48	-14.30
RoSACU	2.69	-20.32	-20.17	2.57	-25.51	-25.43	2.81	-23.38	-23.27
RoW	-0.22	-6.40	-6.35	-0.02	-2.12	-2.10	-0.13	-4.05	-4.01

Table 9: Decomposition of Absorption Effects of Short-Run protec Scenario

	protec	AgFd	Fuels	OPrim	Manuf	protec	AgFd	Fuels	OPrim	Manuf
OECDAsia	-8.82	-1.03	-3.74	-0.06	-3.63	100.0	11.7	42.4	0.7	41.2
Cambodia	-8.22	-1.84	-1.58	-0.10	-4.36	100.0	22.4	19.3	1.3	53.1
Vietnam	-7.61	-1.76	-3.01	-0.09	-2.59	100.0	23.1	39.6	1.1	34.0
Myanmar	-9.26	-2.96	-2.75	-0.86	-2.58	100.0	32.0	29.6	9.3	27.8
Indonesia	-11.86	-2.12	-3.04	-0.15	-6.18	100.0	17.8	25.7	1.3	52.1
Bangladesh	-10.72	-6.81	-0.67	-0.04	-3.23	100.0	63.5	6.3	0.4	30.1
India	-4.00	-0.62	-2.33	-0.23	-0.79	100.0	15.4	58.2	5.7	19.7
Pakistan	-7.31	-1.87	-3.03	-0.05	-2.92	100.0	25.6	41.4	0.7	39.9
China	-4.57	-0.72	-1.02	-0.05	-2.38	100.0	15.7	22.4	1.1	52.1
KyrgyzRepub	-3.77	-0.93	-0.21	-0.13	-2.17	100.0	24.8	5.6	3.3	57.6
RoSoAsia	-4.98	-1.38	-0.52	-0.12	-2.81	100.0	27.7	10.4	2.3	56.4
RoAsia	-12.38	-3.71	-2.13	-0.11	-5.89	100.0	30.0	17.2	0.9	47.6
OECDAmerica	-3.30	-0.52	-0.04	-0.03	-2.27	100.0	15.8	1.1	0.8	68.6
RoAmericas	-8.08	-1.20	-1.49	-0.17	-4.65	100.0	14.8	18.4	2.0	57.5
OECDEurope	-2.55	-0.50	0.48	-0.05	-1.93	100.0	19.5	-18.7	2.1	75.5
NorthAfrica	-10.04	-2.29	-0.66	-0.19	-6.31	100.0	22.8	6.6	1.9	62.9
Nigeria	-16.14	-6.21	-5.56	-0.19	-4.07	100.0	38.4	34.5	1.2	25.2
Senegal	-9.16	-3.71	-0.83	-0.13	-4.69	100.0	40.5	9.0	1.5	51.2
RoWAfrica	-9.85	-4.42	-0.93	-0.17	-4.21	100.0	44.9	9.5	1.7	42.7
CntrlAfrica	-11.91	-3.84	-1.20	-0.28	-5.92	100.0	32.2	10.1	2.3	49.7
SCntrlAfrica	-17.77	-3.29	-4.40	-0.21	-8.71	100.0	18.5	24.8	1.2	49.0
Ethiopia	-4.46	-1.62	0.23	-0.12	-2.68	100.0	36.3	-5.2	2.7	60.1
Malawi	-18.56	-9.01	-0.89	-0.13	-7.73	100.0	48.5	4.8	0.7	41.7
Mozambique	-12.47	-8.14	-0.02	-0.14	-3.63	100.0	65.3	0.2	1.1	29.1
Tanzania	-15.07	-4.77	-0.01	-0.16	-10.37	100.0	31.6	0.1	1.0	68.8
Uganda	-13.38	-4.72	-1.00	-0.07	-6.29	100.0	35.2	7.4	0.6	47.0
Zambia	-24.08	-7.70	-0.96	-0.33	-13.89	100.0	32.0	4.0	1.4	57.7
Zimbabwe	-20.04	-11.35	0.07	-0.81	-7.19	100.0	56.7	-0.4	4.0	35.9
RoEAfrica	-13.82	-3.45	-1.43	-0.11	-8.28	100.0	24.9	10.3	0.8	59.9
SouthAfrica	-13.84	-4.72	-0.31	-0.27	-7.80	100.0	34.1	2.2	2.0	56.3
RoSACU	-20.32	-8.54	-0.12	-0.60	-10.88	100.0	42.0	0.6	2.9	53.6
RoW	-6.40	-0.97	-1.34	-0.19	-3.54	100.0	15.2	21.0	2.9	55.2

Table 9 decomposes the welfare effects for the short-run closure by protected commodity. For instance, the *AgFd* column on the left-side panel shows the percentage change in real absorption by country if tariffs on imports of agricultural commodities and

processed food are raised to pre-Doha bound rates, while tariffs on all other goods remain unchanged. The corresponding column on the right-hand panel expresses this partial effect as a percentage of the total absorption effect due to a simultaneous rise in duties for all commodity groups.

3.3 Interaction between OECD Recession and Trade Policy Shocks

Table 10 combines the stylised simulation analysis of the impact of an OECD recession on developing countries via the trade channel in Robinson and Willenbockel (2009) with the Doha Round and protectionist response scenarios considered above. The OECD recession scenario assumes a drop in real GDP of the three OECD regions by five percent. This shock is introduced into the model through a corresponding proportional reduction in OECD primary factor endowments. Note that these simulations adopt the short-run factor market closure for the developing regions in the model but the neoclassical closure with real factor price flexibility for the OECD regions. Thus, a comparison of the *protec* results for real absorption in Tables 8 and 10 indicates, to which extent the welfare losses for developing countries in the former scenario are due to general equilibrium feedback effects associated with the contraction in OECD economic activity induced by the protection shock. For example, Nigeria's real absorption drops by 16.1 percent in Table 8 and by 11.3 percent in Table 10, and thus nearly five percentage points of Nigeria's welfare loss can be attributed to the fall in OECD real income in Table 8 – both directly as a result of falling OECD demand for Nigerian oil and indirectly through the links between OECD GDP and the income of other countries that import from Nigeria.

The combined Doha and recession scenario suggests that for a limited sub-set of low-income countries, particularly in South and South-East Asia, a successful completion of the Doha Round would compensate for the adverse trade-related equilibrium welfare effects of the OECD recession, but for the majority of developing countries Doha would only partially offset the crisis impacts through the trade channel.

However, as the protectionist response and joint recession and protection scenarios confirm, a strong reason for a speedy conclusion of the Round - more precisely, a Round that is *not* hollowed out by a plethora of exceptions - lies in the resulting reduction of

binding overhangs that would make the realization of a protectionist response scenario along the lines considered here more unlikely.[10]

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[10] Of course, LDCs that are exempted from cuts in bound rates would still be entitled to shoot their own leg in a WTO-rule-consistent manner.

Table 10: Interaction of OECD Recession and Trade Policy Scenarios

	OECD Recession	Doha	Doha and Recession	Protec	Protec and Recession
OECDAsia	-4.88	0.02	-4.86	-0.19	-5.09
Cambodia	-2.98	3.55	0.64	-4.97	-7.97
Vietnam	-2.49	2.43	-0.07	-4.17	-6.59
Myanmar	-0.89	0.76	-0.13	-7.90	-8.86
Indonesia	-1.78	0.25	-1.53	-9.40	-11.33
Bangladesh	-0.52	0.62	0.10	-10.06	-10.73
India	-0.15	0.39	0.23	-4.24	-4.48
Pakistan	-0.31	0.72	0.41	-7.26	-7.61
China	-1.84	0.52	-1.31	-1.97	-3.91
KyrgyzRepub	-0.33	0.71	0.40	-3.69	-4.15
RoSoAsia	-0.36	0.90	0.53	-4.84	-5.28
RoAsia	-3.43	0.23	-3.18	-8.23	-11.67
OECDAmerica	-4.68	0.00	-4.69	-0.20	-4.89
RoAmericas	-1.95	0.70	-1.25	-6.40	-8.63
OECDEurope	-4.78	-0.01	-4.80	-0.25	-5.05
NorthAfrica	-3.20	0.36	-2.82	-7.38	-10.86
Nigeria	-4.81	1.03	-3.77	-11.37	-15.92
Senegal	-0.93	-0.16	-1.10	-9.03	-9.95
RoWAfrica	-1.70	-0.13	-1.83	-8.31	-10.11
CntrlAfrica	-3.37	0.11	-3.26	-8.77	-12.36
SCntrlAfrica	-4.28	0.12	-4.15	-12.38	-17.01
Ethiopia	-0.67	-0.10	-0.77	-4.19	-4.97
Malawi	-1.18	2.45	1.31	-17.00	-18.64
Mozambique	-1.11	0.52	-0.57	-11.79	-13.17
Tanzania	-0.67	-0.11	-0.78	-14.44	-15.34
Uganda	-1.31	-0.11	-1.41	-11.64	-13.42
Zambia	-0.95	0.20	-0.72	-23.13	-24.55
Zimbabwe	-1.44	3.63	2.24	-18.68	-20.56
RoEAfrica	-1.52	0.81	-0.70	-12.06	-14.07
SouthAfrica	-2.28	0.45	-1.81	-11.91	-14.57
RoSACU	-2.93	3.08	0.17	-18.16	-21.31
RoW	-3.39	0.03	-3.35	-3.38	-6.81

4. Conclusion

The present WTO regulations governing the multilateral trading system leave considerable scope for rule-consistent increases in import barriers. This scope arises not only from trade remedy provisions, which allow conditional resort to anti-dumping measures, countervailing duties and safeguard measures, but also from the presence of substantial binding overhangs in pre-Doha tariff schedules.

The illustrative simulation results presented in this paper confirm that a widespread resort to WTO-rule-consistent protectionism in response to the crisis would have drastic adverse implications for developing country trade and welfare, especially if factor market imperfections are taken into account. A swift successful completion of a meaningful Doha Round – i.e. a Doha Round that is not hollowed out by a plethora of exemptions - would gradually reduce existing binding overhangs considerably and would thus reduce the threat of a WTO-compliant rise in global protection that is bound to impede a global economic recovery.

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