
An Analysis of Chile's Trade Regime in 1998 and 2001:**A Good Practice Trade Policy Benchmark**

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Abstract

This note analyzes Chile's trade regime in 1998 and 2001, using the methodology developed by Hinkle et al. (2003) in "How Far Did Africa's First Generation Trade Reforms Go? An Intermediate Methodology for Comparative Analysis of Trade Policies." The methodology, through a quantitative assessment of the conventional border instruments of trade policy, leads to an estimate of the *B* index of anti-export bias originally proposed by Bhagwati (1978) and Krueger (1978). We find that Chile's trade regime is the most open among the countries analyzed to date with this methodology. While Chile was already the best performer in 1998, the unilateral trade liberalization undertaken by the government since then led to even lower anti-export bias in 2001.

Given its liberalization record, Chile provides a good practice policy benchmark for the analysis of trade regimes in other countries. All trade policy instruments seem to be in place to minimize the anti-export bias: low maximum and average tariffs; absence of foreign exchange restrictions, non-tariff barriers and export taxes; and timely VAT and import duty reimbursement schemes to give exporters' access to tariff and indirect-tax free inputs .

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**An Analysis of Chile's
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Policy Benchmark*

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July 2004

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Executive Summary

This note analyzes Chile's trade regime in 1998 and 2001, using the methodology developed by Hinkle et al. in "*How Far Did Africa's First Generation Trade Reforms Go? An Intermediate Methodology for Comparative Analysis of Trade Policies.*" The methodology, through a quantitative assessment of the common border instruments of trade policy, leads to an estimate of the B index of anti-export bias originally proposed by Bhagwati (1978) and Krueger (1978). In the Bhagwati (1978) and Krueger (1978) study, the B index is defined simply as the ratio of domestic import prices to domestic export prices. However, for this index to fully reflect the anti-export bias of trade policies, it is necessary to take into account the common border instruments of trade policy, as is done in the Hinkle et al. (2003) methodology. Hinkle et al. (2003) apply the methodology to a sample of 13 African countries (original sample). Because of their good liberalization records, Chile and Bolivia are analyzed to obtain empirical benchmark good practice trade policies for middle and low-income countries respectively.

The trade liberalization record and the "export-led growth" experience of the Chilean economy make it a useful benchmark for good practice trade policies. The analysis of Chile's trade regime reveals that a combination of good practices in all areas of trade policies leads to its openness. On the import side, low uniform tariffs, respectively 11% in 1998 and 8% in 2001, along with absence of non-tariff barriers and discriminatory taxation against imports lead to Chile's very low nominal and effective protections rates. On the export side, low tariffs on inputs, absence of export taxes, and minimum delays in the VAT and duty reimbursement procedure minimize disincentives to exporters. All these elements, paired with continued macroeconomic attention to export competitiveness and increased export diversification, play a crucial role in Chile's trade performance.

Unsurprisingly, the estimation of the anti-export bias (B and B^* index) confirms the reputation of Chile's trade regime policy for openness. While Chile's trade regime in 1998 was already the most open among the ones analyzed to date with the B -index methodology, additional unilateral trade liberalization and the unification of the exchange rate further reduced its anti-export bias in 2001. The B^* index, calculated to be 1.25 in 1998 and 1.18 in 2001, is substantially lower than the 1.8 of the best performer in the original sample, namely Uganda (1997). If Chile levied a uniform tariff of 12.9 percent (the median observed import-weighted average tariff and surcharges on dutiable goods for the original sample) for revenue-raising purposes, but had otherwise no trade restrictions, its B index would be 1.13, a level only slightly lower than the B index estimated for 2001.

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Basic Economic Data

	1980	1990	2000	2001	80-90	90-00	00-01
	levels				growth rates		
Population (mn)	11.1	13.1	15.2	15.4	1.7	1.5	1.3
GDP at market prices (current US\$, bn)	27.6	30.3	75.5	66.5	1.0	9.6	-12.0
GDP at market prices (current LC, bn (000))	1.1	9.2	40.4	42.1	24.0	15.9	4.3
GDP at market prices (constant 1995 US\$, bn)	29.7	43.0	80.7	82.9	3.8	6.5	2.8
Per capita GDP (current US\$,bn)	2.5	2.3	5.0	4.3	-0.7	7.9	-13.1
Per capita GDP (constant US\$,bn)	2.7	3.3	5.3	5.4	2.1	4.9	1.5
GNI per capita (current US\$,bn)	2.3	2.2	4.8	4.6	-0.3	8.2	-4.4
GDP deflator Index (1986 = 100)	35.0	206.0	481.0	488.0	..	8.8	1.5
Exports of goods and non-factor services f.o.b. (current US\$, bn) <i>of which</i>	6.3	10.5	22.5	23.0	5.3	7.9	2.6
Merchandise exports (current US\$, bn)	4.7	8.4	17.9	18.1	5.9	7.9	0.9
Non-factor service exports (current US\$, bn)	1.6	2.1	4.6	5.0	3.0	8.0	9.0
Exports of goods and non-factor services (% of GDP)	22.8	34.6	29.8	34.7	..	..	..
Exports of goods and non-factor services (constant 1995 US\$, bn) <i>of which</i>	6.7	12.1	29.7	32.5	6.1	9.4	9.7
Merchandise exports (constant 1995 US\$, mn)	..	..	..	..	..	..	..
Non-factor service exports (constant 1995 US\$, mn)	..	..	..	..	..	..	..
Share of top 3 commodities in merchandise exports	52.0	57.0	48.0	47.0	..	-1.7	-2.1
Export as capacity to import (constant LC, bn (000))	1.1	1.7	4.4	4.4	4.5	9.6	1.3
Real growth of non-traditional exports	..	..	..	..	21.7* a)	12.7 a)	..
Imports of goods and services c.i.f. (current US\$, bn) <i>of which</i>	7.4	9.5	21.7	21.7	2.5	8.6	-0.1
Merchandise imports (current US\$, bn)	5.8	7.7	17.0	16.3	2.9	8.2	-4.1
Non-factor service imports (current US\$, bn)	1.6	1.8	4.7	5.4	0.7	10.3	14.4
Imports of goods and non-factor services (% of GDP)	27.0	31.3	28.8	32.7	..	..	..
Imports of goods and non-factor services (constant 1995 US\$, bn) <i>of which</i>	7.7	9.2	24.5	24.2	1.8	10.4	-1.3
Merchandise imports (constant 1995 US\$, mn)	..	..	..	..	..	..	..
Non-factor service imports (constant 1995 US\$, mn)	..	..	..	..	..	..	..
Total trade (current \$, bn)	13.7	20.0	44.2	44.7	3.8	8.2	1.3
Total trade (constant \$, bn)	14.4	21.3	54.2	56.7	4.0	9.8	4.7
Total trade % GDP	49.8	66.0	58.5	67.3	..	..	..
Terms of trade (goods and non-factor services) (1995 = 100)	97.0	83.0	86.0	79.0	-1.5	0.4	-8.1
Gross fixed capital formation (% of GDP)	17.0	23.0	21.0	21.0	..	..	..
Gross fixed capital formation (constant 1995 US\$, bn)	5.2	8.1	17.6	18.0	4.5	8.1	2.0
Official exchange rate (LCU per US\$, period average)	39.0	305.0	535.0	635.0	..	5.8	18.7
Real effective exchange rate index (1990 = 100)	199.0	100.0	125.0	114.0	..	2.3	..

Source: SIMA, Regional data base.

* average growth (1986-1989)

a) Source: Ffrench-Davies (2002). Main non-traditional exports are processed food, seafood and wine.

An Analysis of Chile's Trade Regime in 1998 and 2001: A Good Practice Trade Policy Benchmark

1. Introduction

Hinkle et al. (2003) in “*How Far Did Africa's First Generation Trade Reforms Go? An Intermediate Methodology for Comparative Analysis of Trade Policies*,” analyze a sample of 13 countries, hereafter referred to as the original sample. The methodology permits a quantitative instrument-by-instrument assessment of the conventional border instruments of trade policy. Measuring the impact of each policy instrument on the average prices of import-competing and export goods, the methodology leads to an estimate of the B index of anti-export bias originally proposed by Bhagwati (1978) and Krueger (1978).

In this note, we use the methodology by Hinkle et al. (2003) to analyze the trade regime of Chile in 1998 and 2001. Given Chile's trade liberalization record, this note aims at providing an empirical benchmark of good practice trade policies for other countries, to be complemented by a forthcoming note analyzing the trade regime of Bolivia in 2001.

The structure of the note generally follows that of the original paper by Hinkle et al. (2003). The common components of trade policy (the foreign exchange regime, non-tariff barriers, discriminatory domestic taxation, tariffs, and the export regime) are discussed in order below. The presentation of the overall measure of the restrictiveness of the trade regime (B and B^* indices) follows this discussion. Readers are referred to the original paper by Hinkle et al. (2003) for explanations of the methodology as well as for the derivations of the variables used in the evaluation. Tables summarizing the quantitative findings are in the appendix.

2. Trade Reform and Performance: An Overview

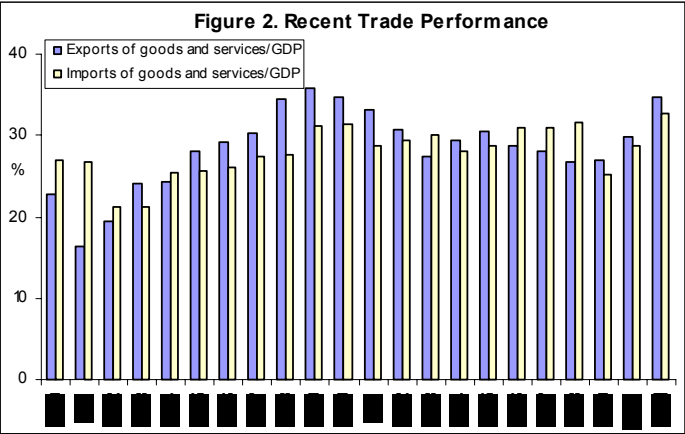
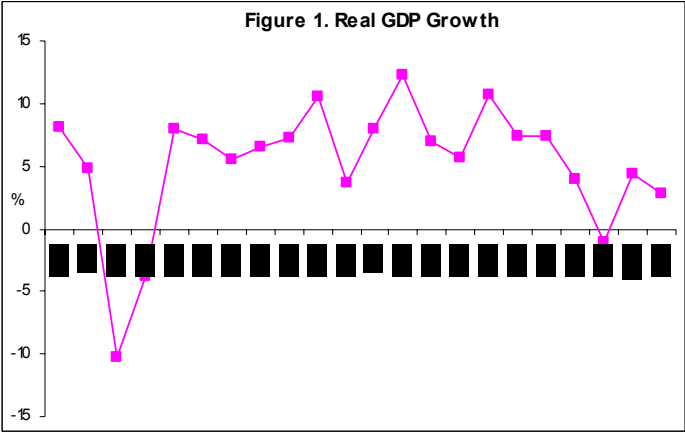
Chile started to undertake trade liberalization policies in the mid-70s in the wake of increasing economic difficulties, following an increase in the price of oil (of which Chile was a net importer), and a substantial reduction in the price of copper, its main export commodity. These events, together with limited access to international financial markets and mounting borrowing needs, led the government to embark on a profound market-oriented reform program. This program encompassed fiscal adjustment, tax reforms, trade liberalization measures, and a comprehensive privatization program, as well as financial system and labor market reforms.

To open up to international trade, Chile opted for the dismantling of quantitative restrictions and the reduction of existing tariff rates. At the onset of the program in 1973, tariff rates averaged almost 100% (with tariff peaks at 220%) and were highly dispersed, quantitative restrictions were pervasive, and a multiple exchange rate system was in place. By 1976, the average tariff was 33% (maximum rate at 65%)¹. By the end of 1979, a uniform import duty of 10% had been adopted.

¹ See Edwards and Lederman (2002) for further details.

As a result of economic difficulties at the beginning of the 80s, the uniform tariff rate was increased to 35% and variable levies, based on a price-band mechanism, which provided price thresholds for wheat, sugar and vegetable oils were re-introduced². However, by the early 1990s, the average tariff rate was back down to 11%. In contrast to the surge in tariff rates, which was only temporary, the system of variable levies (price bands) on wheat, edible vegetable oils and sugar has been maintained to date in order to contain the impact of international price volatility on these three domestic import-competing sectors and to protect them.

Since the late 70s, Chile's economy has been highly open to international trade. Its degree of trade openness, measured as the ratio of the sum of imports and exports of goods and non-factor services (GNFS) to GDP, increased from 50% in 1980 to almost 70% in 2001. Goods and services have maintained constant shares of export value over time, respectively 80% and 20%. Figures 1 and 2 show recent growth and trade performance. Economic growth has been strong, with an average annual growth rate of 4% in the 1980s and 6.5% in the 1990s.



² Originally introduced in 1977, price bands had been dismantled in 1978.

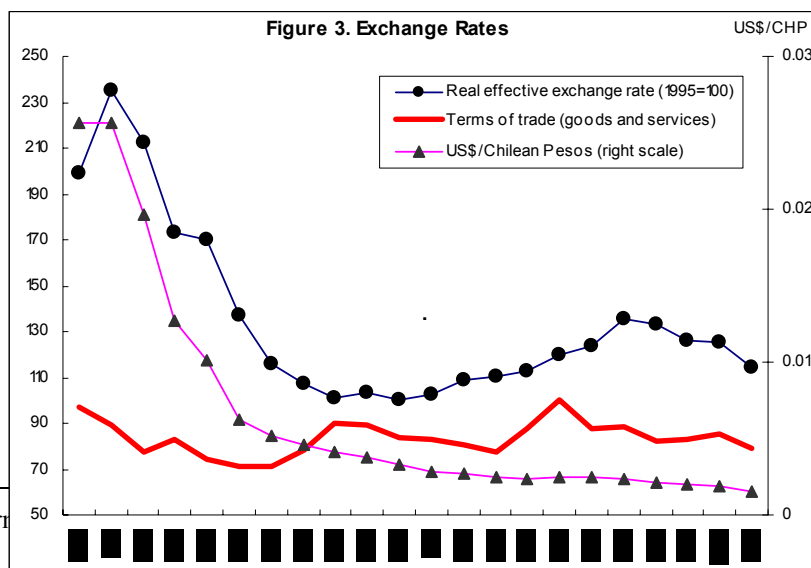
The evolution of the terms of trade, with hikes in the price of copper between 1987-88 and 1993-1995 (Figure 3), helps explain the fluctuations in the export value of traditional items and overall export performance. The exports of GNFS show a good volume and value (US dollar terms) performance throughout the 90s, with average growth rates of 9.4% and 8% respectively. Declining export prices account for the weaker nominal export growth in 2001 (2.6%). The imports of GNFS also display a strong growth in the 90s, 10.4% in real terms and 9.4% in nominal terms. The decline in 2001 was a result of sluggish economic activity (2.8% growth rate).

Progress in trade liberalization was accompanied by constant attention by the Chilean policy makers to export competitiveness. The evolution of the exchange rate policy in the last 20 years confirms its aim to avoid misalignments in the real exchange rate and to foster non-traditional exports. While Chile has traditionally been dependent upon copper exports³, exports of non-traditional goods - processed food, seafood, and wine - have grown faster than those of copper and other minerals. According to Ricardo Ffrench-Davis (2002), non-traditional exports made up just over 10% of total exports in 1970, whereas in the second half of the 1990s they accounted for about 35%. The share of copper in merchandise exports declined from 70% in 1970 to below 40% in the late 1990s. The share of non-copper traditional exports-fresh fruit, fishmeal, wood pulp and paper- also increased from 24% in 1970 to 30% in late 1990s.

In 1998, the year for which Chile's trade regime was first analyzed using this methodology, the government was engaged in a phased reduction of the uniform duty by one percentage point a year from 11% (1998) to 6% (2003). In both 1998 and 2001, Chile's trade regime ranks as the most open among the ones analyzed to date with the methodology developed by Hinkle et al. (2003). The estimation of the degree of trade restrictiveness, the B^* , indicates that the anti-export bias of its trade regime, 1.25 in 1998 and 1.18 in 2001 respectively, was almost one half of the median value (i.e., 2.2) of the original sample, and substantially lower than 1.8, the B^* estimated for Uganda (1997), the best performer in the original sample.

3. The Foreign Exchange Regime and Controls

Chilean authorities generally succeeded in ensuring export competitiveness, except in the first half of the 1990s (Figure 3).



³ The state-owned firm

Source: WDI.

Note. Decrease=depreciation.

After the experience of the 70s, when the fixed nominal exchange rate, used to fight inflation, resulted in a strong real appreciation, a crawling peg to the dollar was adopted in 1983. The latter involved an adjustment (devaluation) of the nominal exchange rate in line with the differential between domestic and foreign inflation rates. Between 1981 and 1990, as a result of a series of devaluations undertaken by the government after the 1982 debt crisis, the real exchange rate experienced a marked depreciation (about 60%). Figure 3 also suggests that the real exchange rate (RER) might have reached an equilibrium level around 1990. The depreciation trend of the 1980s was reversed when, in the first half of 1990s large capital inflows, mainly foreign direct investments, led to a 35% real appreciation. At this time, authorities decided to peg the peso to a basket of currencies including the dollar, the yen, and the mark. The tendency towards appreciation came to a halt with the 1997 international financial crisis and the real exchange rate depreciated by 16% between 1997 and 2001.

In 1999, the nominal exchange rate was allowed to float freely. This regime-change (crawling peg to free float) relieved the Central Bank (CB) from continued intervention and contributed to the new monetary policy-framework according to which the independent CB followed an inflation-targeting regime.

Two foreign exchange markets existed, an official and an informal one, until 1999 when the rates were unified. The different exchange rates prevailing in the two markets gave rise to a parallel market premium. This premium was estimated to be about 9%⁴ in 1998. The elimination of the parallel market premium contributed, along with tariff reduction, to a lower anti-export bias in 2001. As noted above, exchange rate policy also changed between 1998 and 2001 as Chile moved from a crawling peg to a free float. Importers can now freely buy foreign exchange, and there are no foreign exchange repatriation requirements for exporters.

4. Quantitative Restrictions and Other Non-Tariff Barriers to Imports

No quantitative restrictions (import or export) were in place in 1998 or 2001, except for some on the import of used motor vehicles. This was for environmental reasons. There were no import or export monopolies.

5. Discriminatory Domestic Taxation

No discriminatory taxation against imports existed in 1998 or 2001. Value added and excise taxes were applied at equal rates to both domestic and imported commodities.

⁴ Data from Reinhart and Rogoff (2002) were used in the estimation.

6. Tariff Regime

6.1. Preferential arrangements (PTA)

In the 1990s, Chile signed trade agreements with Canada, Mexico, and Central and South America (Bolivia, Peru, Colombia, Venezuela and Ecuador). An Association Agreement with MERCOSUR (Argentina, Brazil, Paraguay and Uruguay) went into effect in October 1996. In 2002, the year after our second evaluation of Chile's trade policies, a PTA with the EU was also signed. In December 2002, negotiations for a PTA with the USA were concluded.

The effect of preferential trade agreements on domestic prices depends upon which countries supply the commodities concerned. For homogeneous commodities, there would be only one price for an imported commodity, and the country that is the marginal supplier of the commodity would determine its price. If a homogeneous good is imported under both the MFN and preferential regimes, the tariff rate that would be reflected in domestic prices is the MFN rate, as the rest of the world is the marginal supplier. A minimum import share of 15% is used to qualify a MFN country as the marginal supplier of a homogeneous good (a share below 15% is assumed for non-homogeneous goods). If the good is imported only under the PTA regime, the relevant rate is the PTA rate.⁵ In 2001, imports from countries with which Chile had implemented PTA agreements represented 40% of total imports.

6.2. Tariff Rates

In 1998, Chile had two applied MFN tariff rates: 0 and 11%.⁶ The 0% rate applied to imports of books according to the Uruguay international convention, and the 11% applied uniformly to all other imports.⁷ All Chile's tariffs were bound in the WTO at 25%, with the exception of wheat, flour, vegetable oils and sugar which were bound at 31.5%. The government re-negotiated with the WTO an increase in the bound tariff rate for sugar to 98%.

In 1999, the government embarked on a unilateral liberalization plan to systematically reduce the uniform import duty from 11% to 6% in 2003. As a one percentage point reduction per year was implemented, in 2001 import duties were 0% for books and military equipment, and 8% for the rest of imports. The fall in both the unweighted average tariff and surcharges (hereafter tariff &sc) and the import-weighted average tariff (from 10.9 % in 1998 to 8% in 2001) reflects a reduction in the uniform rate (see Table 1 below).

Table 1: Average Tariffs and Surcharges (sc)

Year	Maximum tariff &sc	Unweighted average tariff &sc on dutiable imports	Import-weighted average tariff &sc
------	--------------------	---	------------------------------------

⁵ See Hinkle et al. (2003) for details.

⁶ These rates do not apply to imports subject to lower preferential rates under the trade agreements signed by Chile.

⁷ A special regime was in place for installment payment of duties on imports of capital goods until 1998. Duties could be paid in three installments during a seven-year period, in the third, fifth and seventh years respectively. This scheme was akin to a credit for importers and, as such, interest was charged on the installments priced in US dollars. The relevant interest rate was equal to the Central Bank rate for credits in US dollars. In 1998, the government decided to dismantle this credit regime and imports of capital goods since 1998 have been subject to the uniform tariff. Payments under the regime will be completely phased out in 2005, when the last deferred payment (i.e., seventh year allotment) for the capital goods imported in 1998 will be due.

		All goods	Consumer goods	Intermediate goods	Capital goods	
1998	11.0	11.0	11.0	11.0	11.0	10.9
2001	8.0	8.0	8.0	8.0	8.0	8.0

Source: Authors' computations based on data obtained from authorities of the countries.

6.2.1. Variable Levies

As noted in the introduction, to protect selected import-competing agricultural products whose prices are determined internationally, and stabilize their domestic prices, Chile applies, in addition to the statutory uniform ad-valorem rate, variable levies on imports of wheat, wheat flour, edible vegetable oils, and sugar. These are determined on the basis of a price-band mechanism (henceforth, PBM), whose functioning is described in detail in Annex 1.⁸

The presence of variable levies is reflected in the unweighted average nominal protection tax rates (NPTR) and the nominal protection rates (NPR) for import-competing goods. The nominal protection tax rate (NPTR) takes into account all the various types of import tariffs and surcharges (t), discriminatory domestic indirect taxes (n), and reference prices but not the tariff equivalents of non-tariff barriers (PR). The nominal protection rate (NPR) is the sum of the NPTR and PR. For Chile, given the absence of non-tariff barriers, the NPTR and the NPR are equivalent.

The unweighted average NPTR for all domestically produced import-competing goods was 12.7 in 1998 and 10.7 in 2001. The output-weighted average was somewhat lower (see Table 2 below and Table A7 in the Appendix). Despite the uniform duty, tariff dispersion, as indicated by the standard deviation of the NPTR, is significant (6.9 in 1998 and 9.3 in 2001) because of the presence of variable levies. Without the variable levies, standard deviation would have been 0, the theoretical optimum.

Table 2: Average Nominal Protection Tax Rates (NPTRs) and Average Nominal Protection Rates (NPRs) on Domestically Produced Import-Competing Goods (%)

Year	Overall	Consumer goods	Intermediate goods	Capital goods	Std. deviation of overall NPTR
With PBM	Unweighted				
1998	12.7	13.4	12.3	11.0	6.9
2001	10.7	12.6	9.3	8.0	9.3
	Output-weighted				
1998	12.2	12.3	12.0	11.0	6.9
2001	9.5	10.2	8.9	8.0	9.3
Without PBM	Unweighted and Output-weighted ^a				

⁸ Challenged by Argentina, the price bands were ruled inconsistent with Chile's World Trade Organization obligations in 2002, and the government introduced legislation to modify them. Chile has been given up to December 2003 to comply with the WTO's ruling. Chile will have to phase out the price bands within 12 years under the terms of the U.S.-Chile FTA.

1998	11.0	11.0	11.0	11.0	0
2001	8.0	8.0	8.0	8.0	0

Source: Authors' computations based on data obtained from authorities of the countries.

• NPTRs and NPRs are equivalent because of the absence of NTBs.

^a Unweighted and output-weighted averages are the same.

6.2.2. Escalation of Tariffs

In marked contrast to the original sample, there was very little escalation of tariffs by degree of processing in Chile (Table 2) because of its uniform tariff. In 1998, the unweighted average NPTR for consumer goods,⁹ 13.4%, was only 2.5 percentage points higher than that on capital goods (11%) despite the reduction in uniform tariff. The escalation was steeper in 2001 with the NPTR on consumer goods, 12.6, almost 5 percentage points higher than that on capital goods (8%) because of the PBM.

In Table 2, besides the unweighted and output-weighted average NPTR by economic use, we also report the average NPTRs in the absence of PBM. The analysis of the indicators reveals the higher degree of protection for domestically-produced import-competing goods brought about by the PBM and highlights the fact that output-weighted averages, which assign appropriate weights to the variable levies, provide a more accurate measure of the average protection granted to import-competing goods. The presence of variable levies results in a 2 percentage point increase in the overall unweighted NPTR in 1998 and a 3 percentage point increase in 2001. The difference is reduced when output-weighted averages are considered (1.2 and 1.5 percentage point increase respectively in 1998 and 2001).

6.3. Non-Dutiable Imports and Tariff Exemptions

Non-dutiable imports, i.e., goods imported by government agencies, NGOs, embassies, etc., amounted to 0.3% of total imports in 2001, a much lower value than the median of the original sample estimated at 27.2%. There were no tariff exemptions, another sharp contrast to the countries in the original sample.

6.4. Tariff Revenues

As a result of trade liberalization, the government's dependence on tariff revenues has been declining overtime. In 1998, tariff revenues represented 2.2% of GDP and 2% of GDP in 2001 (see Table 3). However, the latter corresponds to the median value of tariff revenue collections in the original sample. Thus, even in the presence of low tariffs, Chile has a similar ratio of tariff revenues to GDP to that of countries which apply very much higher tariff rates. The reasons might be traced to the higher degree of openness of the Chilean economy (ratio of merchandise imports to GDP is estimated at 26% in 2001), much smaller share of non-dutiable imports, and the absence of tariff exemptions. Collection rates on dutiable imports were estimated to be 9.4% in 1998 and 5.5% in 2001 and the collection percentage, calculated as the

⁹ Among the goods protected by the PBM, sugar and vegetable oils are classified as consumer goods and wheat and wheat flour as intermediates.

ratio between actual and potential revenue, was about 100% in both years, because there were no exemptions.
tariff

Table 3: Tariff Collections

Year	Tariff & sc revenues as % of GDP	Tariff & sc revenues as % of tax revenues	Collection rate on all imports ^a	Non-dutiable imports as % of total imports	Exemptions as % of dutiable imports	Collection rate on dutiable imports ^b	Collection percentage ^c
1998	2.2	13.5	9.3	n.a.	n.a.	9.4 ^d	100
2001	2.0	11.6	5.4	0.3	0	5.5	100

Source: Authors' computations based on data obtained from authorities of the countries.

n.a. =Not available

- Collection rate is the ratio of all tariff revenues to total value of merchandise imports.
- Collection rate is the ratio of tariff revenues from dutiable imports to total value of merchandise dutiable imports.
- Collection percentage is the ratio of actual to potential revenues where the potential revenue is the sum of foregone and actual revenues collected from dutiable imports. Foregone revenues are computed by multiplying the total value of exemptions by the import-weighted average tariff & sc rates (and subtracting any revenues collected from partially-exempt imports).
- As data were unavailable for 1998 to estimate the collection rate on dutiable imports, we assumed that the shares of non-dutiable imports in total imports and exemptions in dutiable imports were the same as in 2001.

6.5. Effective Protection Rates for Import-Competing Goods

In Hinkle et al. (2003), the measure of the effective protection for the import-competing sectors is computed in a number of ways. Effective Protection Rates (EPRs) are estimated using the input-output (I-O) table when available as well as using a standard assumption that the domestic value added in manufacturing is 40% and in agriculture 88%. EPRs estimated using this standard assumption are referred to as *indicative* EPRs. The use of a standard assumption was dictated by the fact that I-O tables were not available for all the original sample countries. Here, we follow the original methodology and calculate both indicative EPRs and EPRs based on I-O tables (see Table 4).

Table 4: Effective Protection Rates for Import-Competing Goods

Year	Manufacturing				Agriculture			
	Indicative EPR (standard coefficients)		EPR based on IO data		Indicative EPR (standard coefficients)		EPR based on IO data	
	Unweighted	Output-weighted	Unweighted	Output-weighted	Unweighted	Output-weighted	Unweighted	Output-weighted
1998	15.4	13.4	14.3	12.3	12.3	18.0	12.1	20.0
2001	15.2	11.5	12.7	10.0	9.0	14.0	9.4	15.7

Source: Authors' computations based on data obtained from authorities of the countries.

Indicative output-weighted EPRs for manufactures are 13.4% in 1998 and 11.5 in 2001 and for agriculture are 18% in 1998 and 14% in 2001.¹⁰ The use of output-weighted averages reduces the estimated impact of variable levies (which are weighted against by their share of import-competing production).

If the output-weighted indicative EPRs are considered, an *anti-manufacturing bias* (i.e., the difference between the EPR on agriculture and that on manufactures) of about 5% in 1998 and 3% in 2001 emerges. This *anti-manufacturing bias* is confirmed by the estimations based on the input-output data and is about 8% in 1998 and 6% in 2001. In contrast, the original sample displays very large *anti-agricultural biases*, whose median value is estimated at 64 percentage points.

6.6. Corruption and Inefficiency in Customs Administration

As noted in Hinkle et al. (2003), inefficiency and corruption in customs administration and other institutions create distortions and restrict trade. Because of the difficulty in obtaining data to quantify this effect, we simply note the measure of corruption reported by Transparency International (TI). While the latter is a comprehensive indicator of the perception of government corruption by business enterprises, it is not unreasonable to assume that it is positively correlated with the corruption and inefficiency in institutions governing international trade.

The TI Perception of corruption index improved between 1998 and 2001 as Chile moved from 20th to 18th out of 91 countries surveyed by Transparency International. In 2001, similar scores were given to United States and Germany. Chile ranks far better than the original sample, in which the median country was ranked 55th and the best country (South Africa) ranked 32nd (see Table A12).

7. The Export Regime

No export taxes and monopolies existed in 1998 and in 2001. In 2001, the measures providing exporters duty-free inputs encompassed duty drawbacks, duty suspension regimes, bonded warehouses, and free trade zones for export processing. We describe these in order below.

Fixed Duty Drawback (or “simplified” drawback). Introduced in the mid-80s, eligibility for the fixed drawback scheme requires a percentage of imported inputs equal to or higher than 50% of the value of production. At the time when this scheme was implemented, the import duty was 20% and the exporter received a fixed drawback set at 10% of the FOB price, for export of less than US\$ 10 million for the whole tariff line. When the uniform import duty was reduced to 11%, the amount of the drawback was not adjusted so that an element of subsidy emerged. For export values between US\$ 10 and US\$ 15 million, the drawback was 5% and for values between US\$ 15 and US\$ 20 million, 3%. No fixed drawback was provided for export values higher than US\$ 20 million.

¹⁰ NPTR on agriculture was used in the calculation of the EPR as a proxy for the tariff on non-fertilizers agricultural inputs.

In 1998, after complaints to the WTO, the 10% drawback rate was reduced to 6% in 2001 and is scheduled to reach 3% in 2003. The reimbursement of import duties paid on imports of inputs takes about 5 days, a much shorter delay than in the original sample countries.

Non-fixed Duty Drawback. Under this scheme, exporters need to provide the authorities with the share of imported inputs in their exports. Reimbursement of duties takes on average 90 days. Several factors (such as low import duties on intermediate goods, delays in reimbursements and the necessity to provide input-output ratios) contribute to the lack of incentives for exporters to use this scheme.

Import Duty Suspension Regime. For imports of inputs not exceeding 50% of the value of production, exporters can automatically avail themselves of import duty suspension. Beyond the 50% threshold, approval is required. The regime is rarely used by exporters. One plausible explanation might be that, given the relatively low import duty and the administrative costs involved in using this scheme, firms are more likely to opt for the (fixed) duty drawback.

EPZs/Bonded Warehouses. Incentives granted by the legislation regulating free trade zones are in operation only for imports by firms with bonded warehouses.

VAT reimbursement for exporters. The reimbursement of the payment of VAT on purchases of inputs and capital goods is readily available to firms of all size and takes less than 5 days.

7.1. Effective Protection Rates for Exports

We calculate the effective protection rates (EPRs) for the exportable sector on the basis of 1996 input-output data. Effective protection rates are estimated without the use of a non-fixed duty drawback given the fact that, as noted above, exporters do not use it.¹¹ Estimations with a non-fixed duty drawback system are reported in Annex 2.

Chile shows almost the same EPR for manufacturing exports but a lower EPR (larger negative number) for agriculture exports if compared to Uganda, the best performer in the original sample, with EPRs respectively of -3.1 for manufacturing and -1.7 for agriculture.

Table 5: Effective Protection Rates for Exports

Year	Overall Exports		Manufactured Exports		Agricultural Exports	
	Unweighted	Output-weighted	Unweighted	Output-weighted	Unweighted	Output-weighted
1998	-3.5	-2.9	-3.4	-2.8	-4.6	-4.7
2001	-2.6	-2.1	-2.6	-2.1	-3.4	-3.5

Source: Authors' computations based on data obtained from authorities of the countries.

¹¹ The EPR for manufactures is calculated without taking mining (mainly copper) exports into account. If the latter are included, the unweighted EPR would be -3.0 in 1998 and -2.3 in 2001.

8. The B Index

8.1. Definition of the B index

This section gives a summary measure of the degree of trade-restrictiveness, using the *B* index proposed by Krueger (1978) and Bhagwati (1978). The *B* index is probably the best single summary indicator of the impact of trade policies on price incentives because it measures the combined effects of various trade policies on the relative prices of importable and exportable goods and, hence, on the overall implicit taxation of tradable activities. Our measure of the *B* index aggregates the estimated effects of the various individual trade policy instruments on the relative prices of import-competing and export goods. It summarizes all of the quantitative information that we have on the distortions caused by the foreign exchange, import, and export regimes. The *B* index is computed as follows:

$$B = \frac{E_m(1 + t + n + PR)}{E_x(1 + s - t_I + r)}$$

where E_m and E_x are the nominal exchange rates applied to imports (m) and to exports (x); t is the average import duty, n is any additional differential domestic taxation of imports, PR is the estimated differential between the domestic and border prices of importable commodities subject to NTBs, s is any export subsidy ($s > 0$) or export tax ($s < 0$), t_I is the average tax and duty on tradable inputs used in production of exportable goods (that is, the tax rate on inputs multiplied by the shares of these inputs in total production costs), and r is any import duty rebate granted to producers of exportable goods.

This index can be computed using nominal protection rates or value added prices: we refer to the first measure as the *B* index and to the second measure as the *B** index. For the *B* index, in the numerator we use the NPTR on manufacturing sector for $t+n$. The NPTR plus PR equals NPR. For the export side in the denominator, there are no subsidies¹² or export taxes, and an overall average for all exports is estimated for t_I (see Table A14c in the Appendix for details). For estimating r , we ignored the non-fixed drawback scheme because exporters, as noted above, do not use it. In Annex 2, B indices are estimated assuming a non-fixed duty drawback. The comparison between the B indices calculated with and without drawback suggests that the use of the drawback scheme would involve no significant difference in the anti-export bias because of Chile's low tariff rates. For computing *B** index, we use the EPR on the import-competing manufacturing sector for $t+n+PR$ in the numerator and the EPR on the export sector for $s-t_I+r$ in the denominator.

The *B* and *B** indices are calculated using import policy for manufacturing goods in the numerator and export policy for all goods in the denominator. Although there are other ways to calculate the *B* index, this method appropriately takes into account the (intentional) resource allocation biases in favor of import-competing manufacturing and against agriculture and exports that are a typical feature of most trade policy regimes observed in developing countries. Since trade policies in our sample countries were designed primarily to protect the import-competing manufacturing sector, we consider this measure to be a reasonable summary of the trade regime.

¹² The WTO (2003) reports that Chile maintains various schemes involving subsidies to promote exports. However, to the best of our knowledge, there were no subsidies in 1998 or 2001.

Alternative ways of computing the B (and B^*) indices are reported in Tables A14a and A15.

A B index higher than one, as is usually the case, indicates the degree to which trade policies favor import-substitution relative to exporting. If the B index is equal to one, then on average trade policies are neutral between import-competing and exporting. And, if B should turn out to be less than one, then the trade regime is partial to exporting rather than to import-competing activities.

Table 6: B and B* Indices – Sensitivity Analysis

Year	B Index		Standard ^b B^* Index		I-O data B^* Index	
	Unweighted	Output-weighted	Unweighted	Output-weighted	Unweighted	Output-weighted
1998						
-with PBM ^a	1.23	1.22	1.25	1.22	1.24	1.21
-without PBM	1.21	1.21	1.20	1.19	1.21	1.21
2001						
-with PBM	1.14	1.13	1.18	1.14	1.16	1.12
-without PBM	1.11	1.11	1.10	1.10	1.11	1.11
2003 ^c projected						
-with PBM	1.12	1.09	1.16	1.09	1.13	1.10
-without PBM	1.07	1.07	1.08	1.08	1.08	1.08

Source: Authors' computations based on data obtained from authorities of the countries.

- PBM: price band mechanism.
- For import-competing sectors, (*indicative*) EPRs are estimated under the assumption that the domestic value added in manufacturing is 40% and in agriculture 88%.
- The computations for 2003 assume the unilateral liberalization undertaken by the government, i.e., reduction of the uniform tariff rate (6% in 2003), as being the only change in the trade regime that occurred between 2001 and 2003.

8.2. Chile's Measured B index

Chile's B index recorded a 7% reduction between 1998 and 2001, passing from 1.23 to 1.14 (unweighted) and from 1.22 to 1.13 (output-weighted). Both these values are much lower than the median value of the original sample, 1.6, and those of Uganda and South Africa, 1.5, the best performers in the sample.

The B^* index also decreased by about 6% from 1.25 in 1998 to 1.18 in 2001. When output-weighted effective protection rates are used, the reduction in the B^* index is about 7%, from 1.22 (1998) to 1.14 (2001).¹³ Table A15 shows that Chile has a much lower B^* index than Uganda, with a B^* of 1.8, and the median value of the original sample estimated at 2.2.

¹³ Unlike the original sample for which B indices were only estimated to one decimal place because of limited accuracy of data, here estimations to two decimal places are reported, thanks to better quality of data available for Chile and Bolivia. The use of two decimal places allows us to evaluate the much smaller differences in the indicators in Chile and Bolivia.

To determine the impact of *variable levies* on the anti-export bias of Chile’s trade regime, we carry out a simulation exercise assuming away the PBM. Under this assumption, the B^* index is estimated to be 1.21 in 1998 and 1.11 in 2001. The resort to the price band mechanism leads to 2% and 3% increases in the anti-export bias in 1998 and 2001 respectively, with respect to the case where no PBM is in place. Unsurprisingly, given its trade liberalization record, the comparison of the B and B^* indices across all the countries analyzed to date confirms that Chile has one of the least distortionary trade regimes.

To gauge the effect of the unilateral trade liberalization undertaken by Chile since 2001, B and B^* indices are estimated for 2003 under the assumption that the reduction in the uniform tariff rate to 6% is the only change that occurred in the trade regime since 2001. Table 6 shows that the unilateral trade liberalization, *ceteris paribus*, would lead to an additional reduction in Chile’s anti-export bias, with the B and B^* estimated respectively at 1.12 and 1.16 (if variable levies determined through the PBM were the same as in 2001) and 1.07 and 1.08 (in the absence of PBM).

9. Comparison with the IMF Methodology¹⁴

According to the IMF (1997) methodology, Chile’s tariff regime in 2001 is classified as “Open,” and “Relatively Open” in 1998, with a score of 1 and 2 respectively. This improvement in the ranking is due to the reduction in the uniform import duties from 11% to 8%, implemented since 1998.

The IMF 2000 methodology encompasses a more comprehensive approach than the IMF (1997). It evaluates trade regimes based on all trade taxes rather than just import tariffs. In terms of the trade tax measure from Hinkle et al. (2003), unweighted NPTRs for domestically produced import-competing goods, which include tariff barriers as well as discriminatory domestic taxation components, are used in applying this methodology to our sample instead of unweighted average tariffs and surcharges used for IMF (1997). When average unweighted NPTRs are considered, Chile is given a score of “2” both in 1998 and 2001 because of the variable levies.

Table 7: Comparison to the IMF methodologies

	IMF ^a (1997)	IMF ^a (2000)
1998	2	2
2001	1	2

Source: Authors’ computations based on data obtained from authorities of the countries.

a. Both IMF methodology scores range between 1 (least distorted regime) and 10 (most distorted regime).

10. Conclusion

Chile’s trade regime in 2001 turns out to be by far the most open of the trade regimes analyzed to date using the B index methodology. Chile’s trade regime was already the most open in 1998, and unilateral trade liberalization brought about a further lowering of the anti-export bias in 2001. As the uniform tariff rate was reduced to 6% in 2003, estimations of the B index,

¹⁴ See Hinkle et al. (2003) for an examination of how we apply the IMF methodology. Hinkle et al. and Herrou-Aragon and Kubota (2003) also discuss the African Competitiveness Report methodology.

based only on this unilateral trade liberalization, point to further additional reduction in Chile's anti-export bias.

Chile provides a good benchmark for the evaluation of trade regimes in other countries. All the conventional trade policy instruments have been reformed to minimize anti-export bias: elimination of all of foreign exchange restrictions, elimination of all quantitative restrictions, low maximum tariffs, timely VAT reimbursement on purchase of inputs and capital goods, and constant attention to export competitiveness. While the use of variable levies protects import-competing production of flour, wheat flour, sugar and vegetable oils, our simulations show that it only accounts for a relatively small increase in the anti-export bias, and PTA with the U.S. will phase them out.

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Annex 1

The Functioning of Chile's Price-Band Mechanism

To provide some degree of stability to the domestic price of selected import-competing agricultural products whose prices are determined internationally and to protect them, Chile applies, in addition to the statutory uniform ad-valorem tariff rate, variable tariff levies on imports of wheat, wheat flour, oilseeds, edible vegetable oils, and sugar. These are determined on the basis of a price-band mechanism, which provides price thresholds (i.e., a maximum and a minimum import cost) for each good. The price thresholds, henceforth the floor and ceiling prices (i.e., minimum and maximum import costs) of the mechanism are estimated on the basis of monthly average international prices (established in particular markets, see below) during the preceding five years for wheat, oilseeds, and edible vegetable oils, and ten years for sugar. Once these monthly averages have been adjusted according to the variations in the average price index of external trade¹⁵ and sorted from the highest to the lowest values, 25% of the observations (i.e., 15) for wheat, oilseeds, and vegetable oils and 35% (i.e., 42 observations) for sugar at the top and at the bottom are eliminated. The first and the last observations resulting from this procedure are regarded as the floor and the ceiling fob prices. After import charges, which include insurance and freight, import duties (uniform rate) and taxes and other customs administrative and operational costs are added, the floor (minimum import cost) and the ceiling (maximum import costs) prices of the band are obtained.

On a weekly basis, customs officials publish "reference prices" for each good, on the basis of the lowest fob price recorded by the customs office in the previous week. The variable duty to be applied on each good is then determined on the basis of the lower price between the reference and the fob price on the targeted international markets. The latter are:

- Refined sugar: a weighted average of the fob price of refined sugar in London (90%) and the raw sugar fob price in New York (Contract # 14) (10%);
- Wheat: Gulf of Mexico fob price of hard red winter wheat #2; and
- Vegetable oils: raw (or unrefined) soybeans oil fob Illinois price.¹⁶

In practice, the variable duties are computed as follows. Once the lower of the reference price (published by Customs) and the international price (fob price in the relevant international market) is identified, import charges are added to it to obtain the corresponding import cost and this is compared to the floor and ceiling prices of the relevant band. If it lies between them, no variable duties/rebates are imposed and only the uniform tariff applies. Outside the band, duties are calculated for import costs below the minimum one (i.e., $\text{duty} = \text{floor price} - \text{import cost}$) and rebates for the ones above the maximum one ($\text{rebate} = \text{import cost} - \text{ceiling price}$). In the special case of wheat flour, duties/rebates are determined by multiplying the ones relating to wheat by a factor of 1.56 (before February 1996, the factor was 1.41).¹⁷

¹⁵ The price index of external trade is calculated by the Central Bank of Chile.

¹⁶ According to the WTO (2003), the international price used for edible vegetable oils is now based on the f.o.b price of raw soya in New York.

¹⁷ No price bands were in place for wheat flour before 1994.

Provisions in the existing legislation establish a maximum rebate equivalent to the uniform import duty (8% in 2001), without any limits on the variable duties imposed when the import cost is below the floor price. This asymmetrical procedure implies that prices below the floor price are fully offset by the mechanism, while only those between the ceiling price and the cif price plus the uniform import duty are completely offset. As a result, the increase in the expected price gives a protectionist bias for the import-competing production.

Tables A-C provide an example of the procedure used to determine variable duties/rebates and report estimates of the nominal protection rates for wheat, wheat flour, vegetable oils and sugar. The latter are obtained as the sum of the uniform and variable duties. Results indicate that nominal protection has increased for sugar and for vegetable oils since 1998 because of prices significantly lower than the floor price. For both commodities, the nominal protection rate in 2001 was above the Chile's bound MFN rate of 31.5%. All Chile's tariffs are bound in WTO at 25%, with the exception of wheat, flour, vegetable oils and sugar bound at 31.5%. The government re-negotiated an increase in the bound tariff rate for sugar with the WTO to 98%.

Our estimates indicate that the price band mechanism covers about 7% of the output value of import-competing goods.¹⁸ The estimated impact of these measures in 2001 represents an increase of about 2% of the weighted average price of import competing activities over their international prices plus the uniform import duty. The price band mechanism alone has a substantial impact on the dispersion of nominal and effective protection rates. To gauge this effect, we calculate the standard deviation for the nominal and effective protection rates for import competing activities and find that, in 2001, they were respectively 0.093. and 0.15. Without these price bands, these values would have been 0 and 0.02, respectively.

¹⁸ Output data with the necessary level of disaggregation are available for 1996.

Annex 1 Table A: Nominal Protection Rates (NPR) for Wheat and Wheat Flour

Year	Wheat												Wheat Flour		
	Minimum registered transaction price (reference price) (a)	International FOB price (b)	Estimated import cost (FOB price) (c)	Estimated import charges on FOB price (d)	Estimated import cost (reference price) (e)	Minimum Estimated Import Cost (f)	Floor price (g)	Ceiling price (h)	CIF price (i)	Uniform duty (j)	Variable duty/rebate (k)	NPR (l)	CIF price (m)	Variable duty/rebate (n)	NPR (o)
1990	130.5	137	194	0.416	184.7	184.7	187	261	154.0	0.11	0.015	0.125	278.9	-	0.11
1991	96.3	130	186	0.431	137.8	137.8	201	252	137.1	0.11	0.461	0.571	229.3	-	0.11
1992	125.7	152	205	0.349	169.5	169.5	190	232	168.8	0.11	0.121	0.231	230.7	-	0.11
1993	126.8	143	195	0.364	172.9	172.9	187	240	171.2	0.11	0.082	0.192	231.1	-	0.11
1994	131.2	151	204	0.351	177.2	177.2	183	246	203.5	0.11	0.028	0.138	218.7	0.037	0.147
1995	159.6	177	230	0.299	207.4	207.4	183	234	240.6	0.11	0.000	0.11	218.6	0	0.11
1996	200.1	204	279	0.368	273.6	273.6	203	235	257.9	0.11	-0.110	0	323.9	-0.110	0
1997	145.8	159	213	0.340	195.3	195.3	210	240	224.7	0.11	0.065	0.175	280.2	0.082	0.192
1998	108.8	129	215	0.667	181.3	181.3	213	251	224.2	0.11	0.141	0.251	301.1	0.164	0.274
1999	95.8	114	214	0.877	179.8	179.8	198	224	184.9	0.10	0.099	0.199	244.8	0.116	0.216
2000	98.4	118	179	0.517	149.3	149.3	179	224	175.0	0.09	0.170	0.26	202.5	0.229	0.319
2001	106.8	131	184	0.405	150.0	150.0	179	224	201.2	0.08	0.144	0.224	223.0	0.203	0.283
Average	127.1	145	208	0.450	182.0	182.0	193	239	195.3	0.105	0.101	0.206	248.6	0.111	0.216

Source: Authors' computations based on data from Chilean Customs Office and ODEPA (Office of Agricultural Planning).

Notes.

- a) Minimum actual transaction price registered by the customs office. Source: Chilean Customs Office.
- b) Gulf of Mexico FOB price of hard red winter wheat #2.
- c) Import costs calculated by ODEPA (Office of Agricultural Planning) on the basis of the Gulf of Mexico fob price of hard red winter #2, column (b).
- d) The customs estimated % difference between the factory gate domestic price and the FOB price. The former is estimated by adding to the FOB price the costs of insurance and freight plus customs charges. To gauge the impact of these charges, we calculated the ratio of the government estimated import cost over FOB price ($d=c/b-1$).
- e) Staff estimates. The import cost reported is obtained by applying to the minimum transaction price (a), the same import charges applied by ODEPA to the FOB price (d) (i.e., $e=a*(1+d)$).
- f) The import cost is the minimum between the import cost estimated by ODEPA (c) and Staff Estimates (e). The difference between (c) and (e) reflects the difference between the FOB Gulf price and the minimum transaction price.
- g) h) Prices are calculated according to the formula of price bands described in Annex 1.
- i) m) Source: Chilean Customs Office.
- k) n) The variable duty is calculated as the ratio of the difference between the floor price and the import cost of wheat to the CIF price. The rebate is calculated as the difference between the import cost and the ceiling price to the CIF price. See Annex 1 for further details. In the case of wheat flour, duties are calculated by multiplying duties on wheat by 1.56 after February 1996 and by 1.41 before it. No price bands for wheat flour were in place before 1994.

l) o) NPR results from the sum of the uniform import duty and the variable duty/rebate, $l=(k+j)$.

Annex 1 Table B: Nominal Protection Rates (NPR) for Vegetable Oils

Year	Minimum registered transaction price (reference price)	International FOB price	Estimated import cost (FOB price)	Estimated import charges on FOB price	Estimated import cost (reference price)	Minimum Estimated Import Cost	Floor price	Ceiling price	Estimated CIF price	Uniform duty	Variable duty/ rebate	NPR
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)
1990	429.5	529	710	0.34	575.6	575.6	592	1114	663.90	0.11	0.023	0.133
1991	417.4	474	643	0.36	567.6	567.6	626	845	594.87	0.11	0.101	0.211
1992	397.0	461	599	0.30	516.1	516.1	604	719	578.56	0.11	0.152	0.262
1993	442.0	534	678	0.27	561.4	561.4	609	706	670.17	0.11	0.071	0.181
1994	581.6	605	769	0.27	738.7	738.7	625	740	759.28	0.11	0.000	0.110
1995	606.5	587	744	0.27	770.3	744.0	628	692	736.69	0.11	-0.071	0.039
1996	518.0	524	684	0.31	678.5	678.5	699	778	657.62	0.11	0.035	0.145
1997	537.4	515	667	0.30	698.6	667.0	705	772	646.33	0.11	0.059	0.169
1998	611.6	565	720	0.27	776.7	720.0	675	761	709.08	0.11	0.000	0.110
1999	405.6	386	507	0.31	531.3	507.0	639	711	484.43	0.1	0.272	0.372
2000	313.3	330	434	0.32	413.6	413.6	637	718	414.15	0.09	0.543	0.633
2001	308.1	321	424	0.32	406.7	406.7	597	687	402.86	0.08	0.472	0.552
averages	464.0	486	632	0.30	602.9	591.3	636.3	770.3	609.83	0.105	0.138	0.243

Source: Authors' computations based on data from Chilean Customs Office.

Notes. See Table A.

(b) Raw (or unrefined) soybeans oil FOB Illinois price.

(i) Estimated CIF price for raw soybeans oil is obtained by multiplying the FOB price and the estimate of the insurance and freight charge (25.5% of the value or $i=b*1.255$).

Annex 1 Table C: Nominal Protection Rates (NPR) for Vegetable Oils

Year	International FOB price	Estimated Import Cost	Floor price	Ceiling price	CIF price	Uniform duty	Variable duty/rebate	NPR	ANBER Estimates
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
1990	381	506	373	510	432.99	0.11	0.000	0.110	na
1991	296	406	362	465	342.42	0.11	0.000	0.110	na
1992	273	374	400	453	313.24	0.11	0.083	0.193	na
1993	282	384	400	453	317.07	0.11	0.050	0.160	na
1994	346	450	410	453	349.73	0.11	0.000	0.110	0.107
1995	397	516	418	438	408.83	0.11	-0.110	0.000	0.004
1996	366	466	442	479	396.58	0.11	0.000	0.110	0.092
1997	316	404	449	496	355.84	0.11	0.126	0.236	0.235
1998	255	345	464	512	316.18	0.11	0.376	0.486	0.527
1999	201	284	440	485	253.73	0.10	0.615	0.715	0.805
2000	222	304	425	472	254.03	0.09	0.476	0.566	0.594
2001	248	334	413	444	298.08	0.08	0.265	0.345	0.380
Averages	298.58	397.75	416.33	471.67	336.56	0.105	0.157	0.262	0.343

Source: Authors' computations based on data from Chilean Customs Office

Notes.

- (a) FOB price of refined sugar in London.
- (b) Estimated import cost based on the reported FOB price. It includes insurance and freight, customs charges, VAT and import duties. It excludes variable duties/rebates.
- (e) CIF prices are those reported by Customs.
- (h) NPR figures are calculated as in Tables A and B.
- (i) ANBER estimates are those of the association of Chilean producers of non-alcoholic beverages.

ANNEX 2

Estimation of the Effective Protection Rates for Exports and B Index Assuming a Non-fixed Duty Drawback System

Tables 8 and 9 below report EPRs for the exportable sector on the basis of 1996 input-output data when the effects of a non-fixed duty drawback system are taken into account.¹⁹

Table 8: Effective Protection Rates for Exports

Year	Overall		Manufacturing		Agriculture	
	Unweighted	Output-weighted	Unweighted	Output-weighted	Unweighted	Output-weighted
1998	-2.6	-1.9	-2.6	-2.0	-3.8	-3.9
2001	-1.9	-1.3	-1.9	-1.4	-2.8	-2.8

Source: Authors' computations based on data obtained from authorities of the countries.

Table 9: B and B* Indices – Sensitivity Analysis

Year	<i>B</i> Index ^a		Standard ^b <i>B*</i> Index		I-O data <i>B*</i> Index	
	Unweighted	Output-weighted	Unweighted	Output-weighted	Unweighted	Output-weighted
1998						
-with PBM ^c	1.20	1.19	1.24	1.21	1.23	1.20
-without PBM	1.18	1.18	1.19	1.18	1.20	1.19
2001						
-with PBM	1.13	1.11	1.17	1.13	1.15	1.11
-without PBM	1.10	1.10	1.10	1.09	1.11	1.10
2003						
-with PBM	1.12	1.09	1.15	1.08	1.12	1.09
-without PBM	1.07	1.07	1.07	1.07	1.07	1.07

Source: Authors' computations based on data obtained from authorities of the countries.

Notes.

- In the estimation of the *B* index, a 50% import content of inputs is assumed. The assumption that 50% of inputs used in export production is imported seems to be reasonable for Chile, given its level of economic development. The implicit assumption made by Hinkle et al. (2003) in the estimation of the *B* index for the countries in the original sample (because of their lower level of economic development) is that 100% of inputs used in export production are imported.
- For import-competing sectors, (*indicative*) EPRs are estimated under the assumption that the domestic value added in manufacturing is 40% and in agriculture 88%.
- PBM: price band mechanism.

¹⁹ EPRs for manufactures exclude mining exports. When these are included, unweighted EPRs are respectively -2.1 in 1998 and -1.5 in 2001.

Annex 3: Standard Tables

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Table A 1: Foreign Exchange Regime and Controls

Country	Year	Foreign Exchange Restrictions (a)	Premium in the Foreign Exchange Parallel Market (b)
Benin	1996	<p><u>Currency Convertibility</u>: Full convertibility into the FF at a fixed rate of CFAF100 per FF; current transactions free of exchange controls; capital transactions free between Benin and France but require approval between Benin and the rest of world.</p> <p><u>Import Restrictions</u>: No restrictions on import financing. No foreign exchange budget.</p> <p><u>Export Restrictions</u>: Repatriation of foreign exchange earnings within 180 days.</p>	0
Côte d'Ivoire	1996	<p><u>Currency Convertibility</u>: Full convertibility into the FF at a fixed rate of CFAF100 per FF; current transactions free of exchange controls; capital transactions free between Cote d'Ivoire and France but require approval between Cote d'Ivoire and the rest of world.</p> <p><u>Import Restrictions</u>: No restrictions on import financing. No foreign exchange budget.</p> <p><u>Export Restrictions</u>: Repatriation of foreign exchange earnings within 120 days. Exports of lumber and certain metals are subject to quantitative restrictions.</p>	0
Burkina Faso	1996	<p><u>Currency Convertibility</u>: Full convertibility into the FF at a fixed rate of CFAF100 per FF; current transactions free of exchange controls; capital transactions free between Burkina and France but require approval between Burkina and the rest of world.</p> <p><u>Import Restrictions</u>: No restrictions on import financing. No foreign exchange budget.</p> <p><u>Export Restrictions</u>: Repatriation of foreign exchange earnings within 120 days. Exports and re-exports of certain products may require prior official authorization from relevant ministries.</p>	0
Mali	1997	<p><u>Currency Convertibility</u>: Full convertibility into the FF at a fixed rate of CFAF100 per FF; current transactions free of exchange controls; capital transactions free between Mali and France but require approval between Mali and the rest of world.</p> <p><u>Import Restrictions</u>: No restrictions on import financing. No foreign exchange budget.</p> <p><u>Export Restrictions</u>: Repatriation of foreign exchange earnings within 120 days.</p>	0
Senegal	1996	<p><u>Currency Convertibility</u>: Full convertibility into the FF at a fixed rate of CFAF100 per FF; current transactions free of exchange controls; capital transactions free between Senegal and France but require approval between Senegal and the rest of world.</p> <p><u>Import Restrictions</u>: No restrictions on import financing. No foreign exchange budget.</p> <p><u>Export Restrictions</u>: Exports do not require prior authorization with a few exceptions (precious metals, sugar, and groundnut oil). Repatriation of foreign exchange earnings within 120 days.</p>	0

Country	Year	Foreign Exchange Restrictions (a)	Premium in the Foreign Exchange Parallel Market (b)
Cameroon	1996	<p><u>Currency Convertibility</u>: Full convertibility into the FF at a fixed rate of CFAF100 per FF; current transactions free of exchange controls; capital transactions free between Cameroon and France but require approval between Cameroon and the rest of world.</p> <p><u>Import Restrictions</u>: No restrictions on import financing. No foreign exchange budget</p> <p><u>Export Restrictions</u>: Repatriation of foreign exchange earnings within 30 days.</p>	0
Ghana	1996	<p><u>Currency Convertibility</u>: The exchange rate is determined in the inter-bank foreign exchange market. Free convertibility for current transactions, restrictions on capital transactions.</p> <p><u>Import Restrictions</u>: No foreign exchange budget.</p> <p><u>Export Restrictions</u>: Exports proceeds should be remitted to the country within 60 days of shipment. Traditional exports are not subject to surrender requirements. Non-traditional export proceeds can be sold at market rates upon receipt in the banks. Cocoa must be exported through Cocoa Board and is subject to an export tax.</p>	1.1
South Africa	1996	<p><u>Currency Convertibility</u>: The exchange rate is determined in the foreign exchange market. Free convertibility for current transactions; approval is needed by the Reserve Bank for capital transactions.</p> <p><u>Export Restrictions</u>: Exports proceeds should be remitted to the country within seven days of accruals. Exporters may retain export proceeds for 180 days after accrual or date of shipment, whichever comes first, in foreign currency accounts with authorized dealers. A limited number of products require export permits.</p>	5.3
Tanzania	1996	<p><u>Currency Convertibility</u>: The exchange rate is determined in the interbank market. Current transactions are free of exchange controls, but capital transactions are subject to approval by the Bank of Tanzania.</p> <p><u>Import Restrictions</u>: No foreign exchange budget</p> <p><u>Export Restrictions</u>: Export proceeds must be repatriated within 180 days of the date of exportation. Export licensing required for health or sanitary reasons.</p>	6.0
Malawi	1995	<p><u>Currency Convertibility</u>: The exchange rate is determined in the foreign exchange market. Free convertibility for current transactions. Not fully convertible for capital transactions as residents' accounts cannot be converted into foreign currencies.</p> <p><u>Import Restrictions</u>: No foreign exchange budget.</p> <p><u>Export Restrictions</u>: Repatriation of 60% of foreign exchange received from exports is required immediately. The remaining 40% can be held in the exporter's foreign currency account. Exports of agricultural products subject to licensing.</p>	8.2
Uganda	1997	<p><u>Currency Convertibility</u>: Domestic currency is convertible into foreign currencies at a freely floating exchange rate for both current and capital transactions.</p> <p><u>Import Restrictions</u>: No restrictions on import financing. No foreign exchange budget.</p> <p><u>Export Restrictions</u>: Exports of coffee are subject to a quota under ICO rules.</p>	8.9

Country	Year	Foreign Exchange Restrictions (a)	Premium in the Foreign Exchange Parallel Market (b)
Mauritius	1996	<p><u>Currency Convertibility</u>: The exchange rate is market determined and freely convertible for both current and capital transactions.</p> <p><u>Import Restrictions</u>: Importers must be licensed. No foreign exchange budget</p> <p><u>Export Restrictions</u>: No repatriation requirements. Quotas on textiles and clothing to the US and Canada subject to bilateral export-restraint agreements. Sugar exports to the EU and US are restricted. Exports of certain foodstuffs controlled.</p>	10.4
Zimbabwe	1997	<p><u>Currency Convertibility</u>: The external value of the currency is determined in the foreign exchange market. Foreign exchange transactions are subject to control by the Reserve Bank of Zimbabwe</p> <p><u>Import Restrictions</u>: The Central Bank establishes import priorities to which commercial banks have to allocate their foreign exchange.</p> <p><u>Export Restrictions</u>: Export licensing required for a variety of products. Export proceeds must be converted to local currency in the market within a specified period.</p>	12.4
Chile (c)	1998	<p><u>Currency Convertibility</u>: The official exchange rate is kept within a crawling band around the US dollar. Free convertibility for current transactions. Controls on capital transactions. Dual foreign exchange structure.</p> <p><u>Import Restrictions</u>: No restrictions on import financing. No foreign exchange budget.</p> <p><u>Export Restrictions</u>: No repatriation requirements.</p>	9.3
Chile	2001	<p><u>Currency Convertibility</u>: The exchange rate is market determined and freely convertible for both current and most capital transactions. Unified exchange rate.</p> <p><u>Import Restrictions</u>: No restrictions on import financing. No foreign exchange budget.</p> <p><u>Export Restrictions</u>: No repatriation requirements.</p>	0
Bolivia	2001	<p><u>Currency Convertibility</u>: Crawling peg to US \$. The official selling rate is determined at auctions held daily by the Central Bank. The official exchange rate is the average of the bid rates accepted in the latest auction and applies to all foreign exchange operations in Bolivia. Before each auction, the Central Bank determines the amount to be auctioned and a floor price below which it will not accept any bids. This floor price, which is expressed in dollars, is the official exchange rate, and follows a crawling peg to the US\$. Free convertibility for current transactions. Capital controls exist.</p> <p><u>Import Restrictions</u>: No restrictions on import financing. No foreign exchange budget.</p> <p><u>Export Restrictions</u>: No repatriation requirements.</p>	0

Country	Year	Foreign Exchange Restrictions (a)	Premium in the Foreign Exchange Parallel Market (b)
Senegal	2001	<p><u>Currency Convertibility</u>: Fixed peg to Euro. Full convertibility into the euro at a fixed rate of CFAF 655.957 per euro; current transactions free of exchange controls; capital transactions free between Senegal and France but require approval between Senegal and the rest of world.</p> <p><u>Import Restrictions</u>: No restrictions on import financing. No foreign exchange budget</p> <p><u>Export Restrictions</u>: Exports do not require prior authorization with a few exceptions (precious metals, sugar, and groundnut oil). Repatriation of foreign exchange earnings required within 120 days.</p>	0
Senegal (UEMOA)	2001	<p><u>Currency Convertibility</u>: Same as Senegal (2001)</p> <p><u>Import Restrictions</u>: Same as Senegal (2001)</p> <p><u>Export Restrictions</u>: Same as Senegal (2001)</p>	0

Note.

(a) Source: Exchange Arrangements and Exchange Restrictions, IMF, for the year concerned.

(b) Source: Global Currency Report and International Financial Statistics for the year concerned.

(c) Source: Reinhart, C. and K. Rogoff (2003).

Table A 2: Summary of Quantitative Restrictions (QRs)

Country	Year	Products Subject to QRs	Share of imports covered by QRs	Share of import competing sector output covered by QRs	Estimated effect of QR on prices of products concerned (%)	Estimated effect of QR on average price of all ICI output (a)
Benin	1996	Portland Cement	na	12	10	1
Burkina Faso (b)	1997	Edible Cotton Oil Powdered Milk Yogurt Wheat Flour Rice Sugar Electrical Batteries Tires Inner Tubes for Tires	12	23	26	6
Cameroon	1995	Wheat Flour Meats Fisheries Edible Oils Sugar Refining Soap Insecticides Medicines Guns	9	21	12	3
Côte d'Ivoire	1997	Only for health or security reasons	0	0	0	0
Ghana	1999	Only for health or security reasons	0	0	0	0
Malawi	1999	Only for health or security reasons	0	0	0	0
Mali	1997	Cigarettes Tobacco Matches	1.5	15	13	2
Mauritius (c)	1999	Imports of sugarcane are prohibited	0	0	0	0
Senegal	1999	Only for health or security reasons	0	0	0	0
South Africa	1999	Black Tea	0	0	0	0
Tanzania	1999	Only for health or security reasons	0	0	0	0
Uganda	1999	Only for security purposes	0	0	0	0
Zimbabwe (d)	1997	Animal Oils Meats Live Cattle Dairy Products Fruits Honey and Ice Cream Corn and Corn Meal Sugar	3	11	9	1
mean			2.1	6.3	5.4	1.0
median			0	0	0	0
Chile	1998	Only for health, security or environmental reasons.	0	0	0	0
Chile	2001	Only for health, security, or environmental reasons.	0	0	0	0
Bolivia	2001	Used passenger cars Worn clothing Health and security reasons.	0	0	0	0

Country	Year	Products Subject to QRs	Share of imports covered by QRs	Share of import competing sector output covered by QRs	Estimated effect of QR on prices of products concerned (%)	Estimated effect of QR on average price of all ICI output (a)
Senegal	2001	Canned and preserved, and other consumer goods must be labeled in French. Several products are subject to inspection for health reasons.	0	0	0	0
Senegal (UEMOA)	2001	Only for health or security reasons.	0	0	0	0

Source: For Cameroon, UNCTAD-TRAINS data, 1995; for the rest of the countries, data obtained by Bank staff for the year concerned.

Notes:

- a) ICI: import-competing industry
- b) Excluding sugar on which there is also an import monopoly and which is included in Table A3.
- c) Sugar cane is assumed to be non-traded because of its perishability and high transport costs.
- d) Excluding corn and corn meal for which there is also an import monopoly and which are included in Table A3

Table A 3: Summary of Import Monopolies

Country	Year	Import monopolies	Share of import competing sector output covered by monopolies %	Effect of monopolies on average price on products concerned %	Effect of monopolies on average price of all import competing sector output %
Benin	1998	Petroleum products can be imported only by a state company and licenses private enterprises (a)	0	0	0
Burkina Faso	1998	Private monopoly for imports of sugar (b)	10	30	3
Cameroon	1998	The extent of the oil refinery import monopoly was reduced to 80% in 1998.	7	40	3
Côte d'Ivoire	1998	None	0	0	0
Ghana	1998	None	0	0	0
Malawi	1998	None	0	0	0
Mali	1998	None	0	0	0
Mauritius Domestic Industry	1998	None	0	0	0
Senegal	1998	None	0	0	0
South Africa	1998	None	0	0	0
Tanzania	1998	None	0	0	0
Uganda	1998	None	0	0	0
Zimbabwe	1998	Corn can be imported only by the Grain Marketing Board or by others with permission of the Board (c)	3	26	1
	Mean		1.5	7.4	0.5
	Median		0	0	0
Chile	1998	None	0	0	0
Chile	2001	None	0	0	0
Bolivia	2001	None	0	0	0
Senegal	2001	None	0	0	0
Senegal (UEMOA)	2001	None	0	0	0

Source: Authors' computations based on data obtained from authorities of the countries.

Notes: (a) No domestic production. Import monopoly is a fiscal device for generating revenues for the public sector.

(b) There is also a QR on sugar. Estimate is for the combined effects.

(c) There is also a QR on corn and corn meal. Estimate is for the combined effects.

Table A 4: Discrimination against Import through Domestic Indirect Taxation

Country	Year	Product subject to discriminatory indirect taxes	Resulting percentage increase in prices of imports
Benin	1996	None	0
Mali	1997	None	0
Cameroon	1996	None	0
Uganda	1997	None	0
Malawi	1995	None	0
Ghana	1996	None	0
Zimbabwe	1997	None	0
South Africa	1996	Mineral Waters	na
		Lemonade	na
		Beer	3.2
Côte d'Ivoire	1996	Soft Drinks	10.0
		Fruit Juice	10.9
		<i>Average Rate</i>	8.0
Senegal	1996	Cigarettes	13.0
		Beer	42.8
		Whisky	6.8
		Margarine	6.9
		Vegetable Oil	5.9
		Wheat Flour	5.8
		Sugar	6.1
Tanzania	1996	Blankets	42.0
		Bed Sheets	42.0
		Cement	16.8
		Iron Sheets	6.5
		Tires	24.8
		Inner Tubes	24.8
		Bicycles	6.5
<i>Average Rate</i>	18.3		
Burkina Faso	1996	Cigarettes	70.3
		Beer	124.3
		Wine	36.0
Mauritius	1996	Alcohol	360.0
		Cigarettes	113.0
		Cigars	461.9
		<i>Average Rate</i>	219.0
Chile	1998	None	0
Chile	2001	None	0
Bolivia	2001	None	0
Senegal	2001	Cigarettes	13.0
Senegal (UEMOA)	2001	None	0

Source: Data collected by Bank staff from the countries concerned.

na: Not available.

Table A 5: Structure of Tariff Regime

Country	Year	Import Tariff Rates (in %)	Import Surtaxes ^a (in %)
Benin	1996	Fiscal duties: 0-5-10-15-20	A 1% surtax is applied on imports from non preferential regional trade agreements
Burkina Faso	1996	Customs duties: 0-5 Fiscal duties: 0-5-10-15-25-30 Statistical tax: 5	Special Intervention Tax (TSI) of 2.0% applied over all dutiable imports
Cameroon	1996	0-5-10-20-30	Wheat Flour: 19.3 (50.0)
			Portland Cement: 14.2 (35.4)
			Detergents: 15.4 (46.6)
			Maize Meal: 29.6 (40.7)
Côte d'Ivoire	1996	Customs duties: 0-5 Fiscal duties: 0-5-10-15-25-30 Statistical tax: 5	Meats 14.3 (37.1)
			Tomato Preserves 5.6 (33.2)
			Vegetable Oils 9.6 (41.7)
			Cigarettes 236.2 (273.8)
			Cigars 14.8 (52.5)
			Smoking Tobacco 56.1 (93.7)
Ghana	1996	Fiscal duties: 0-10-25. Specific duties on milk, wheat flour, vegetable oils, sugar confectionery, fruit juices, sauces, soft drinks, beer, spirits, cigarettes, soaps, fabrics, worn clothing, iron and steel bars and rods, and petroleum products.	A 17.5% surcharge is applied mostly on imports of consumer goods
Mali	1997	Customs duties: 0-5	None
		Fiscal duties: 0-10-25	
		Statistical tax: 0-5	
Malawi	1995	Customs duties: 0-5-7.5-10-15-20-25-30-35-40-45	None
Mauritius	1996	Customs duties: 0-5-10-15-20-30-40-55-80	A 20% surcharge is applied on imports from several countries including Japan, South Korea and Switzerland.
Senegal	1996	Fiscal Duties: 0-10-20-30-50	A 20% surcharge is applied on imports of several luxury goods. A reference price is applied on imports of refined sugar.
		Customs Duties: 0-10	
		Statistical Tax: 0-5	
South Africa	1996	Customs duties are in 45 bands ranging from 0 to 57.5. Specific and a combination of specific and ad-valorem duties apply on several items.	None
Tanzania	1996	Fiscal duties: 5-20-25-30-40-50	None
Uganda	1997	0-5-10-20-30-60	None
Zimbabwe	1997	0-5-10-15-20-25-30-35-40-45-50-55-60-65-70-75-80-85-90-95-100	Mostly on consumer goods 10.0 Specific duties on Textiles 50.9 (160.9)
Chile	1998	Customs duties: 0-11	<i>Variable levies on:</i>
			Wheat (25.1)
			Wheat Flour (27.4)
			Vegetable oils (11.0)
			Sugar (49.0)
Chile	2001	Customs duties: 0-8	<i>Variable levies on:</i>
			Wheat (22.0)
			Wheat Flour (28.0)
			Vegetable oils (55.0)
			Sugar (35.0)

Country	Year	Import Tariff Rates (in %)	Import Surtaxes ^a (in %)
Bolivia	2001	Customs duties: 0-2-5-10	None
Senegal	2001	Common external tariffs: 0-5-10-20	A 20% surcharge is levied on onions, potatoes, bananas, cigarettes, and rice. A 10% surcharge is levied on some cereals.
		Statistical tax: 1	
		Community tax: 1	
Senegal (UEMOA)	2001	Common external tariffs: 0-5-10-20	None
		Statistical tax: 1	
		Community tax: 1	

Source: Data obtained by Bank staff from the countries in the study.

Note: (a) The numbers in parentheses are NPTR (tariff plus the surcharges and any discriminatory excise taxation).

Table A 6: Tariff Regimes

Country	Year	Unweighted average MFN tariff rate	Maximum Tariffs &sc	Unweighted average tariff &sc rate on dutiable imports	Import-weighted average tariff &sc rate on dutiable imports	Standard deviation of tariff &sc on dutiable imports	Collection rates on all imports	Unweighted average NPTR on all import-competing goods	Indicative Protection Rates on import-competing domestic goods	Effective Rates on import-competing domestic goods	Tariff &sc revenues as % of GDP	Tariff &sc revenues as % of tax revenues
			(a)	(b)			(c)	(d)	Agriculture	Manufactures		
Benin	1996	na	21.0	10.1	7.2	7.0	5.1	14.2	12.7	34.6	1.1	8.3
Burkina Faso	1996	na	119.0	28.9	19.6	11.6	14.8	32.9	23.4	83.7	3.3	28.0
Cameroon	1996	na	50.0	11.5	10.5	10.8	9.6	30.6	34.2	68.8	1.3	10.2
Côte d'Ivoire	1996	na	273.8	14.7	14.5	13.6	9.4	34.7	21.9	92.4	1.8	11.0
Ghana	1996	na	42.5	11.2	7.3	15.6	6.9	29.7	27.9	67.2	1.1	7.0
Malawi	1995	na	45.0	16.3	10.9	35.1	8.2	38.0	1.4	89.8	3.0	18.8
Mali	1997	na	30.0	20.2	12.9	13.2	8.8	30.2	na	50.5	2.2	15.8
Mauritius	1996	na	80.0	26.4	20.3	30.4	16.2	65.4	21.4	149.0	6.2	32.9
Senegal	1996	na	75.0	19.5	14.6	17.4	14.2	46.6	32.1	103.3	4.2	25.6
South Africa	1996	na	57.5	12.2	5.2	15.2	4.9	27.3	0.0	67.6	0.8	3.3
Tanzania	1996	na	66.0	21.6	13.3	23.9	8.0	42.9	28.9	84.2	2.0	20.0
Uganda	1997	na	60.0	7.1	9.3	9.6	8.0	25.4	22.4	72.6	0.8	7.5
Zimbabwe	1997	na	160.9	23.8	16.2	42.6	7.1	40.8	14.0	107.0	6.1	23.2
Mean		na	83.1	17.2	12.4	0.4	9.3	35.3	20.0	82.4	2.6	16.3
Median		na	60.0	16.3	12.9	15.2	8.2	32.9	22.1	83.7	2.0	15.8
Chile	1998	11.0	11.0	11.0	10.9	0.4	9.4	12.7	12.4	15.4	2.2	13.5
Chile	2001	8.0	8.0	8.0	8.0	0.3	5.4	10.7	9.1	15.2	2.0	11.6
Bolivia	2001	9.4	10.0	9.3	8.0	2.5	5.5	9.4	10.0	8.8	1.2	6.6
Senegal	2001	14.8	52.0	14.4	11.2	10.1	9.6	26.4	23.4	51.1	3.7	20.7
Senegal	2001	14.8	22.0	14.8	11.7	7.0	10.4	19.7	13.4	35.1	4.0	21.9

Source: Authors' computations based on data obtained from authorities of the countries.

- Notes:
- a) Includes tariffs, surcharges, and the ad-valorem equivalents of specific duties.
 - b) Tariff rates averaged over HS8 digit-level tariff lines, except for Senegal and Mali where the averages are over HS10 digit.
 - c) Total revenues from tariffs and surcharges divided by total value of imports.
 - d) NPTR (Nominal Protection Tax Rate) includes tariffs, surcharges, and discriminatory domestic taxes (but not the effects of NTBs) which protect domestically produced import-competing goods.

Table A 7: Unweighted vs. Output –weighted average NPTRs

Country	Year	Unweighted average NPTR on all import-competing goods	Output-weighted average NPTR on import-competing goods	Difference (%)
Benin	1996	14.2	14.9	4.9
Côte d'Ivoire	1996	34.7	44.4	28.0
Ghana	1996	29.7	na	na
Mali	1997	30.2	31.0	2.6
Senegal	1996	46.6	44.9	-3.6
South Africa	1996	27.3	32.9	20.5
	Mean	30.6	33.6	9.9
	Median	30.2	32.9	8.9
Chile	1998	12.7	12.2	-3.9
Chile	2001	10.7	9.5	-11.2
Bolivia	2001	9.4	10.0	6.4
Senegal	2001	26.4	27.6	4.5
Senegal (UEMOA)	2001	19.7	19.8	0.5

Source: Authors' computations based on data obtained from authorities of the countries.

Table A 8: Escalation of Trade Barriers by Economic Use

Country	Year	<u>Unweighted average tariff &sc on dutiable imports</u>					<u>Unweighted NPTR on import-competing goods</u>				
		consumer goods	intermediate goods	capital goods	all dutiable imports	std deviation (all dutiable imports)	consumer goods	intermediate goods	capital goods	all import-competing goods	std deviation (all import-competing goods)
Benin	1996	14.4	8.5	8.0	10.1	7.0	13.7	15.4	na	14.2	4.6
Burkina Faso	1996	34.9	28.2	20.2	28.9	11.6	43.8	32.5	na	32.9	16.1
Cameroon	1996	26.7	9.8	7.4	11.5	10.8	30.9	30.6	21.2	30.6	4.9
Côte d'Ivoire	1996	28.7	12.6	7.3	14.7	13.6	43.0	25.2	27.6	34.7	30.6
Ghana	1996	27.6	5.7	3.1	11.2	15.6	33.0	24.3	10.0	29.7	22.7
Malawi	1995	38.3	12.3	11.1	16.3	35.1	43.1	27.0	40.0	38.0	18.2
Mali	1997	29.8	18.0	12.6	20.2	13.2	33.6	29.0	5.0	30.2	9.7
Mauritius	1996	52.7	19.5	19.0	26.4	30.4	63.8	70.0	na	65.4	80.1
Senegal	1996	35.6	16.0	12.4	19.5	17.4	51.7	31.9	35.0	46.6	18.9
South Africa	1996	22.0	9.8	7.2	12.2	15.2	39.0	17.6	11.8	27.3	22.1
Tanzania	1996	33.5	18.2	12.3	21.6	23.9	50.3	33.5	5.0	42.9	25.8
Uganda	1997	20.4	5.6	2.1	7.1	9.6	30.8	20.8	na	25.4	10.3
Zimbabwe	1997	55.4	17.7	10.5	23.8	42.6	68.4	28.6	37.5	40.8	24.8
	Mean	32.3	14.0	10.2	17.2	18.9	41.9	29.7	21.5	35.3	22.2
	Median	29.8	12.6	10.5	16.3	15.2	43.0	28.6	21.2	32.9	18.9
Chile	1998	11.0	11.0	11.0	11.0	0.4	13.4	12.3	11.0	12.7	6.9
Chile	2001	8.0	8.0	8.0	8.0	0.3	12.6	9.3	8.0	10.7	9.3
Bolivia	2001	9.8	9.8	6.9	9.3	2.5	10.0	10.0	7.0	9.4	1.9
Senegal	2001	23.3	12.6	8.8	14.4	10.1	28.6	21.9	23.0	26.4	9.2
Senegal (UEMOA)	2001	20.3	13.3	10.1	14.8	7.0	21.4	15.6	22.0	19.7	5.3

Source: Authors' computations based on data obtained from authorities of the countries.

Table A 9: Revenue Collection

Country	Year	Tariff & sc revenues as % of GDP	Tariff & sc revenues as % of tax revenues	Collection rates on all imports	Non dutiable imports as % of total imports	Exemptions as % of dutiable imports	Collection rates on dutiable imports (a)	Collection percentage (b)
Benin	1996	1.1	8.3	5.1	48.4	14.1	7.2	89.7
Burkina Faso	1996	3.3	28.0	14.8	27.2	15.0	19.6	93.5
Cameroon	1996	1.3	10.2	9.6	8.8	19.1	10.5	84.7
Côte d'Ivoire	1996	1.8	11.0	9.4	29.7	10.3	13.4	91.4
Ghana	1996	1.1	7.0	6.9	14.7	50.0	7.7	74.9
Malawi	1995	3.0	18.8	8.2	9.1	32.1	9.0	73.0
Mali	1997	2.2	15.8	8.8	48.3	14.1	12.9	90.6
Mauritius Domestic Industry	1996	6.2	32.9	16.2	33.3	12.4	18.9	90.7
Senegal	1996	4.2	25.6	14.2	2.2	16.8	14.5	88.6
South Africa	1996	0.8	3.3	4.9	7.1	4.3	5.2	96.2
Tanzania	1996	2.0	20.0	8.0	36.6	21.8	11.4	80.7
Uganda	1997	0.8	7.5	8.0	2.8	14.8	8.3	89.0
Zimbabwe	1997	6.1	23.2	7.1	67.7	13.8	16.2	88.2
	Mean	2.6	16.3	9.3	25.8	18.4	11.9	87.0
	Median	2.0	15.8	8.2	27.2	14.8	11.4	89.0
Chile	1998	2.2	13.5	9.3	1.4	0.0	9.4	100.0
Chile	2001	2.0	11.6	5.4	0.3	0.0	5.5	100.0
Bolivia	2001	1.2	6.6	5.5	3.6	0.0	5.5	100.0
Senegal	2001	3.7	20.7	9.6	13.0	16.5	11.2	83.4
Senegal (UEMOA)	2001	4.0	21.9	10.4	13.0	0.0	11.4	100.0

Source: Authors' computations based on data obtained from authorities of the countries.

Note:

(a) Total revenues from tariffs and surcharges divided by the total value of dutiable imports.

(b) Actual to potential revenues where potential revenue is the sum of foregone and actual revenues collected from dutiable imports. Foregone revenues are computed by multiplying total value of exemptions by the import-weighted average tariff & sc rates (minus any revenues collected from partially-exempt imports)

Table A 10: Composition of Nominal Protection Rates

Country	Year	Tariff & component (a)		Discriminatory domestic taxes		NPTR (b)		Monopoly		QRs		NPR (c)	
		manuf	ag	manuf	ag	manuf	ag	manuf	ag	manuf	ag	manuf	ag
Benin	1996	14.9	11.8	0	0	14.9	11.8	0	0	4.0	0	18.9	11.8
Burkina Faso	1996	36.7	22.6	5.1	0	41.8	22.6	3.0	0	5.6	0	50.4	22.6
Cameroon	1996	29.1	31.2	0	0	29.1	31.2	3.0	0	1.3	0	33.4	31.2
Côte d'Ivoire	1996	44.5	20.5	0	0	44.5	20.5	0	0	0	0	44.5	20.5
Ghana	1996	30.3	25.0	0	0	30.3	25.0	0	0	0	0	30.3	25.0
Malawi	1995	43.3	1.3	0	0	43.3	1.3	0	0	0	0	43.3	1.3
Mali	1997	29.0	non-traded	0	0	29.0	none	0	0	2.0	0	31.0	non-traded
Mauritius Domestic Industry	1996	60.2	19.3	11.1	0	71.3	19.3	0	0	0	0	71.3	19.3
Senegal	1996	49.2	30.1	1.7	0	50.9	30.1	0	0	0	0	50.9	30.1
South Africa	1996	32.9	exportable	0.0	0	32.9	exportable	0	0	0	0	32.9	exportable
Tanzania	1996	34.9	26.7	9.7	0	44.6	26.7	0	0	0	0	44.6	26.7
Uganda	1997	32.4	20.0	0.0	0	32.4	20.0	0	0	0	0	32.4	20.0
Zimbabwe	1997	52.4	11.5	0.0	0	52.4	11.5	0	1	1	0	53.4	12.5
	Mean	37.7	20.0	2.1	0	39.8	20.0	0.5	0.1	1.1	0	41.3	20.1
	Median	34.9	20.5	0	0	41.8	20.5	0	0	0	0	43.3	20.5
Chile	1998	12.7	12.3	0.0	0	12.7	12.3	0	0.0	0.0	0	12.7	12.3
Chile	2001	10.9	9.0	0.0	0	10.9	9.0	0	0.0	0.0	0	10.9	9.0
Bolivia	2001	9.4	10.0	0.0	0	9.4	10.0	0	0.0	0.0	0	9.4	10.0
Senegal	2001	26.3	21.8	1.7	0	28.0	21.8	0	0.0	0.0	0	28.0	21.8
Senegal (UEMOA)	2001	20.3	12.8	1.7	0	22.0	12.8	0	0.0	0.0	0	22.0	12.8

Source: Authors' computations based on data obtained from authorities of the countries.

Notes: (a) The tariff rates averaged (unweighted) **only** over the lines with import-competing domestic production.

(b) The NPTR (Nominal Protection Tax Rate on import-competing industry) is the sum of tariffs, surcharges, and discriminatory indirect taxes.

(c) The NPR (Nominal Protection Rate on import-competing industry) is the sum of NPTR and NTBs.

Table A 11: Effective Protection Rates (EPRs)

Country	Year	Import-competing									Exportable	
		Tariff & sc on inputs (a)	NPR	EPR (indicative) (b)	EPR based on I-O table	Tariff & sc on fertilizers	Tariff & sc on non fertilizer inputs	NPR	EPR (indicative) (c)	EPR based on I-O table	EPR based on I-O table (d)	
		manufacturing				agriculture					manufac	agric
Benin	1996	8.5	18.9	34.6	33.2	10.0	3.5	11.8	12.7	12.4	-10.6	-52.5
Burkina Faso	1996	28.2	50.4	83.7	0.0	9.0	20.7	22.6	23.4	na	none	-31.6
Cameroon	1996	9.8	33.4	68.8	0.0	5.8	10.5	31.2	34.2	na	-16.4	-47.8
Côte d'Ivoire	1996	12.6	44.5	92.4	41.3	6.0	12.6	20.5	21.9	17.0	-11.2	-42.2
Ghana	1996	5.7	30.3	67.2	0.0	0.0	5.7	25.0	27.9	na	-21.9	-34.3
Malawi	1995	12.3	43.3	89.8	0.0	0.0	0.4	1.3	1.4	na	-3.3	none
Mali	1997	18.0	31.0	50.5	0.0	5.0	18.2	non-traded	na	na	none	-28.8
Mauritius Domestic Industry	1996	19.5	71.3	149.0	0.0	9.0	1.4	19.3	21.4	na	none	none
Senegal	1996	16.0	50.9	103.3	72.2	5.0	20.2	30.1	32.1	31.1	-14.2	-3.4
South Africa	1996	9.8	32.9	67.6	48.9	0.0	0.6	exportable	0.0	exportable	-5.5	-8.3
Tanzania	1996	18.2	44.6	84.2	0.0	3.7	13.6	26.7	28.9	na	-11.3	-3.7
Uganda	1997	5.6	32.4	72.6	0.0	0.0	4.0	20.0	22.4	na	-3.1	-1.7
Zimbabwe	1997	17.7	53.4	107.0	0.0	3.5	0.0	12.5	14.0	na	-4.7	none
Mean		14.0	41.3	82.4	15.0	4.4	8.6	20.1	20.0	20.2	-10.2	-25.4
Median		12.6	43.3	83.7	0.0	5.0	5.7	20.5	22.1	17.0	-10.9	-30.2
Chile (b)	1998	11.0	12.7	15.4	14.3	11.0	12.3	12.3	12.4	12.1	-2.6	-3.8
Chile (b)	2001	8.0	10.9	15.2	12.7	8.0	9.0	9.0	9.1	9.4	-1.9	-2.8
Bolivia (c, d)	2001	9.8	9.4	8.8	12.0	10.0	10.0	10.0	10.0	10.8	-2.0	-0.2
Senegal	2001	12.6	28.0	51.1	40.8	5.4	12.3	21.8	23.4	35.2	-19.9	-2.2
Senegal (UEMOA)	2001	13.3	22.0	35.1	27.5	7.0	9.3	12.8	13.4	21.8	-11.7	-1.8

Source: Authors' computations based on data obtained from authorities of the countries.

Notes:

(a) We use the tariff & surcharges on dutiable intermediate goods as a proxy.

(b) Computed using a standard coefficient of 0.60 for tradable inputs.

(c) Computed using standard coefficients of 0.04 for fertilizer (tradable) and 0.08 for non-fertilizer tradable inputs.

(d) Assuming the VAT on inputs is reimbursed at the rate indicated in Table A13.

Table A 12: Perceptions of Corruption Index

Country	Year	TI Peceptions of Corruption Index 1998 (a)	TI Rank 1998	TI Peceptions of Corruption Index with the Scale Reversed (b)	Normalized Rescaled TI Peceptions of Corruption Index (c)
South Africa	1998	5.2	32	4.8	0.0
Mauritius domestic industry	1998	5.0	33	5.0	0.5
Zimbabwe	1998	4.2	43	5.8	2.6
Malawi	1998	4.1	45	5.9	2.9
Ghana	1998	3.3	55	6.7	5.0
Senegal	1998	3.3	55	6.7	5.0
Cote d'Ivoire	1998	3.1	59	6.9	5.5
Uganda	1998	2.6	73	7.4	6.8
Tanzania	1998	1.9	81	8.1	8.7
Cameroon	1998	1.4	85	8.6	10.0
Benin	1998	na	na	na	na
Burkina Faso	1998	na	na	na	na
Mali	1998	na	na	na	na
	Mean	3.4	56	6.6	4.7
	Median	3.3	55	6.7	5.0
Chile	1998	6.8	20	3.2	na
Chile	2001	7.5	18	2.5	na
Bolivia	2001	2.0	84	8.0	na
Senegal	2001	2.9	65	7.1	na
Senegal (UEMOA)	2001	2.9	65	7.1	na

Source: Transparency International, Berlin (for the year concerned).

Notes

(a) For the TI Corruption Index: 0 = most corrupt, 10 = cleanest

(b) Reversed scale. The scale of the TI index has been reversed by subtracting the original values from 10 so that the scale will be consistent with the other indicators used in this study where 0 is the least distortionary value of an indicator and 10 is the most distortionary value.

(c) The reversed scale index normalized so the lowest observed value in the sample group is 0 and the highest observed value in the sample is 10.

Table A 13: Export Regime

Country	Year	Overall average tax on export industry output (estimate, %)	Tariffs & sc on inputs to exports (estimate)		Duties on inputs exempted for exports (estimate, %)	VAT on inputs to exports			VAT reimbursement rate (estimate, %)
			manufac	agric		manufac	fertilizer	non fert. ag	
Benin	1996	23.0	14.4	5.7	0	15.2	1.2	17.8	0
Burkina Faso	1996	14.0	34.9	16.8	0	8.8	0	0.2	0
Cameroon	1996	4.0	26.7	8.9	0	15.0	0	15.0	0
Côte d'Ivoire	1996	7.0	28.7	10.4	0	15.5	0	5.9	0
Ghana	1996	9.0	27.6	3.8	na	15.0	0	15.0	0
Malawi	1995	0	38.3	0.3	na	15.0	0	15.0	0
Mali	1997	8.0	29.8	13.8	0	5.8	0	12.7	0
Mauritius Domestic Industry	1996	0	52.7	3.9	probably moderate but delayed	0	0	0	0
Senegal	1996	0	16.0	15.1	0	15.0	0	15.0	80.0
South Africa	1996	0	9.8	0.4	probably moderate but delayed	15.0	0	15.0	0
Tanzania	1996	0	18.2	10.3	probably low and arbitrary	15.0	0	15.0	0
Uganda	1997	0	5.6	2.7	probably low and arbitrary	15.0	0	15.0	0
Zimbabwe	1997	0	17.7	1.2	probably low and arbitrary	15.0	0	15.0	15
Mean		5.0	24.6	7.2		12.7	0.1	12.0	7.3
Median		0	26.7	5.7		15.0	0	15.0	0
Chile	1998	0	11.0	11.9	100	19.0	19.0	19.0	100
Chile	2001	0	8.0	8.7	100	19.0	19.0	19.0	100
Bolivia	2001	0	9.8	10.0	100	13.0	13.0	13.0	100
Senegal	2001	0	12.6	11.7	0	15.0	0.0	15.0	80
Senegal (UEMOA)	2001	0	13.3	12.4	0	15.0	0.0	15.0	80

Source: Authors' computations based on data obtained from authorities of the countries. Exchange Arrangements and Restrictions (IMF for the year concerned). Cotton policies in Francophone Africa (Pursell 1998).

Table A 14a: B Index

Country	Year	man imports/ all exports	all imports/ all exports	all imports/ man exports	all imports/ ag exports	man imports/ man exports	ag imports/ man exports	ag exports
Benin	1996	1.7	1.7	1.4	2.0	1.4	1.9	
Burkina Faso	1996	2.1	1.9	1.9	2.8	2.0	2.4	
Cameroon	1996	1.5	1.6	1.7	1.5	1.7	1.5	
Côte d'Ivoire	1996	1.7	1.6	1.6	1.8	1.8	1.7	
Ghana	1996	1.6	1.6	1.5	2.0	1.5	1.9	
Malawi	1995	1.6	1.6	1.7	1.5	1.8	1.1	
Mali	1997	1.6	1.6	1.6	2.2	1.5	na	
Mauritius Domestic Industry (a)	1996	1.9	1.9	2.0	1.7	2.0	1.3	
Senegal	1996	1.6	1.6	1.7	1.5	1.7	1.3	
South Africa	1996	1.5	1.4	1.6	1.3	1.6	na	
Tanzania	1996	1.7	1.7	1.9	1.5	1.9	1.3	
Uganda	1997	1.5	1.4	1.5	1.3	1.6	1.3	
Zimbabwe	1997	1.8	1.7	1.9	1.5	2.0	1.2	
	Mean	1.7	1.6	1.7	1.7	1.7	1.5	
	Median	1.6	1.6	1.7	1.5	1.7	1.3	
Chile	1998	1.2	1.2	1.3	1.2	1.3	1.2	
Chile	2001	1.1	1.1	1.2	1.1	1.2	1.1	
Bolivia	2001	1.1	1.1	1.1	1.1	1.1	1.1	
Senegal	2001	1.4	1.3	1.4	1.3	1.4	1.2	
Senegal (UEMOA)	2001	1.3	1.3	1.3	1.2	1.4	1.1	

Source: Authors' computations based on data obtained from authorities of the countries.

Note: (a) For domestic firms without preferential access to the EU sugar market, the EU and US garment markets, or to foreign exchange.

Table A 14b: Components of B Index (numerator)

Country	Year	Em/Ex	<u>manufacturing</u>		<u>agriculture</u>		<u>overall</u>	
			NPTR on import-competing goods	Effect of NTBs on average price on import-competing goods	NPTR on import-competing goods	Effect of NTBs on average price on import-competing goods	NPTR on import-competing goods	Effect of NTBs on average price on import-competing goods
			"t+n"	"PR" (b)	"t+n"	"PR" (b)	"t+n"	"PR" (a)
Benin	1996	1	14.9	4.0	11.8	0	14.2	1.0
Burkina Faso	1996	1	41.8	8.6	22.6	0	32.9	9.0
Cameroon	1996	1	29.1	4.3	31.2	0	30.6	6.0
Côte d'Ivoire	1996	1	44.5	0	20.5	0	34.7	0
Ghana	1996	1.01	30.3	0	25.0	0	29.7	0
Malawi	1995	1.04	43.3	0	1.3	0	38.0	0
Mali	1997	1	29.0	2.0	none	0	30.2	2.0
Mauritius Domestic Industry (a)	1996	1.05	71.3	0	19.3	0	65.4	0
Senegal	1996	1	50.9	0	30.1	0	46.6	0
South Africa	1996	1	32.9	0	exportable	0	27.3	0
Tanzania	1996	1	44.6	0	26.7	0	42.9	0
Uganda	1997	1	32.4	0	20.0	0	25.4	0
Zimbabwe	1997	1	52.4	1	11.5	1	40.8	2
Mean		1.02	39.8	1.5	20.0	0	35.3	1.5
Median		1.01	41.8	0	20.5	0	32.9	0
Chile	1998	1.05	12.7	0.0	12.3	0	12.7	0.0
Chile	2001	1.00	10.9	0.0	9.0	0	10.7	0.0
Bolivia	2001	1.00	9.4	0.0	10.0	0	9.4	0.0
Senegal	2001	1.00	28.0	0.0	21.8	0	26.4	0.0
Senegal (UEMOA)	2001	1.00	22.0	0.0	12.8	0	19.7	0.0

Source: Authors' computations based on data obtained from authorities of the countries.

Note: (a) For domestic firms without preferential access to the EU sugar market, the EU and US garment markets, or to foreign exchange.

(b) The sum of estimated effects of QRs and import monopolies on the average price of import-competing goods (Tables A2 & A3).

Table A14c: Components of B Index (denominator)

Country	Year	VAT reimbursement rate for exporters % (estimate)	manufacturing				agriculture						overall		
			Average tax on industry output (%) (estimate)	(Duties and taxes on inputs) * (share of tradable inputs)	Tariff & sc on inputs	Estimated import-weighted average VAT on traded inputs (a)	Average tax on industry output (%) (estimate)	(Duties and taxes on inputs) * (share of tradable inputs) (b)	Tariff & sc on fertilizers	Estimated average VAT on fertilizers	Tariff & sc on non fertilizer inputs	Estimated average VAT on tradable non fertilizer inputs (a)	Tax on industry output (%) (estimate) (c)	(Duties and taxes on inputs) *(share of tradable inputs)	Estimated import-weighted average VAT on traded inputs (a)
			"-s"	"t ₁ "			"-s"	"t ₁ "					"-s"	"t ₁ " (d)	
Benin	1996	0	0	15.0	8.5	15.2	38.9	2.2	10.0	1.2	3.5	17.8	23.0	8.6	15.2
Burkina Faso	1996	0	0	23.7	28.2	8.8	46.5	2.0	9.0	0.0	20.7	0.2	14.0	12.9	8.8
Cameroon	1996	0	5.0	15.8	9.8	15.0	9.1	2.4	5.8	0.0	10.5	15.0	4.0	9.1	15.0
Côte d'Ivoire	1996	0	0	18.0	12.6	15.5	25.3	1.8	6.0	0.0	12.6	5.9	7.0	9.9	15.5
Ghana	1996	0	0	12.9	5.7	15.0	33.0	1.7	0.0	0.0	5.7	15.0	9.0	7.3	15.0
Malawi	1995	0	0	17.5	12.3	15.0	0.0	1.2	0.0	0.0	0.4	15.0	0.0	9.4	15.0
Mali	1997	0	0	14.9	18.0	5.8	38.0	2.9	5.0	0.0	18.2	12.7	8.0	8.9	5.8
Mauritius Domestic Industry	1996	0	0	11.7	19.5	0.0	0.0	0.5	9.0	0.0	1.4	0.0	0.0	6.1	0.0
Senegal	1996	80	0	11.7	16.0	15.0	0.0	2.1	5.0	0.0	20.2	15.0	0.0	6.9	15.0
South Africa	1996	0	0	15.8	9.8	15.0	0.0	1.3	0.0	0.0	0.6	15.0	0.0	8.5	15.0
Tanzania	1996	0	0	21.6	18.2	15.0	0.0	2.6	3.7	0.0	13.6	15.0	0.0	12.1	15.0
Uganda	1997	0	0	12.9	5.6	15.0	0.0	1.6	0.0	0.0	4.0	15.0	0.0	7.2	15.0
Zimbabwe	1997	15	0	19.6	17.7	15.0	0.0	1.2	3.5	0.0	0.0	15.0	0.0	10.4	15.0
Mean		7.3	0.4	16.2	14.0	12.7	14.7	1.8	4.4	0.1	8.6	12.0	5.0	9.0	12.7
Median		0	0	15.8	12.6	15.0	0.0	1.8	5.0	0.0	5.7	15.0	0.0	8.9	15.0
Chile	1998	100	0	6.6	11.0	19.0	0.0	1.4	11.0	19.0	12.3	19.0	0.0	4.0	19.0
Chile	2001	100	0	4.8	8.0	19.0	0.0	1.0	8.0	19.0	9.0	19.0	0.0	2.9	19.0
Bolivia	2001	100	0	5.9	9.8	13.0	0.0	1.2	10.0	13.0	10.0	13.0	0.0	3.5	13.0
Senegal	2001	80	0	9.6	12.6	15.0	0.0	1.5	5.4	0.0	12.3	15.0	0.0	5.5	15.0
Senegal (UEMOA)	2001	80	0	10.0	13.3	15.0	0.0	1.3	7.0	0.0	9.3	15.0	0.0	5.7	15.0

Source: Authors' computations based on data obtained from authorities of the countries.

Note: (a) For countries for which we do not have actual VAT information for the relevant years (Uganda, Tanzania, South Africa, Malawi, Zimbabwe), we assume a uniform 15% VAT rate, except for fertilizers, which we assume were 0 rated as they were mostly imported duty free as bilateral aid. We use average tariffs and VAT on all tradable intermediate goods as a rough approximation for those on inputs to manufacturing.

(b) Weight on fertilizers = 0.04, weight on other inputs = 0.08.

(c) From Table A13.

(d) Unweighted average of "t₁" man and "t₁" ag.

Table A 15: B* Index

Country	Year	E _m /E _x (a)	Effective Protection Rates (EPR)						B*Index					
			Import-competing			Exports			man imp/ all exp	all imp/ all exp	all imp/ man exp	all imp/ ag exp	man imp/ man exp	ag imp/ ag exp
			Indicative rates on manuf.	Indicative rates on agric.	Unweighte d average indicative rates (b)	Manuf.	Agric.	Unweighted average rates						
Benin	1996	1	34.6	12.7	23.6	-10.6	-52.5	-31.6	2.0	1.8	1.4	2.6	1.5	2.4
Burkina Faso	1996	1	83.7	23.4	53.5	none	-31.6	-31.6	2.7	2.2	na	2.2	na	1.8
Cameroon	1996	1	68.8	34.2	51.5	-16.4	-47.8	-32.1	2.5	2.2	1.8	2.9	2.0	2.6
Côte d'Ivoire	1996	1	92.4	21.9	57.2	-11.2	-42.2	-29.8	2.7	2.2	1.8	2.7	2.2	2.1
Ghana	1996	1.01	67.2	27.9	47.5	-21.9	-34.3	-25.0	2.2	2.0	1.9	2.3	2.2	2.0
Malawi	1995	1.04	89.8	1.4	45.6	-3.3	none	-3.3	2.0	1.6	1.6	na	2.0	na
Mali	1997	1	50.5	na	50.5	none	-28.8	-28.8	2.1	2.1	na	2.1	na	na
Mauritius Domestic Industry (c)	1996	1.05	149.0	21.4	85.2	none	none	na	na	na	na	na	na	na
Senegal	1996	1	103.3	32.1	67.7	-14.2	-3.4	-10.2	2.3	1.9	2.0	1.7	2.4	1.4
South Africa	1996	1.0265	67.6	0.0	33.8	-5.5	-8.3	-7.7	1.9	1.5	1.5	1.5	1.8	1.1
Tanzania	1996	1.03	84.2	28.9	56.6	-11.3	-3.7	-8.8	2.1	1.8	1.8	1.7	2.1	1.4
Uganda	1997	1.0445	72.6	22.4	47.5	-3.1	-1.7	-1.7	1.8	1.6	1.6	1.6	1.9	1.3
Zimbabwe	1997	1.062	107.0	14.0	60.5	-4.7	none	-4.7	2.3	1.8	1.8	na	2.3	na
Mean		1.02	82.4	20.0	52.4	-10.2	-25.4	-17.9	2.2	1.9	1.7	2.1	2.0	1.8
Median		1.01	83.7	22.1	51.5	-10.9	-30.2	-17.6	2.2	1.8	1.8	2.2	2.1	1.8
Chile	1998	1.046	15.4	12.4	13.9	-2.6	-3.8	-2.6	1.2	1.2	1.2	1.2	1.2	1.2
Chile	2001	1	15.2	9.1	12.2	-1.9	-2.8	-1.9	1.2	1.1	1.1	1.2	1.2	1.1
Bolivia	2001	1	8.8	10.0	9.4	-2.0	-0.2	-1.5	1.1	1.1	1.1	1.1	1.1	1.1
Senegal	2001	1	51.1	23.4	37.3	-19.9	-2.2	-16.4	1.8	1.6	1.7	1.4	1.9	1.3
Senegal (UEMOA)	2001	1	35.1	13.4	24.2	-11.7	-1.8	-9.7	1.5	1.4	1.4	1.3	1.5	1.2

Source: Authors' computations based on data obtained from authorities of the countries.

(a) Unweighted average of the parallel and official exchange rates (in domestic currency terms) divided by the official exchange rate (Table A1).

(b) Unweighted average of the indicative EPRs on manufactured and agricultural goods.

(c) For domestic firms without preferential access to EU sugar market, EU and US garment markets, or to foreign exchange. For these firms a meaningful EPR on exports could not be computed because these exports were negligible.

Table A 16: IMF 1997 Classification Scheme for Overall Trade Restrictiveness

Tariffs ^a	Non-Tariff Barriers		
	Open less than 1% coverage ^b	Moderate 1-25% coverage ^b	Restrictive 25% coverage ^b or higher
$0 \leq t < 10$	1	4	7
$10 \leq t < 15$	2	5	8
$15 \leq t < 20$	3	6	9
$20 \leq t < 25$	4	7	10
25 % or higher	5	8	10

Source: Sharer (1998)

Notes: (a) Unweighted average tariff & surcharges on dutiable imports.

(b) Coverage of trade or production.

Table A 17: IMF 2000 Classification Scheme for Tariff Restrictiveness

Trade taxes ^b	Non-Tariff Barriers ^a			
	Absolutely no restrictions	Few restrictions; 0-20 % trade coverage ^c	Substantial restrictions; 20-40% trade coverage ^c	Pervasive restrictions; > 40% trade coverage ^c
$0 \leq t < 10\%$	1	3	5	7
$10 \leq t < 15\%$	2	4	6	8
$15 \leq t < 20\%$	3	5	7	9
$20 \leq t < 25\%$	4	6	8	10
$25 \leq t < 35\%$	5	7	9	10
35% or higher	10	10	10	10

Source: Subramanian et al (2000).

Notes: (a) Includes restrictions on exports and imports and other NTBs.

(b) Includes customs duties and other charges levied exclusively on imports, as well as export taxes. We use the sum of NPTR on all import-competing goods and export taxes as a proxy for this variable.

(c) Refers to the share of total trade being affected by NTBs.

Table A 18: Major Exports

Product description	Value in millions of US\$	Export share (%)	BEC category	SITC
Copper & Non-ferrous metals	4,921,339	26.9	input	68
Metalliferous ores and metal scrap	2,622,904	14.3	input	28
Fish, crustaceans, molluscs and aquatic invertebrates	1,629,931	8.9	consumer goods	03
Vegetables and fruit	1,613,698	8.8	consumer goods	05
Pulp and waste paper	1,068,184	5.8	input	25
Cork and wood	780,334	4.3	input	24
Beverages	661,488	3.6	consumer goods	11
Organic chemicals	396,882	2.2	input	51
Inorganic chemicals	382,118	2.1	input	52
Cork and wood manufactures	378,720	2.1	consumer goods	63
Feeding stuff for animals	328,264	1.8	input	08
Paper, paperboard and articles of paper pulp	298,992	1.6	input	64
Petroleum, petroleum products and related materials	250,019	1.4	input	33
Gold non-monetary ex ore	239,555	1.3	input	97
Crude animal and vegetable materials, n.e.s.	206,024	1.1	consumer goods	29
Road vehicles	200,923	1.1	capital goods	78
Miscellaneous manufactured articles, n.e.s.	183,590	1.0	consumer goods	89
Miscellaneous edible products and preparations	164,537	0.9	input	09
Meat and meat preparations	156,188	0.9	consumer goods	01
Manufactures of metals, n.e.s.	141,029	0.8	input	69
Cereals and cereal preparations	122,033	0.7	consumer goods	04
Textile yarn, fabrics, made-up articles	116,271	0.6	consumer goods	65
Fertilizers	97,454	0.5	input	56
Rubber manufactures, n.e.s.	91,699	0.5	input	62
Crude fertilizers, and crude minerals	83,848	0.5	input	27
Others	781,337	4.3		
Total	18,291,997	100.0		

Source: WITS.

Table A 19: Major Import-Competing Industry Output

	Production share (%) (1996)	BEC category
Other Chemical Products n.e.c.	7.0	intermediate
Meat Processing	6.8	consumer
Animal Farming	6.4	consumer
Petroleum Refineries	6.4	intermediate
Metal Products	6.2	intermediate
Agriculture	6.1	consumer
Non-Metal Mineral Products	5.1	intermediate
Bakery Products	4.3	consumer
Other Food Manufacturing n.e.c.	3.9	consumer
Textiles	3.8	consumer
Dairy Products	3.8	consumer
Plastic Products	3.4	intermediate
Wearing Apparel	3.3	consumer
Transportation Equipment	3.2	capital
Non Alcoholic Beverages	2.6	consumer
Animal Feeds	2.6	intermediate
Non-electrical Machinery and Equipment	2.5	capital
Furniture Manufacturing	2.3	consumer
Basic Chemical Products	2.3	intermediate
Grain Mills	2.2	consumer
Iron and Steel	2.0	intermediate
Footwear	1.9	consumer
Non-ferreous basic products	1.7	intermediate
Sugar	1.2	consumer
Rubber Products	1.2	intermediate
Petroleum Extraction	1.1	intermediate
Vegetable Oils manufacturing	1.0	consumer
Electrical Machinery and Equipment	1.0	capital
Beer Manufacturing	0.9	consumer
Iron Mining	0.7	intermediate
Tobacco processing	0.7	consumer
Glass and Glass Products	0.6	intermediate
Leather and Leather Products	0.6	consumer
Alcoholic Beverages	0.5	consumer
Other Manufacturing Industries n.e.c.	0.4	consumer
Coal Mining	0.2	intermediate

Source: Data collected by Bank staff from the countries concerned.

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