

Rags in the High Rent District: Rhetoric and Reality in the Elimination of Textile and Clothing Quotas

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Abstract: Since the 1950s, global trade in textiles and clothing has seen the evolution of a global system of bilateral quotas governing North-South trade in textiles and wearing apparel. As of 2005, these have been removed under the terms of the 1995 Agreement on Textiles and Clothing. In theory, the ATC was to have led to a smooth and progressive liberalization in the sector. In reality, it appears that political leaders throughout the ATC period instead backloaded the problem of adjustment, delaying much of it until the very end of the ATC. In this paper, we explore econometrically the evolution of market access conditions in the textile and clothing sectors (T&C). Working with a panel of bilateral trade data on textile and clothing trade, underlying bilateral tariffs, and the coverage of quotas under the WTOs Agreement on Textiles and Clothing (ATC) we first develop an estimation framework for calculating the tax equivalents of ATC quota restrictions on bilateral trade. Within this framework, we track the price impact of the quotas through the ten year phase-out period. We also discuss a major concern of LDC exporters the impact of quota elimination on market access. Finally, as these quotas are a potentially significant omitted variable, the ATC episode provides us with an opportunity to examine the impact of bilateral quotas on the econometric estimation of trade elasticities.

Keywords: trade policy, ATC, MFA, textiles and clothing, import quotas

JEL classification: F13,

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"She that from whom we all were sea-swallowed, though some cast again, and, by that destiny, to perform an act whereof what's past is prologue, what to come, in yours and my discharge." William Shakespeare, *The Tempest* (Antonio at II, i)

"The world is weary of the past, Oh, might it die or rest at last!" Percy Bysshe Shelly, *A New World*

1 Introduction

Textiles and clothing are the worlds oldest infant industry. Quotas on textiles and clothing trade have been a basic feature of the modern trade landscape since the late 1950s. Because these sectors are also the most important export for many developing countries, like Bangladesh, these quotas have also been the single most obvious thorn in the side of North-South trade relations. The Ministerial Declaration at Punta Del Este that launched the Uruguay Round stated that the "Negotiations in the area of textiles and clothing shall aim to formulate modalities that would permit the eventual integration of this sector into GATT on the basis of strengthened GATT rules and disciplines." In plain language, this meant that quotas on textiles and clothing were finally going to be eliminated. The negotiations launched at Punta Del Este led to the Agreement on Textiles and Clothing (ATC) in 1995, an attempt to end almost 40 years of quotas in an orderly process involving the gradual expansion of quotas and deliberate graduation of whole product categories from the regime. The agreement was flagged as a major source of potential gains from the Uruguay Round Agreements. (See Harrison, Rutherford, and Tarr 1995; and Francois, McDonald and Nordstrom 1995; Hertel et al 1995).

In this paper, we explore the evolution of textile and clothing trade restrictions under the ATC. We start with discussion of the institutional context leading to the ATC, and the implications for low-income country exports. We then turn to estimating the price impact of quotas, working with a panel of bilateral trade data on textile and clothing trade, underlying bilateral tariffs, and the coverage of quotas under the ATC. We develop an estimation framework for calculating the tax equivalents of quotas on bilateral trade.

Within this framework, we track the price impact of the quotas throughout the quota phase-out period. As these quotas are a potentially significant omitted variable, the ATC episode also provides us with an opportunity to examine the impact of bilateral quotas on the econometric estimation of trade elasticities.

2 Background

Like agriculture, the textile and clothing (TC) sectors emerged in the early years of the GATT system as politically sensitive sectors. As such, they have been treated as a special case within the world trading system, with their own regulatory framework. While technically in violation of the GATT, the quotas were first institutionalized in the beginning of the 1960s with the Short Term Arrangements (STA) for international trade in cotton textiles. The STA aimed at an orderly opening of restricted markets to avoid (for importing countries) "detrimental market disruptions." The definition of "market disruption" adopted by the Contracting Parties in 1960 entailed the possibility of singling out imports of particular products from particular countries as the disrupting source. This opened the door for a series of bilaterally negotiated quota restrictions that became the rule in the following Long Term Arrangement (LTA) in 1962. Details on the subsequent evolution of acronyms are provided in Table 1.

By the start of the 1970s, it had become apparent that the multiplicity of makeshift arrangements protecting the textile and clothing industries had to be replaced. Resulting negotiations led to the Multifibre Arrangement (MFA), which went into effect in 1974. Over time, its product coverage was extended from cotton to non-cotton textiles and clothing. The final MFA (known as MFA IV) was extended several times, leading in the end to the Agreement on Textiles and Clothing in 1995.

Like the preceding arrangements, the MFA provided rules for the imposition of quotas, either through bilateral agreements or unilateral actions, whenever actual or perceived surges of imports caused market disruption. (Baughman et al 1997; Krishna and Tan 1997). This included the threat of a surge. In the years leading up to the Uruguay Round Agreements, six developed participants actively applied quotas under the MFA - the EU, the U.S., Canada, Norway, Finland and Austria. These were applied

almost exclusively on imports from developing countries. Sweden liberalized its textile and clothing regime in 1991 and actually managed to withdraw from the MFA. Sadly, it was forced to rejoin this regime when it joined the European Union. Two other developed country participants, Japan and Switzerland, did not impose MFA quotas, but instead restricted themselves to "signalling" a readiness to apply quotas by the act of being signatories to the MFA agreement, combined with (active) import surveillance. As shown by Winters (1994), import surveillance can, at least in concentrated industries, induce a fall in import levels as producers are trying to forestall explicit quotas. The restrictiveness of the applied MFA quotas, and subsequent ATC quotas, varied from product to product, and from supplier to supplier. Norway dropped the use of binding quotas with the shift from MFA to ATC.

The ATC called for a gradual phase out of the quota restrictions carried over from the MFA regime. The integration of the products covered by the agreement was to be achieved in three stages under a ten-year transition period. The first stage called for the integration of products comprising not less than 16 percent of the total volume of each member's 1990 imports of the products listed in the annex to the Agreement. The second stage, beginning in year 4, required the integration of a further 17 percent. The third stage, beginning in year 8, required that another 18 percent of imports be brought under normal GATT rules.

Unfortunately, each importing country was free to choose the products it would integrate at each stage, the only constraint being that they had to encompass products from each of the four groupings: tops and yarn, fabrics, made-up textile products, and clothing. Products that remained restricted during the transition period were to benefit from a progressively increasing quota. The previously applied MFA quota annual growth rates were to be scaled up by a factor of 16 percent in the first stage for instance, from 3 percent to $(3 \times 1.16 =) 3.48$ percent an additional 25 percent in the second stage, and yet another 27 percent in the third stage. This turned a 3 percent initial annual growth rate to 5.52 percent in the third stage.

Table 1: A March of Acronyms: the post-WWII evolution of quotas

<i>year</i>	<i>overview of events</i>
1955-57	U.S.-Japan dispute leads to a 5 year agreement limiting textile exports
1958	United Kingdom imposes "voluntary" limitation on cotton T&C products with Hong Kong, by threatening to otherwise impose quotas at levels lower than prevailing volumes.
1959	United Kingdom signs restraint agreements with India and Pakistan.
1960	GATT Contracting Parties recognize the problem of "market disruption" to serve as an "excuse" for establishing future NTBs.
1961	STA : The Short Term Arrangement (STA) is agreed.
1962	LTA1 : The Long Term Arrangement (LTA) is agreed, to commence October 1, 1962, and last for five years.
1963-65	U.S. tries and fails to establish agreement on trade in wool products.
1966	The United Kingdom implements a global quota scheme in violation of the LTA. The LTA provides only for product-specific restraints.
1967	LTA2 : Agreement is reached to extend the LTA for three years.
1969-71	United States negotiates VERs with Asian suppliers on wool and man-made fibers.
1970	LTA3 : Agreement is reached to extend the LTA for three years. It was later extended three months more, to fill the gap until the MFA came into effect.
1973	MFA I : The MFA is agreed, to commence January 1, 1974, and to last for four years.
1977	The European Economic Community and the United States negotiate bilateral agreements with developing countries prior to agreeing to extension of the MFA.
1977	MFA II : The MFA is extended for four years.
1981	MFA III : The MFA is renewed for five years. The USA, under pressure from increased imports resulting from dollar appreciation, negotiates tough quotas.
1986	MFA IV : The MFA is extended for 5 years, to conclude with the expected end of the Uruguay Round.
1991	MFA IV+ : The MFA, otherwise due to expire, is extended pending the outcome of the Uruguay Round negotiations.
1993	The Uruguay Round (UR) draft final act provides for a 10-year phase-out of all MFA and other quotas on textiles in ATC. MFA extends until UR comes into force. ATC allows credit for liberalization in products that are not actually restricted.
1995	ATC1 : 1st ATC tranche liberalizes 16% of 1990 import volume of importing countries
1998	ATC2 : 2nd ATC tranche liberalized by importing countries 17% of 1990 import volume.
2001	ATC3 : 3rd ATC tranche liberalized by importing countries 18% of 1990 import volume.
2005	ATC4 : 4th ATC tranche liberalized by importing countries 49% of 1990 import volume.

Source: Based on Francois, Glisjman, and Spinanger (2000).

3 Erosion of Implicit Preferences

In addition to backloading, an additional area of concern related to the implementation of the ATC and associated Uruguay Round MFN-tariff reductions has been the scope for preference erosion, especially for the least developed African countries. Virtually all African countries have entered into contractual preference arrangements with the European Union, and obtain preferential treatment for certain exports in the United States and Japan, as well as in other developed country markets under GSP schemes. There has consequently been a concern that implementation of the market access results of the Uruguay Round would diminish rather than augment their trade and economic prospects (Blackhurst et al 1996).

The actual scope for general preference erosion for African Lom (now Cotonou) countries is very limited. Over half of the EU's imports from African countries are petroleum and other fuels, already bound duty-free, and agricultural and industrial products divide the rest. Access for industrial products is the main area where the EU's MFN-tariff reductions will have any impact. Even here, almost three-quarters of African exports to the European Union already enter at rates of less than 3 per cent, and this percentage will rise to 80 per cent. For these products, the margin of preference afforded under Lom is likely to be consumed in large part by associated administrative costs.

Though not through tariffs, there is scope for relative preference erosion of another sort under the ATC. This is because at the start of the ATC phase-out, some countries and regions faced much greater restrictions than others. The lower-income suppliers in India and elsewhere in South Asia, in particular, faced negative preferences, in the sense that they faced greater effective restrictions than suppliers from East Asia and elsewhere. The distributional effect of the MFA restrictions was thus to discriminate between developing countries, and against suppliers like India and Pakistan. Even where some least developed countries were favoured by preferential access, this has been largely at the expense of other least developed countries.

The European Union has addressed the problem of relative preference erosion following ATC quota elimination, to some extent, with the Everything But Arms initiative. With the exclusion of sensitive agricultural trade, the poorest developing coun-

tries now receive duty-free access to the European market, though the value of these preferences is questionable. (See Manchin 2004). Most other developing countries also receive some preferences, with the result that several Latin American countries (Mexico, Caribbean producers) also receive or are soon to receive steep preferences. See Francois and Spinanger (2004) for more on this.

The MFA and ATC have, in effect, been serving as a negative preference system, helping other developing country suppliers at the expense of two potentially dominant suppliers – India and China. The system of preferences in place on tariffs will, to some extent, compensate for the loss of implicit margins provided by the ATC quotas. However, we can also expect that, with further reductions in textile and clothing tariffs under Doha negotiations, the shift of textile and clothing trade will be accelerated. In the next section we examine the magnitude of textile and clothing quotas in terms of price effects, and their evolution since the end of the Uruguay Round.

4 The Evolution of Quota Rents

4.1 Data

To assess the evolution of textile and clothing quotas under the ATC, we work with trade and tariff data from UN's COMTRADE, UNCTAD's TRAINS database and the WTO's database of applied tariffs. These data were obtained through the UNCTAD/World Bank WITS data system, and yield trade and applied tariff data spanning from 1996 to 2004. For EU Members, we have had to combine common external tariff data with individual Member import data. Our trade and tariff data have been combined, in turn, with data on geographic distance taken from CEPII's recent compilation of various distance measures. See Clair et al (2004). In total, this yields a database with 47,500 observations on bilateral textile trade flows and 44,452 observations on bilateral clothing trade flows, including 27,442 observations on OECD textile imports and 26,071 observations on OECD clothing imports. Annually, the data range between roughly 2,200 and 7,000 per year and sector.

For the period covered, import quotas were maintained by the United States, Canada,

and the (then 15) Members of the European Union. The U.S. import quotas (not all involving WTO Members) cover 46 exporters. The European Union import quotas (again not all involving WTO Members) cover 20 exporters. Canadian quotas cover 43 exporters. In our sample, 18,412 of our textile data points involve imports by quota users, while 17,787 of our clothing datapoints involve imports by quota users.

4.2 Estimating Framework

Our approach to estimating the impact of quotas involves first assuming CES import demand. As we are working with data that reflect actual trade flows and actual prices, and for which therefore price indexes can be taken as given in each cross-section, such an approach is consistent with either the Armington approach to modeling trade flows or Ethier/Krugman-type monopolistic competition based on CES demand for variety.

Formally, starting from CES preferences, if we take any individual importing country j , demand for imports from source country i can be written as follows:

$$m_{i,j} = E_j \left(\frac{p_{i,j}}{\alpha_i} \right)^{-\sigma} P_j^{\sigma-1} \quad (1)$$

where $m_{i,j}$ represents total imports by country j from country i , E_j is total expenditure on the product category, $p_{i,j}$ is the internal price index for goods imported from country i , α_i is the country weight, P_j is the CES composite price index, and σ is the absolute value of the Allen-elasticity of substitution.

We can in turn map world price indexes for national varieties (or variety-scaled varieties with firm-level differentiation) as follows:

$$P_{i,j} = P^*_i (1 + \tau_{i,j}) (1 + \omega_{i,j}) \gamma_{i,j} \quad (2)$$

In equation (2), P^*_i is the world price index for exports from country i , $\tau_{i,j}$ is the bilateral tariff applied to imports from country i sold in country j , $\omega_{i,j}$ is the export tax equivalent of quantitative restraints, measuring the price impact of non-tariff barriers, and $\gamma_{i,j}$ measures transport costs following from goods moving between i and j . Such costs may be a function of geographic distance, for example, as is well established in the

gravity equation literature. See for example Disdier and Head (2003).

To move from equations (1) and (2) to estimating equations, we first substitute equation (2) into equation (1), neglecting the quantitative constraints for a moment, and then take logs.

$$\begin{aligned} \log m_{i,j} &= \log E_j - \sigma \log P_i^* - \sigma \log (1 + \tau_{i,j}) \\ &\quad - \sigma \log \gamma_{i,j} + \sigma \log \alpha_{i,j} + (\sigma - 1) \log P_j \end{aligned} \quad (3)$$

We normalize the world price indexes to unity, such that imports at world prices map to quantities. We also assume similar country weights α in the cross-section, and specify transport costs $\gamma_{i,j}$ as a function of both geographic distance $D_{i,j}$ and a dummy for common borders $B_{i,j}$. Finally, we can control for both the domestic internal price index P and the set of import CES weights by time-varying importer and exporter dummies X and M . Here we follow Matyas (1997) who shows that the proper econometric specification of a gravity model has to include fixed importer and exporter effects, however we depart from his specification in that our importer and exporter dummies further include the time-varying gravity weights. For our panel of observations indexed over time t we therefore have:

$$\begin{aligned} \log m_{i,j,t} &= \beta_{tariff} \log T_{i,j,t} + \beta_{border} D_{border,i,j} + \beta_{dist} \log \delta_{i,j} \\ &\quad + \beta_{time} t + X_{i,t} + M_{j,t} + e_{i,j,t} \end{aligned} \quad (4)$$

When we introduce quotas, we take advantage of the fact that in observed trade data, expenditures will reflect the price impact of the quotas. This means that we can estimate the manifestation of these price effects through the export-tax equivalent of the quota. Note that while the quotas depress trade, they increase the delivered price by the quota premium. This is why we expect a positive coefficient on the quota dummy.

However, it is then important to recognize that a quota is either binding, or not binding. This means that the export tax equivalents of the quota $\omega_{i,j}$ will be either positive or zero, but will not be negative. We have

$$\begin{aligned} \log m_{i,j,t} &= \beta_{tariff} \log T_{i,j,t} + \beta_{border} B_{i,j} + \beta_{dist} \log \delta_{i,j} \\ &\quad + \beta_{tariff} \log \Omega_{i,j,t} + X_{i,t} + M_{j,t} + e_{i,j,t} \end{aligned} \quad (5)$$

where $\Omega_{i,j} = (1 + \omega_{i,j})$ and $\mathbf{\Omega} \geq 1$. The inequality constraint on the matrix of export tax equivalents $\mathbf{\Omega}$, combined with the equality of the tariff and quota price elasticity in equation (5), yields an estimation problem involving inequality constraints when we focus on the estimation of quota price wedges.

4.3 Results

Tables 2 and 3 report OLS estimates of equation (4). The first column in both tables shows OLS results for the full sample, while the subsequent columns show OLS results for the sub-samples of non-OECD countries, OECD countries, and OECD countries excluding quota users. As quantity constraints, by definition, limit price-sensitivity, we should expect this to bias downward any estimate of price sensitivity, corresponding to the tariff elasticity in the Tables. Indeed, the pattern is one of significantly different, and higher, tariff elasticities when we exclude the countries that utilize quotas. In addition, the non-OECD countries in the second column exhibit a somewhat higher (though not significantly different) degree of price sensitivity than the sub-sample of OECD countries that do not use quotas, in the last column.

Based on Tables 2 and 3, we expect our estimates of the price elasticity to be biased in the samples including quota imposing importers. In estimating quota price effects through equation (5), we therefore start by imposing the estimated elasticities reported in Tables 2 and 3 for the non-quota OECD sample on the full OECD sample. We then treat equation (5) as a constrained minimization problem, where we solve for the set of non-negative quota coefficients and importer and exporter dummies that minimize the sum of squared errors.¹ In estimating equation (5), we have allowed for three sets of quota price effects, mapped to ATC stages 1, 2 and 3 as indicated in Table 1. This gives us a broad sense of the evolution of the quota wedges over the stages of the ATC phaseout period.

The R-squared for the full OECD sample without allowing for quotas, as reported in Tables 2 and 3, was .8096 for textiles and .8139 for clothing. For the same sample, with the constrained, non-linear least squares estimates based on equation (5), the

¹Our OLS results in Tables 2 and 3 were estimated in STATA, while the constrained least squares estimates of the quota premiums were estimated in GAMS.

Table 2: Textile regressions

coefficient	All countries	Non-OECD importers	All OECD importers	Non-quota OECD
<i>distance</i>	-1.41*** (-99.18)	-1.57*** (-73.96)	-1.14*** (-52.35)	-1.23*** (-39.20)
$\ln(1 + t)$	-5.43*** (-22.64)	-7.67*** (-24.80)	-2.98*** (-8.19)	-6.46*** (-13.05)
<i>border</i>	0.76*** (11.57)	1.31*** (13.07)	0.35*** (4.27)	0.31*** (2.08)
	R-sq: .7485 obs: 46,677 df: 44,188 F: 52.85 Pr>F 0.00	R-sq: .7260 obs: 19,235 df: 17,162 F: 21.95 Pr>F 0.00	R-sq: .8096 obs: 27,442 df: 25,243 F: 48.84 Pr>F 0.00	R-sq: .8478 obs: 9,030 df: 7,239 F: 22.52 Pr>F 0.00

note: *** denotes >.01 level of significance; t-values in parentheses.

Table 3: Clothing regressions

coefficient	All countries	Non-OECD importers	All OECD importers	Non-quota OECD
<i>distance</i>	-1.45*** (-97.95)	-1.48*** (-65.25)	-1.25*** (-55.33)	-1.22*** (-38.87)
$\ln(1 + t)$	-0.35 (-1.21)	-2.56*** (-5.29)	-0.16 (-0.45)	-2.15*** (-4.10)
<i>border</i>	0.77*** (11.53)	1.28*** (12.04)	0.41*** (4.85)	0.63*** (4.07)
	R-sq: .7584 obs: 43,273 df: 40,814 F: 52.11 Pr>F 0.00	R-sq: .6681 obs: 17,202 df: 15,252 F: 15.75 Pr>F 0.00	R-sq: .8139 obs: 26,071 df: 23,887 F: 47.86 Pr>F 0.00	R-sq: .8388 obs: 8,284 df: 6,580 F: 20.10 Pr>F 0.00

note: *** denotes >.01 level of significance.

corresponding values are .953 and .954. On the basis of an F-test, we can reject the null hypothesis that adding the quotas to the model does not help with explaining trade flows $H_0 : \Omega = 0$ at any reasonable level of significance. The results of this estimation are reported in Tables 4, 5, and 6. We only report country rates where we have estimated that there actually were binding quotas at some point during the ATC phaseout.

What has happened to the quotas? Starting with Canada, in Table 4, Canadian quotas have generally followed the intended pattern of liberalization. In some cases, like clothing from China, the effect of quota expansion and graduation has been quite dramatic. While some substantial barriers still remained in Stage 3, they were for the most part against minor suppliers. We do however see confirmation of a pattern reported in Francois and Spinanger (2004). Canada, and the United States, maintained significant restraints on suppliers of wool products throughout the period. In particular, while East European exporter quotas are in narrow categories corresponding for wool-based clothing and fabrics, North American imports are significantly constrained. This is also apparent in Table 5.

Turning to the European Union, we see that liberalization has been more limited. Constraints against China have fallen by roughly half, but were still substantial (14.6 percent for textiles and 21.2 percent for clothing) at the end of the period. Imports from India had essentially been liberalized for clothing, though they were still restricted for textiles. Vietnam, an emerging player in the 1990s, also remained restricted at the end of the ATC, at rates comparable to those for China. Broadly speaking, the pattern is one of partial but not total liberalization, more or less consistent with the plan to leave half of liberalization until the end of the ATC.

Table 4: Canada: NLS estimates of export tax equivalents

partner	1996-98 Stage 1	1998-2001 Stage 2	2002-2004 Stage 3
<i>textiles</i>			
Untd Arab Em	0.193	0.056	0.030
Bangladesh	0.011	0.000	0.000
Bulgaria	0.000	0.028	0.057
China	0.056	0.000	0.000
Hungary	0.065	0.027	0.000
India	0.009	0.000	0.000
Jamaica	0.000	0.049	0.145
Cambodia	0.208	0.141	0.000
Laos	0.094	0.084	0.048
Lebanon	0.307	0.000	0.000
Sri Lanka	0.040	0.000	0.000
Lesotho	0.353	0.000	0.000
Morocco	0.050	0.093	0.170
Malaysia	0.081	0.000	0.000
Oman	0.069	0.000	0.000
Pakistan	0.018	0.000	0.000
Poland	0.000	0.006	0.029
Korea, PR	*	0.869	0.692
Qatar	0.065	0.786	0.340
Romania	0.000	0.000	0.025
Russia	0.001	0.000	0.000
Singapore	0.045	0.000	0.000
Slovakia	0.000	0.087	0.000
Swaziland	0.000	0.549	0.000
<i>clothing</i>			
Brazil	0.325	0.000	0.000
China	0.345	0.000	0.000
Lebanon	0.572	0.000	0.298
Morocco	0.677	0.752	0.493
Poland	0.223	0.129	0.099
Korea, PR	*	0.378	2.336
Romania	0.000	0.075	0.224
Slovakia	0.000	0.000	0.312
Syria	0.940	0.000	0.000
Turkey	0.202	0.000	0.000
Uruguay	0.395	0.000	0.000
Vietnam	0.388	0.251	0.059

note: *denotes no data, no trade, or no quota

R-squared for textile regression: .953

R-squared for clothing regression: .954

F, Pr>F for textile quotas: 613.09, 0.00

F, Pr>F for clothing quotas: 842.90, 0.00

Finally, Table 6 reports our estimates for the United States. The most striking set of numbers, given political sensitivities, is the pattern of price wedges for China. We estimate that protection against China has actually gone up over the ATC period, measured in terms of the price impact of the quotas. This means that, in some ways, the adjustment pressures from the recent final stage of the ATC may be as great as if the quotas had simply been eliminated all at once in 1995-96. This should not be surprising, as China grew much faster than the quota growth rates embodied in the ATC. Basically, supply growth, and the growth in U.S. demand, appears to have outstripped the expansion of the quotas under the ATC. Similarly, we see no real liberalization vis-a-vis India, while quotas became increasingly binding (again meaning that the combination of growing U.S. demand for imports and export supply growth outstripped the quota growth rates). Note that in 2001-2002, Vietnam graduated from Smoot-Hawley to MFN tariffs. Vietnam's trade is mapped to MFN tariffs in the WITS database, so that the Stage 1 and Stage 2 estimates reflect Smoot-Hawley tariffs. The move to MFN rates is reflected in the dramatic drop in Vietnam's price wedges moving into ATC Stage 3. Note again that, like Canada, the U.S. also has substantial protection against East European suppliers. This corresponds to a narrow set of wool-based products that were restricted by U.S. quotas. These quotas were not really an issue at the end of the Uruguay Round. In 1993, these countries were emerging from the fog of communism, and were not major players on world markets. Detailed examination of the quota and trade categories involved shows that the North American regimes are protecting domestic producers of wool fabrics, suits, and related items. This protection is quite high. Finally, several countries have been largely graduated toward a liberal trade regime. This includes many of the lower income Asian and African suppliers, as reflected by their absence from the Tables.

The estimates in Tables 4 to 6 have serious implications for the pattern of textile and clothing trade. Non-ATC suppliers, including U.S. FTA partner Mexico, EU customs union partner Turkey and the beneficiaries of EU trade preferences in Africa, will experience a dramatic erosion of competitive position in the immediate future. In the case of the United States, this implies a substantial shift of import demand for clothing

Table 5: EU: NLS estimates of export tax equivalents

partner	1996-98 Stage 1	1998-2001 Stage 2	2002-2004 Stage 3
<i>textiles</i>			
Belarus	*	0.032	0.113
Brazil	0.078	0.045	0.020
China	0.204	0.127	0.146
Hong Kong	0.065	0.014	0.000
Indonesia	0.015	0.008	0.000
India	0.083	0.030	0.015
Korea, PR	*	0.071	0.144
Korea, Rep.	0.102	0.081	0.071
Malaysia	0.114	0.065	0.084
Pakistan	0.153	0.061	0.023
Peru	0.074	0.070	0.060
Philippines	0.007	0.000	0.000
Singapore	0.121	0.068	0.060
Sri Lanka	0.060	0.030	0.000
Thailand	0.044	0.025	0.026
Uzbekistan	0.055	0.066	0.000
Vietnam	0.198	0.128	0.084
<i>clothing</i>			
Brazil	0.154	0.000	0.000
China	0.514	0.184	0.212
Indonesia	0.017	0.000	0.000
India	0.111	0.000	0.000
Korea, Rep.	0.391	0.209	0.197
Sri Lanka	0.199	0.007	0.087
Peru	0.186	0.074	0.240
Philippines	0.265	0.204	0.190
Korea, PR	*	*	0.115
Thailand	0.279	0.097	0.057
Uzbekistan	0.165	0.042	0.096
Vietnam	0.400	0.202	0.190

note: *denotes no data, no trade, or no quota

R-squared for textile regression: .953

R-squared for clothing regression: .954

F, Pr>F for textile quotas: 613.09, 0.00

F, Pr>F for clothing quotas: 842.90, 0.00

Table 6: USA: NLS estimates of export tax equivalents

partner	1996-98 Stage 1	1998-2001 Stage 2	2002-2004 Stage 3
<i>textiles</i>			
Bangladesh	0.000	0.001	0.024
Belarus	0.000	0.000	0.036
Brazil	0.100	0.079	0.017
Cambodia	0.396	0.000	0.000
China	0.071	0.071	0.157
Czech Rep.	0.002	0.092	0.202
Hungary	0.000	0.144	0.233
Indonesia	0.000	0.042	0.084
India	0.059	0.045	0.051
Korea, Rep.	0.000	0.004	0.021
Laos	0.000	0.184	0.165
Macedonia	0.420	0.000	0.000
Malaysia	0.000	0.000	0.040
Pakistan	0.059	0.000	0.000
Poland	0.070	0.170	0.233
Romania	0.034	0.010	0.134
Slovakia	0.120	0.293	0.327
Thailand	0.000	0.000	0.002
Turkey	0.000	0.000	0.035
Ukraine	0.000	0.003	0.278
Uruguay	0.000	0.069	0.195
Vietnam	0.664	0.514	0.000
<i>clothing</i>			
Bulgaria	0.000	0.000	0.217
Brazil	0.101	0.000	0.044
China	0.591	0.446	0.689
Czech Rep.	0.253	0.606	1.229
Hungary	0.000	0.287	0.605
India	0.193	0.053	0.211
Cambodia	0.335	0.000	0.000
Laos	0.050	0.618	0.981
Pakistan	0.000	0.000	0.056
Poland	0.449	0.782	0.848
Korea, PR	*	*	2.291
Romania	0.119	0.382	0.846
Slovakia	0.000	0.138	0.782
Turkey	0.000	0.000	0.252
Uruguay	0.819	0.587	0.365
Vietnam	1.581	1.571	0.039

note: *denotes no data, no trade, or no quota

R-squared for textile regression: .953

R-squared for clothing regression: .954

F, Pr>F for textile quotas: 613.09, 0.00

F, Pr>F for clothing quotas: 842.90, 0.00

toward China, Turkey, and India. In addition, sourcing of wool products can be expected to shift further out of North America. In the European Union, we should expect a large, but less so, shift of demand toward China as well. This is because the quota premium for China is less than the China premium for the United States. This will be accompanied by a further shift toward East Asian supplies, and the EU has higher East Asian premiums than the U.S. This means, of course, that in third markets, non-APC suppliers should pick up market share. This includes export markets like Australia, New Zealand, and Japan, in addition to the middle-income importers.

5 Conclusions

In this paper, we have examined the evolution of textile and clothing quota rents under the Uruguay Round Agreement on Textiles and Clothing (the ATC) through 2004. The ATC quotas have been in phase-out mode since 1995-96. A key message from our calculations is that the problem of China's (PRC) textile and clothing sector integration was basically deferred. This means that the potential still exists for a substantial surge in China's exports after 2005. Such a surge in Chinese exports would of course mean lost market share for most other developing countries. Of course, this will only happen if other economies do not attempt to take advantage of specific contingent protection rules included in China's protocol of WTO accession. These permit other WTO members to keep protectionist pressure up against China (PRC) for 15 years. They cover special anti-surge clauses for textile and clothing products (4 years), general anti-surge clauses (12 years) and treatment of China as a non-market economy in antidumping cases (15 years). Icing the cake is the fear that anti-dumping measures against China will also rise. The pattern of ATC quotas across regions promises that the next few years will be very interesting indeed.

References

- Baughman, L. R. Mirus, M. Morkre, and D. Spinanger (1997). "Of Tyre Cords, Ties, and Tents " *World Economy* 4: 407-434.
- Chyc, K., M. Gelhar, D. gray, T. Hertel, E. Ianchivichina, B. McDonald, and M. Tsigas (1996), "The GTAP Database, " in T. Hertel, ed., *Global Trade Analysis*, Cambridge: Cambridge University Press.
- Clair, G., G. Gaulier, T. Mayer, and S. Zignago (2004). "Notes on CEPIIs distances measures " CEPII: Paris.
- De Melo, J. and A.L. Winters (1993). "Price and Quality Effects of VERs Revisited: A Case Study of Korean Footwear Exports" *Journal of Economic Integration* 8: 33-57.
- Disdier, A-C and K Head (2003). "Exaggerated Reports on the Death of Distance: Lessons from a Meta-Analysis " mimeo, TEAM, Universit?e de Paris I Panth?eon Sorbonne.
- Francois, J.F. and D. Spinanger (2004). "Liberalizing Quotas on Textiles and Clothing: Has the ATC Actually Worked? " paper presented at the annual GTAP conference, Washington.
- Francois, J.F. H.H. Glismann and D. Spinanger (2000). "The Cost of EU Trade Protection in Textiles and Clothing" Kiel Working Papers no. 997, August.
- Francois, J. B. McDonald and H. Nordstrom (1995). "Assessing the Uruguay Round" in W. Martin and L. Alan Winters, eds., *The Uruguay Round and the Developing Economies*, World Bank discussion paper 307.
- Harrison, G.W., T.F. Rutherford and D.G. Tarr (1995). "Quantifying the Uruguay Round " in W. Martin and L.A. Winters (eds.), *The Uruguay Round and the Developing Economies* (World Bank Discussion Paper 307. Washington, DC).
- Hertel, T.W., W. Martin, K. Yanagishima and B. Dimaranan (1995). "Liberalizing Manufactures in a Changing World Economy" in W. Martin and L.A. Winters (eds.), *The Uruguay Round and the Developing Economies* (World Bank Discussion Paper 307. Washington, DC).
- Krishna, K. And L.H. Tan (1997). "The Multifibre Arrangement in Practice: Challenging the Competitive Framework" in D. Robertson ed., *East Asian Trade After the Uruguay Round*, Cambridge.
- Matyas, L. (1997). "Proper Econometric Specification of the Gravity Model " *The World Economy* 20:363-368.