Global Implications of Unraveling Textiles and Apparel Quotas

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Abstract
With the end of the Agreement on Textiles and Clothing on 1 January 2005, the system of bilateral quota restraints on textiles and clothing negotiated by the US and European Union was dismantled. In this paper I examine the high-risk strategy that some countries adopted to exploit this protective system, and I analyze the impacts on the trade patterns of these countries from the removal of the quotas.

There is evidence of a re-establishment of comparative advantage as the determinant of trade patterns and volumes. There have been more successes in maintaining and expanding market share among those countries pursuing the high-risk strategy of concentrated textiles/apparel exports to the US and EU than had been forecast. Unfortunately, there have also been many failures, with attendant steep reductions in manufactured exports.

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The system of bilateral quantitative restraints (or quotas) on textile and apparel imports was an enduring feature of the US and European Union (EU) commercial policy system. From its inception in the early 1960s with the Long-Term Arrangement in Cotton Textiles (LTA), through its codification in the Multi-Fiber Arrangement (MFA) from 1974 to 1995, and to its 1995-2005 form in the Agreement on Textiles and Clothing (ATC), the system provided protection to US and EU producers of textiles and apparel.

In the negotiations that led to the adoption of the ATC in 1995, the US and EU agreed to dismantle the system of quantitative restraints sequentially. A large number of restraints was removed at the beginning of 1995, 1998 and 2002, but those remaining governed trade in the categories of textiles and apparel most produced in the US and EU. These remaining restraints were removed on 1 January 2005. The ATC by its end had evolved into a complicated interlocking set of bilateral agreements on quantities exported. They acted as voluntary export restraints, but they were binding in any given year on only a small subset of the countries under restraint. Specific limits and group limits interacted in non-transparent ways to limit a given country's exports.

Removal of the ATC restraints led to a drastic re-sourcing of US and EU textiles and apparel imports. In this paper I illustrate the initial resourcing of imports, both in aggregate and in three specific quota categories. The increased concentration of sourcing in China and India, predicted prior to the removal of restraints, is certainly evident. Also evident is the success of firms in a number of other countries in expanding their exports. The tragedy of this trade liberalization has been felt in a number of smaller developing countries whose exports have been cut back drastically.

I. Characteristics of the restraints on textiles imports to the US and EU.

The basic unit of the quota system was the restraint category, or quota category. These categories were defined as aggregated subgroups of textile and apparel products with some shared characteristic or raw material. The system of import restraints defined by the US identified 11 aggregated categories of yarns, 34 aggregated categories of textiles, 86 categories of apparel and 16 categories of miscellaneous textiles (e.g., towels). Together these categories spanned the entire set of US textile and apparel imports. The EU identified 41 categories of yarns, 28 categories of textiles, 42 categories of apparel and 32 categories of miscellaneous textiles for a total of 143 categories – although some of these categories were further subdivided by raw material.[1]

Each category included multiple products. For example, US category 225 (blue denim) was aggregated from 16 distinct HS product lines. Products included in each category were similar, but could have significant differences: for example, the "blue denim" category included denim made from both cotton and man-made fibers. There is no corresponding category for the EU: its blue-denim imports would have been classified

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[1] The categories for the US, and the correspondence between those categories and the HS classification of imports, are published by the Office of Textiles and Apparel (OTEXA), Department of Commerce, at http://otexa.ita.doc.gov/corr.htm. The categories for the EU, and concordance with CN category, are published in EEC Council Regulation 3030/93 of 12 October 1993.

EU category 2 (woven cotton fabric, with 105 CN product lines) or EU category 3 (synthetic woven fabric, with 80 CN product lines).

Limits under the system of restraints were divided into specific limits and group limits. Specific limits governed the import of goods within the specific quota category. Group limits placed aggregate limits on a subset of the quota categories. If a country's exports were subject to group limits but not specific limits, then the suppliers of that country (or more likely, a government agency supervising these exports) could choose any mix of goods shipped to the US so long as in aggregate the totals did not exceed the group limit. Some group limits covered only two quota categories: e.g., US group 300/301, covering US quota categories 300 (carded cotton yarn) and 301 (combed cotton yarn). Others spanned a large number of categories: for example, Subgroup 1 in Hong Kong included US quota categories 200, 226, 313, 314, 315, 369 and 604. In many cases, a country had its exports bound by both specific limits and group limits.

Under the MFA and ATC, exporting countries were given flexibility in meeting these restraints. In each category, the agreement specified a percentage by which the country could either exceed or fall short of its restraint. In those cases, a maximum percent of possible "carryforward" or "carryover" is specified in the agreement. With carryforward, the country transfers part of this year's quota to the following year. With carryover, the country exceeds its quota in this period by counting the excess against quota in the following year.[2]

Not all textiles exporters were subject to quantitative limits. Under the MFA and ATC, restraints were negotiated whenever a country's exports caused (or threatened to cause) market disruption in the US or EU. Of the 152 countries exporting cotton knit shirts to the US (US categories 338 and 339), only 32 were subject to quantitative limits in 2004 and of these only 11 exported as much as 90 percent of the quota limit to the US. Similarly, of the 156 countries exporting knit shirts (cotton and other fabrics) to the EU only 25 were subject to quantitative limits in 2004, and of those four exported more than 90 percent of the quota limit to the EU.

II. Previous research on these restraints.

The ATC and its predecessor MFA have prompted academic research in the past that can be reported in two broad categories. The larger category has included calculations of the quantitative impact of these restraints on welfare in the US. Cline (1987), de Melo and Tarr (1990), and more recently US ITC (2002), illustrate these efforts and document the large costs to consumers associated with the restraints. The smaller category includes papers that examine the quantitative effects of these restraints on the exporting nations. Dean (1990) examines aggregate imports of textiles and clothing products from eight Asian countries during the period 1975-1984, and concludes that the MFA restraints were successful in restraining exports from the targeted countries: in her words, "a controlled

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[2] Information on flexibility is drawn from "Summary of Agreements", OTEXA, January 2003 and from Annex 8, EEC Council Regulation 3030/93, as updated in EC Commission Regulation 930/2005.

country's import share grew, on average, 56 percent more slowly than the share of an uncontrolled country." (Dean, 1990, p. 69)

A number of authors have used computable general-equilibrium models to estimate the impact of the MFA system (and its removal) on developing countries. Trela and Whalley (1990) found that the aggregated system imposed welfare losses upon the developing-country exporters, and calculated a new general-equilibrium outcome for the post-system world economy. Yang et al. (1997) examined the relative growth of textiles exports to the US across developing-country exporters as the system of restraints is discontinued. All regions were forecast to increase textile exports, although Hong Kong, Taiwan and Korea were expected to face reduced demand for apparel as other developing countries expanded market share.

Dean (1995) examined the incidence of restraint agreements under the MFA in order to determine the determinants of negotiated restraints.. The MFA, and after that the ATC, called for restraints to be negotiated on categories of textiles and apparel imported into the US if a country's exports caused or threatened to cause market disruption in the US. Dean concluded that in the early years of the MFA (1974-1977) this was in fact the case – exporters individually responsible for large shares of US imports were targeted with these restrictions. In the later years of the MFA (1978-1985), the restraints were introduced upon countries representing much smaller shares of total US imports. These, according to Dean, may have been designed to target the threat of disruption rather than an actual disruption.[3]

Evans and Harrigan (2003) investigated the sourcing of apparel imports into the US under the constraints of the MFA. They used a simple model of import sourcing with three determinants: a country-specific effect, a "trade frictions" variable dependent upon tariffs and transport costs, and an interactive term of distance and a replenishment coefficient. Their central hypothesis relates to the hypothesis of "lean retailing" from Abernathy et al. (1999) – that retailers will source rapid-replenishment goods in closer locations to ensure quick availability – and they estimated this in a model that admits the impact of quota restrictions. They separated apparel imports into categories, and identify each category either as "rapid replenishment" or not. They concluded that import growth in rapid-replenishment goods was significantly larger in local suppliers, thus supporting the lean retailing hypothesis.

Panagariya et al. (2001) estimated a demand system for apparel exports from Asia to the US. They used the fact that restraints were binding to simplify the typical demand system: quantities were treated as exogenous, and prices as endogenous. The MFA system was not itself the subject of the analysis, but the maintained hypothesis. The authors conclude that within this system the price elasticities of demand for textiles and apparel in the US are quite high: for example, they estimated a price elasticity of 26 for Bangladesh's textiles and apparel exports to the US.

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[3] It's also the case that restraints, once introduced, have not been removed. Thus, the "second wave" of restraints would have to be on smaller exporters, even if the policy goal is to restrain the largest exporters remaining unrestrained.

III. Warning signs for countries of removal of quotas.

Removing the quota system certainly created winners and losers. In a well-diversified economy, these gains and losses will be moderated. However, there will be some economies in which the potential for gain and loss will be magnified by the country's reliance upon one product, and one export market, for a disproportionate part of its sales. In this section I identify those countries susceptible to large swings, either up or down, in response to the removal of quotas.

This organization is built around the concept of export-led growth. If textile and apparel products are a disproportionately large share of total exports, if the US and EU are a disproportionately large share of the export market, and if the export/GDP ratio is large, then I will conclude that the country is disproportionately at risk from quota removal.

The critical ratio for most countries will be the existing (i.e., observed in 2004) ratio of textile and apparel exports to the US and EU over the GDP of the exporting country.[4] Denote the value of textile and apparel exports to the US and EU as X_{TU}, and GDP as Y. Then this ratio can be expanded as follows:

$$X_{TU}/Y = (X_{TU}/X_U)*(X_U/X)*(X/Y)$$

The ratio breaks into three components.

- The first component (X_{TU}/X_U) is the ratio of textiles and clothing exports to the US and EU to total exports to the two regions. It indicates the importance of textiles and apparel exports for the export performance of the regions by the country.
- The second component (X_U/X) is the ratio of exports to these two regions to total exports by the country. Larger values of this ratio represent more concentrated and specialized export profiles for the country.
- The third component (X/Y) measures the ratio of total exports to total GDP for the country. It indicates the degree to which exports are relied upon as a source of demand for domestic production.

An elevated value of any of these can be interpreted as a source of risk to the country when quotas are eliminated.

Risk is not necessarily a bad thing in this instance: heightened risk indicates simply that there is a greater potential for large swings in exports, and thus economic growth, in the exporting country. That swing could be positive, leading to more rapid growth, or negative. The best analogy may be to diversification of a portfolio. When a country has low values of each of these components of risk, it is well-diversified with regard to the shock from removal of quotas. Larger values for each component indicate concentration: either in goods produced, in trading partner, or in reliance on exports for growth. Such

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[4] The EU is defined in this paper as the EU-15. It does not include the accession countries.

concentration will magnify gains and/or losses incurred with the removal of the quota system.

Concentration in exports of textiles and apparel. The first source of risk comes from heavy reliance upon textiles and apparel sales among total exports to the quota-imposing countries. As an indicator of this reliance, I examine the ratio of the value of textiles and apparel exports to total exports to the US and EU in 2004. Those countries for whom textiles and apparel exports represent at least 30 percent of total exports to these two regions are listed in Table 1 with their values of (X_{TU}/X_U). These 34 countries are typically small economies, and their residents had identified export niches within textiles and apparel that were apparently not available in other sectors.[5]

The countries are ranked by the weighted average of concentration ratios. Some (like Cambodia or Bangladesh) are strongly specialized in their trade with both the US and the EU, while others specialize with regard to one but not the other. Laos, for example, specializes in textiles and apparel for the EU market, but less so for the US; the Maldives Islands specializes in the US market, but not for the EU.

Concentration in exports to the US and EU. The second source of risk arises with reliance upon the US and EU markets as a destination for exports. In Table 2 I report the ratio (X_U/X) for countries with values greater than 40 percent. The table includes countries from all geographical regions, and underscores the importance of the US and the EU as markets for the world's goods. Those with highest values include disproportionately the countries of North and Central America that trade predominantly with the US, although the EU has its own specialized trading partners in Libya and Mauritania.

Concentration on exports as a stimulus to GDP. The export-led growth strategy is acknowledged as quite successful in attaining rapid economic growth. It also, however, increases the dependence of domestic producers upon stable demand in the importing countries. If this demand is disturbed, the reliance on exports will translate into volatility in GDP growth rates. Table 3 lists those exporters with export/GDP ratios greater than 50 percent. For the EU members on the list the exports measured include exports to other EU members.

"At risk" countries. The "at risk" countries can be summarized as in Table 4. The countries are ranked by multiplying the three risk components to obtain a risk score. Those most "at risk" are not the large exporters, as is evident by China's position near the bottom of the first row. Rather, those most at risk are small countries with a disproportionately large share of the economy tied up in textiles and apparel exports to the US and EU. The Central American countries are prominent among the high scores. So also are other countries that have specialized in textiles and apparel exports within the structure of the quota system: Cambodia, Lesotho, Mauritius, Mongolia, Madagascar, the Maldives Islands and Jordan.

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[5] I have calculated the ratio for all 228 countries exporting to the US and EU, and will use all these values in later analysis. I present only the top 34 to illustrate the nature of the countries with high concentrations in textiles and apparel.

Table 1: Countries with Textile and Apparel exports in excess of 30 percent of total exports to the US and EU-15 in 2004

Country	Share in EU Exports	Share in US Exports	Combined Share
Cambodia	86.75	95.64	92.69
Free St Micronesia	1.40	92.38	92.13
Lesotho	3.52	97.60	91.94
Laos	88.73	62.18	88.20
Bangladesh	87.56	89.09	88.02
Nepal	77.87	91.47	85.23
Mongolia	27.15	95.75	84.31
Haiti	14.19	85.18	82.10
Macao	56.37	96.29	80.87
El Salvador	4.34	83.24	76.61
Jordan	4.05	87.27	69.25
Mali	72.68	1.67	68.95
Maldives Islands	0.79	98.03	68.22
Sri Lanka	54.33	80.69	67.74
Kyrgyz Republic	68.03	61.23	65.91
Honduras	7.78	72.23	65.79
Pakistan	42.76	85.92	60.55
Guatemala	1.97	62.05	56.48
Nicaragua	1.96	60.06	54.35
Tajikistan	52.30	83.89	54.10
Mauritius	45.64	83.76	51.81
Brunei	1.98	64.82	51.56
Swaziland	3.40	89.88	49.85
Madagascar	29.97	68.61	45.70
Niue	3.75	70.04	42.16
Dominican Republic	1.98	45.35	40.63
Cape Verde Islands	31.12	81.53	40.22
Tunisia	39.95	21.70	39.51
Macedonia	35.94	55.80	37.45
Morocco	37.79	13.80	36.28
Bahrain	12.43	50.45	31.00
Burkina Faso	31.15	8.63	30.90
Vietnam	12.22	52.42	30.22
Turkey	29.46	35.48	30.18

Source: US International Trade Commission and Eurostat. The "Combined" column provides the average share of textiles and apparel in total trade with these two regions weighted for relative values of total trade.

Table 2: **Countries with more than 40 percent of exports to the US or EU-15.**

	Share of exports to EU	Share of exports to US	Exports to combined
Honduras	8.43	118.62	127.05
Liberia	45.53	49.18	94.73
Trinidad & Tobago	5.39	82.05	87.44
Lesotho	3.28	79.97	83.25
Guatemala	5.03	76.79	81.82
St Vincent & Grenadines	79.62	1.97	81.59
Mexico	2.62	76.44	79.06
Madagascar	37.59	40.32	77.91
Nicaragua	5.00	71.71	76.70
Haiti	2.10	72.48	74.58
Libya	72.09	2.02	74.11
Canada	3.34	67.45	70.79
Cambodia	16.78	52.88	69.66
Congo (ROC)	13.50	54.82	68.33
Costa Rica	28.41	39.76	68.18
Gabon	10.08	54.83	64.91
Venezuela	4.11	60.39	64.50
Mauritania	60.80	1.63	62.43
Bangladesh	36.70	24.94	61.64
Aruba	6.00	53.30	59.29
Ecuador	10.39	47.69	58.08
Algeria	35.57	20.23	55.80
Namibia	41.70	13.68	55.38
Nigeria	11.09	43.25	54.34
Dominican Republic	3.82	48.86	52.67
Colombia	12.12	38.45	50.57
El Salvador	2.80	47.73	50.54
Suriname	23.92	25.62	49.54
Guinea	38.70	8.53	47.23
Central African Republic	40.43	5.84	46.28
Sierra Leone	41.06	4.91	45.97
China	14.81	30.71	45.52
Norway	39.47	5.91	45.38
Romania	41.64	3.45	45.10
Tunisia	43.20	1.69	44.89
Cameroon	35.55	8.92	44.47
Iceland	36.30	7.29	43.59
Sri Lanka	16.61	26.87	43.49
Mozambique	42.04	0.63	42.67
Bahamas	16.04	26.31	42.35
Burundi	33.82	8.27	42.09
Israel	12.92	28.81	41.74
Botswana	39.77	1.91	41.68
St Kitts-Nevis	6.35	34.48	40.83
Chad	8.38	32.07	40.45

Source: US International Trade Commission (Exports to US), Eurostat (Exports to EU-15) and World Development Indicators (Total exports from the Balance of Payments). The data should be interpreted carefully, especially that for Honduras and Liberia. (Exports from Liberia to EU-15 divided by 10).

Table 3: **The ratio of exports to GDP: countries above 50 percent**

Trading partner	X/GDP
Singapore	157.8
Malaysia	121.3
Mali	114.3
Maldives Islands	98.0
Malta	85.2
Slovak Republic	83.8
Thailand	83.5
Swaziland	83.1
Congo (ROC)	82.5
Belgium	82.2
Bahrain	79.8
Hong Kong	78.5
Spain	78.0
Belarus	77.4
Estonia	76.2
Seychelles	73.0
Angola	71.3
Saudi Arabia	70.0
Gabon	69.0
Cambodia	67.7
Turkmenistan	65.7
Mongolia	65.1
Hungary	64.9
Tajikistan	64.9
Panama	64.0
Czech Republic	62.8
Djibouti	62.8
Kuwait	60.9
Trinidad & Tobago	60.2
Taiwan	60.0
Bulgaria	57.7
Oman	55.9
St Lucia Is	55.7
Sweden	55.7
Lithuania	55.0
Mauritius	54.4
Belize	53.5
Chad	53.2
Ukraine	53.2
Vanuatu	53.0
Philippines	52.0
Dominican Republic	51.9
Austria	51.8

Source: World Development Indicators. When 2004 data were unavailable, 2003 data were used.

Table 4: **Risk from Removal of the Quota System**

Country	Risk Index	Country	Risk Index	Country	Risk Index
Cambodia	496299	Hong Kong	15901	Ethiopia	1136
Honduras	307363	Egypt	15136	Togo	1129
Lesotho	305254	Uzbekistan	14220	Ecuador	1071
Mauritius	138855	Malawi	13935	Liberia	1010
Haiti	136902	India	13182	Paraguay	992
Mongolia	135192	Hungary	12545	Australia	991
Madagascar	128407	Bosnia	12155	Gambia	881
Sri Lanka	126577	Belarus	11645	Guinea-Bissau	827
Tunisia	119756	Mexico	11623	Azerbaijan	820
Maldives Is	118619	Peru	10812	Argentina	804
Dominican Rep	111375	Malaysia	10251	Burundi	769
El Salvador	102245	Slovenia	9932	Russia	746
Bangladesh	101472	Kyrgyz Republic	9459	Mauritania	716
Nicaragua	96851	Armenia	8797	Kazakhstan	689
Jordan	89263	Ukraine	8654	Dominica Is	687
Guatemala	81412	Cape Verde	8495	Iceland	655
Swaziland	79911	Serbia	7455	Comoros	649
Laos	73190	Chad	7245	Senegal	643
Romania	71398	Colombia	6698	Kuwait	618
Macedonia	68268	Oman	6473	New Zealand	557
Bulgaria	66916	Bolivia	5691	Lebanon	544
Morocco	64531	St Lucia Is	5370	Nigeria	528
Moldova	63816	Switzerland	5033	Japan	466
Pakistan	50572	Israel	4807	Chile	444
Mali	43982	Poland	4685	Guinea	305
Tajikistan	39505	Cen African Re	3942	Saudi Arabia	283
Vietnam	37365	Samoa	3760	Sao Tome & Pri	243
Turkey	36974	Botswana	3511	Norway	239
Malta	34593	Korea	3385	Niger	207
Lithuania	32991	Burkina Faso	3343	Panama	180
Nepal	30781	Cyprus	3317	Angola	140
Costa Rica	28858	Mozambique	3036	Barbados	139
Philippines	28317	Canada	2691	Grenada Is	114
Bahrain	27212	Singapore	2474	Yemen	95
Estonia	25236	Sierra Leone	2438	Trinidad & Tobago	88
Thailand	25176	Zambia	2164	Suriname	61
Kenya	20456	Cameroon	2151	Seychelles	51
Albania	19631	Iran	2012	St Vinc & Gren	49
Slovak Rep	19117	Tanzania	1898	Gabon	43
Jamaica	18872	Uruguay	1828	Venezuela	33
Belize	18539	Guyana	1729	Eritrea	31
China	18232	South Africa	1626	Papua New Guin	20
Latvia	17951	Benin	1442	St Kitts-Nevis	20
Namibia	17896	Cote d'Ivoire	1338	Rwanda	16
Indonesia	17532	Georgia	1331	Algeria	13
Turkmenistan	17223	Brazil	1321	Congo (ROC)	8
Croatia	16394	Sudan	1262	West Bank/Gaza	0
Syria	16179	Uganda	1259	Vanuatu	0
Czech Republic	15908	Ghana	1153		

Source: Author's calculations.
Maximum possible value: 1 million.

IV. Potential Winners and Losers.

Risk does not translate directly into loss. To separate the high-risk countries into potential winners and losers it is useful to examine the record of exports under the quota system.

Table 5a summarizes the history in the US for seven quota categories between 1993 and 2004, and Table 5b summarizes the history in the EU for three corresponding quota categories.[6] The countries listed are those facing a quota constraint in at least one of the categories during at least part of the period. The quota categories are listed in the column headings. If there is an entry in a cell under a column heading, then there was a quota in place for that country during this period. I will define a year with binding quota as one in which the exports of the country in that category were at least 90 percent of the total allowable quota for the year. If the entry in a cell is an asterisk, then the country was subject to the quota but never faced a binding constraint during the period. If the entry is a year (or a series of years) then the country faced a binding quota restraint in that year.

Binding quotas were relatively rare in the two US textiles categories (Q 225 and Q 314). In 2002, for example, there were no binding quotas in Q 225 – although China, India and South Korea faced binding group quotas subsuming that category. In Q 314 only China and Pakistan faced binding quotas, although South Korea and Taiwan had binding group quotas that subsumed these categories. None of the restraints were binding in 2004, but examination of previous years suggests that China, Pakistan, South Korea and Taiwan are all potential winners from a relaxation of quotas – when the group limits are relaxed, these countries can potentially move into exports of these.

Binding quotas are more common in the apparel categories. There were binding quotas in the US for cotton knit shirts (Q 338 and Q 339) in 2004 for Cambodia, China, India, Indonesia, South Korea, Macao, Pakistan, Philippines, Singapore, Sri Lanka and Vietnam. There were binding quotas in cotton trousers and slacks (Q 347 and Q 348) in 2004 for Cambodia, India, Indonesia, Pakistan and Sri Lanka. Binding quotas in cotton underwear (Q 352) were observed in 2004 for Bangladesh, China, Pakistan and Philippines. In the EU, binding quotas in 2004 for knit shirts (Q 4) were China, India, Indonesia and Macao. In trousers (Q 6 and 28), the binding quotas were observed in Belarus, Pakistan, Indonesia, India, China, Hong Kong and Macao. For underwear (Q 13) those facing binding quota were Belarus, Macao and China. All these should be considered candidates to expand sales after the quotas are removed.

Cambodia, Sri Lanka, Pakistan, Bangladesh and Philippines rank among the high scorers on the risk index of Table 4: these are candidates to benefit greatly from removal of the quota system. The others among the high scorers in Table 4 are more likely to lose.

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[6] These quota categories together represent nearly 30 percent of total imports under the quota system.

Table 5a: **Quota Restraints in Seven Quota Categories in US, 1993-2004.**

	225	314	338/339	347/348	352
Bahrain			1993-1996		
Bangladesh			1993-2002	1993-2002	1994-2004
Brazil	1994, 1996	*	*	*	
Burma			1999	2000	
Cambodia			2000-2004	1999-2004	2002
China	*	1993-2003	1993-2004	1993-2003	1993-2004
Colombia		*			*
Costa Rica				1993-1995, 1998, 2000	1996-1997
Dominican Republic			1993-2000	1993-2000	1995
Egypt	*	*	1995-1999		
El Salvador					*
Fiji			1994-2000		
Guatemala				1993-2000	
Haiti				*	
Honduras					*
Hong Kong	*	*	1996-2002	1995-2002	1995-1999
India	*	1995-1999	1994-2004	1993, 1995-2004	
Indonesia	1993, 1995, 1997-1998	1993-1995 1997-1999	1993-2004	1993-1994 1996-2002, 2004	
Jamaica			1996	*	1993-1997
Korea	*	*	1993-2002 2004	1998-1999 2001-2003	1993-1994, 1998-1999
Lebanon			*		
Lesotho			1993-1994	1993-1994	
Macao	*	*	1993-2002 2004	1993-2002	1993
Malaysia	*	*	1993-2002	1993-1999, 2002	
Mauritius			1993, 1995-1999	1993-1994 1997-2000	*
Mexico		*	1998-1999	1993, 1997, 2000	*
Nepal				1998-2000, 2002	
Oman			1994-1997	1997-2000,2002	
Pakistan		1997-1998 2000-2002	1994-2004	1993-1994 1996-2004	1995-1998, 2000-2004
Panama				*	
Philippines	*	*	1994-2004	1993-2003	1993-1994, 2000-2004
Poland			*		
Qatar				1993-1994 1996-2002	
Romania		*	*	*	*
Singapore	*		1993-2002 2004	1993-1994 1999-2000	*
Sri Lanka		1993-1995 1998	1993, 1995-2002, 2004	1993-2002, 2004	1993-1998, 2000-2002
Taiwan	1993, 1995	*	1993-2002	1993-2002	1993
Thailand		1998-1999	1993-2003	1993, 1996-2003	
Turkey		*	1993-2002	1998, 2000-2002	2000-2002
United Arab Emir.			1993-2003	1993-2003	2001
Vietnam			2003-2004	2003	2003

Source: Department of Customs and Border Protection

Not all countries faced quotas in all categories. A year listed indicates that the quota was binding (i.e., was at least 90 percent filled) in that year. An asterisk indicates that the quota existed but was never binding in this period. For most of the countries with restraints, they were in force for the entire period 1993-2004. For some the quotas were added more recently: for example, Vietnam's quotas were negotiated to begin in 2003.

Table 5b: **Quota Restraints in Three Quota Categories for EU-15, 1993-2004.**

	Category 4	Categories 6 and 28	Category 13
Albania	*	*	*
Armenia	*	*	
Azerbaijan	*	*	*
Bangladesh	1993-2002	*	
Belarus	1995, 1998-2000	1995, 1999, 2001-2004	1994-2004
Bosnia/Hercegovina	*	2000	
Brazil	*	*	
Bulgaria	1994-1995	1994	*
Cambodia	*	*	
China	1993-2004	1993-2004	1995-2004
Croatia		1994-1995, 2000	
Czech Republic	1993-1996	1994, 1996	*
Egypt	*		
Estonia	*		*
Georgia	*	*	
Hong Kong	1993-1994, 1999-2000, 2003	1993-2003	1993, 2000, 2002-2003
Hungary	1993-1996	*	*
India	1993-2004	1993-2004	
Indonesia	1993, 2004	1994, 1999-2004	
Kazakhstan	*	*	
Korea (North)	*	1998-1999, 2001	*
Korea (South)	1999-2000	1993, 1997, 2000, 2002-2004	2003
Kosovo	*	*	
Kyrgyz Republic	*	*	
Laos	1993-1994	*	
Latvia	*	*	*
Lithuania	*	*	*
Macao	1993, 1996-2004	1993-2004	1993, 1996-1998, 2000-2001, 2003-2004
Macedonia	*	*	
Malaysia	1994, 1998-2000	2000, 2002	
Malta	*	*	
Moldova	*	*	
Morocco		1995	
Nepal	*	*	
Pakistan	1993, 1995-2000, 2003	1996-2004	
Philippines	*	2002-2003	*
Poland	1994-1996	1994, 1996	*
Romania	1994-1997	1994-1996	*
Russia	1995	1998	1994-1995
Serbia/Montenegro		1996-1998, 2000-2002	
Singapore	*	*	
Slovak Republic	1994-1997	1996	*
Sri Lanka	*	1994-1996, 1999-2000	
Taiwan	1997-1998, 2000	1997, 1999, 2000, 2002	1997
Tajikistan	*	*	
Thailand	1993, 2003	1993-1994, 2000-2003	
Tunisia		1995	
Turkey	1993-1995	1994-1995	1993-1995
Turkmenistan	*	*	
Ukraine	1995, 1999	1994, 1996-1999	1993, 1995-2000
United Arab Emirates	*	*	
Uzbekistan	*	*	
Vietnam	1994, 1996-2003	1995-2003	*

Source: Eurostat/SIGL. Not all countries faced quotas in all categories. A year listed indicates that the quota was binding (i.e., was at least 90 percent filled) in that year. An asterisk indicates that the quota existed at some time during this period but was never binding.

V. So, what happened?

Data are currently available for imports into both the US and the EU-15 for 2005. Table 6 reports the outcomes in terms of value of exports to the two markets for those countries with gains or losses in absolute value greater than USD 30 million.[7] There were 11 countries with gains of that amount or more, while there were 51 countries with losses in excess of that amount. Despite the preponderance of countries with reductions, total exports of textiles and apparel to the two markets rose by 5.1 percent in value terms. China alone represented 182 percent of the total increase in sales in the two markets and India another 22 percent of the total increase. The Asian countries identified with binding quotas in previous years were among these gainers: China, India, Cambodia, Vietnam, Indonesia, Pakistan and Bangladesh. Peru, Jordan, Nicaragua, and Haiti were also among the gainers. In all cases except Indonesia, Pakistan and Bangladesh, the percent gain in 2005 exceeded the average gain of the market as a whole.

Among the countries with large contractions in exports in these products are two that are probably spurious: Hong Kong and Macao registered large reductions in the value of exports to these two markets, but they most likely suffered this fall because they earlier served as export points for Chinese goods evading the quota. Once it was no longer necessary to evade the quota, those goods could be shipped directly to the US. The Chinese gain should thus probably be offset by the totals of these three, leaving a still sizeable 13.5 USD billion gain in 2005 and a 47 percent growth rate. Other countries with large contractions in this sector include Korea, Taiwan, Mexico, Russia, Czech Republic, Poland and Canada.

The 40 "highest risk" countries are summarized in Table 7. Among those countries, eight experienced strong gains: the Asian countries Bangladesh, Pakistan, Cambodia, Vietnam and Sri Lanka, along with Jordan, Nicaragua and Haiti. The other 32 countries experienced a net decline in exports of textiles and apparel. Those with the largest contractions in percentage terms were the Maldives, Mongolia, Mali, Tajikistan, Nepal, Lithuania, Malta and Mauritius in the top panel, and every one in the bottom panel. The largest absolute losses in export value were experienced by Romania, Morocco, Tunisia, Dominican Republic and Turkey.

There has been a marked concentration of imports into the two markets in 2005 among the top exporters, but that concentration is largely found in China's behavior. Table 8 reports the share of total textile/apparel imports received into the two markets from the top 1, top 10, top 20, top 30, and bottom 100 countries (of 228). China increased its share by nearly 8 percentage points, but below that the gains diminish. The top 10 increased its share by 6 percentage points, the top 20 by 4 percentage points and the top 30 by 2.5 percentage points. The bottom 100 represented a smaller share of the total, but in either year those countries provided a miniscule part of the total.

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[7] Euros were converted into USD at the average rate of .80 Euros = 1 USD.

Table 6: **Gains in USD millions in All Quota Categories: EU-15 and US Combined**

Country		Exports in 2004	Exports in 2005	Total Change	Percent Change
China		29002.2	43579.8	14577.6	50.3
India		7878.2	9631.4	1753.2	22.3
Cambodia		2074.3	2297.8	223.6	10.8
Vietnam		3483.5	3696.7	213.2	6.1
Indonesia		4596.3	4799.6	203.3	4.4
Peru		794.2	940.2	146.0	18.4
Nicaragua		596.8	714.9	118.1	19.8
Jordan		965.8	1079.4	113.6	11.8
Pakistan		4206.6	4304.7	98.1	2.3
Haiti		318.0	412.4	94.4	29.7
Bangladesh		6682.5	6750.4	67.9	1.0
Malta		165.2	134.5	-30.7	-18.6
Costa Rica		525.2	492.0	-33.2	-6.3
Latvia		230.6	196.6	-34.0	-14.8
Qatar		65.7	30.1	-35.6	-54.1
Bulgaria		1621.8	1581.7	-40.0	-2.5
Nepal		224.4	182.2	-42.2	-18.8
Brunei		216.8	168.7	-48.1	-22.2
Malaysia		1182.7	1129.3	-53.5	-4.5
Bahrain		257.4	200.4	-57.1	-22.2
Estonia		291.7	231.6	-60.1	-20.6
Uzbekistan		197.3	135.4	-61.9	-31.4
Fiji		85.0	20.0	-65.0	-76.5
Lesotho		456.9	390.8	-66.2	-14.5
Israel		956.4	889.8	-66.7	-7.0
Slovenia		408.4	335.1	-73.3	-17.9
Maldives Is		81.3	4.8	-76.6	-94.2
El Salvador		1717.2	1639.4	-77.8	-4.5
Ukraine		629.2	549.6	-79.6	-12.6
Oman		137.7	56.5	-81.2	-58.9
Syria		271.6	190.4	-81.2	-29.9
Croatia		615.3	532.8	-82.5	-13.4
Jamaica		153.2	62.8	-90.5	-59.0
Mongolia		241.9	148.9	-93.0	-38.4
Singapore		296.3	201.9	-94.3	-31.8
South Africa		327.3	227.0	-100.3	-30.6
Serbia		187.0	73.2	-113.8	-60.8
Slovak Rep		721.2	605.0	-116.2	-16.1
Guatemala		1964.8	1833.0	-131.8	-6.7
Lithuania		705.4	570.9	-134.5	-19.1
Hungary		1283.1	1140.8	-142.3	-11.1
UAE		574.5	426.1	-148.4	-25.8
Mauritius		865.7	713.7	-152.0	-17.6
Switzerland		1878.2	1725.2	-153.0	-8.1
Philippines		2364.4	2190.8	-173.5	-7.3
Turkey		12467.4	12265.5	-201.9	-1.6

Japan		1169.5	965.0	-204.5	-17.5
Dominican Rep		2064.9	1859.7	-205.1	-9.9
Tunisia		3381.8	3176.0	-205.7	-6.1
Thailand		3457.5	3250.0	-207.4	-6.0
Australia		819.4	585.9	-233.6	-28.5
Morocco		3132.5	2864.0	-268.6	-8.6
Romania		4867.6	4572.9	-294.6	-6.1
Canada		3130.1	2834.5	-295.7	-9.4
Poland		1968.7	1660.3	-308.4	-15.7
Russia		594.0	273.1	-320.9	-54.0
Czech Republic		1693.3	1317.4	-375.9	-22.2
Macao		1959.7	1576.8	-382.9	-19.5
Taiwan		2790.3	2223.6	-566.8	-20.3
Mexico		7833.1	7247.3	-585.9	-7.5
Hong Kong		6335.3	5706.8	-628.5	-9.9
Korea		4086.6	3026.7	-1059.9	-25.9

These are the countries with changes in USD million greater than 30 in absolute value as measured by net increase in exports from 2004 to 2005. The complete list of countries is provided in the appendix.

Table 7: **Gains and Losses in USD millions for the High Risk Countries**

COUNTRY	Exports in 2005 (USD millions)	Exports in 2004 (USD millions)	Net increase in exports	Percentage change
Cambodia	2297.8	2074.3	223.6	10.8
Honduras	2649.5	2658.2	-8.7	-0.3
Lesotho	390.8	456.9	-66.2	-14.5
Mauritius	713.7	865.7	-152.0	-17.6
Haiti	412.4	318.0	94.4	29.7
Mongolia	148.9	241.9	-93.0	-38.4
Madagascar	500.7	526.9	-26.2	-5.0
Sri Lanka	2632.6	2605.5	27.1	1.0
Tunisia	3176.0	3381.8	-205.7	-6.1
Maldives Is	4.8	81.3	-76.6	-94.2
Dominican Republic	1859.7	2064.9	-205.1	-9.9
El Salvador	1639.4	1717.2	-77.8	-4.5
Bangladesh	6750.4	6682.5	67.9	1.0
Nicaragua	714.9	596.8	118.1	19.8
Jordan	1079.4	965.8	113.6	11.8
Guatemala	1833.0	1964.8	-131.8	-6.7
Swaziland	163.2	184.5	-21.3	-11.6
Laos	148.9	148.8	0.1	0.0
Romania	4572.9	4867.6	-294.6	-6.1
Macedonia	383.0	373.3	9.7	2.6
Bulgaria	1581.7	1621.8	-40.0	-2.5
Morocco	2864.0	3132.5	-268.6	-8.6
Moldova	156.	153.8	2.4	1.5
Pakistan	4304.7	4206.6	98.1	2.3
Mali	29.3	48.7	-19.3	-39.7
Tajikistan	43.8	69.4	-25.6	-36.9
Vietnam	3696.7	3483.5	213.2	6.1
Turkey	12265.5	12467.4	-201.9	-1.6
Malta	134.5	165.2	-30.7	-18.6
Lithuania	570.9	705.4	-134.5	-19.1
Nepal	182.2	224.4	-42.2	-18.8
Costa Rica	492.0	525.2	-33.2	-6.3
Philippines	2190.8	2364.4	-173.5	-7.3
No risk index, but high textiles share				
Niue	0.1	0.1	0.0	-33.6
Afghanistan	21.1	15.4	-3.3	-21.2
F St. Micronesia	1.0	10.6	-9.6	-90.8
Brunei	168.7	216.8	-48.1	-22.2
Fiji	20.0	85.0	-65.0	-76.5
United Arab Emirates	426.1	574.5	-148.4	-25.8
Macao	1576.8	1959.7	-382.9	-19.5

These are the 33 countries with highest Risk Indices in Table 4, and the seven highest textile shares among those without risk index. The bottom seven are sorted by declining net increase in exports to the US in 2005.

Table 8: **Indicators of concentration in the US textiles/apparel markets**

	Percent of US and EU imports from these countries	
	2004	**2005**
Top 1 (China)	18.6	26.6
Top 10	56.4	62.5
Top 20	75.0	79.1
Top 30	86.1	88.6
Bottom 100	0.3	0.2

Source: author's calculation

Table 9: **Decomposition of Exports to the US by Liberalization Group**

	Total Value (USD billion)			Value from China (USD billion)		
	2004	2005	Percent growth	2004	2005	Percent growth
Group 1	1.65	1.68	1.52	0.80	0.89	11.49
Group 2	5.83	6.57	12.64	2.25	2.64	17.50
Group 3	13.93	14.78	6.08	6.43	7.44	15.72
Group 4	62.93	67.56	7.36	6.08	12.78	110.14
Total	84.34	90.59	7.40	15.56	23.75	52.64

Considering only the most recently liberalized exports. The aggregate increases in exports of textiles and apparel to the US and EU in 2005 provides a biased picture of the impact of removal of quotas because of the phased nature of quota removal under the Agreement on Textiles and Clothing. When the agreement was signed in 1995, the schedule for quota removal was broken into four parts. An initial group of products (Group 1) was scheduled for immediate removal. A second group (Group 2) was scheduled for removal on 1 January 1998. A third group (Group 3) had its quotas removed on 1 January 2002. Only the final group (Group 4) retained its quotas until 1 January 2005.

While the quota-removal schedule was staggered, it was also back-loaded: those import classifications with the greatest volume of imports into the US were placed in Group 4. The first three columns of Table 9 indicate the US-dollar value of total imports into the US by group: over ¾ of imports in value terms were subject to quotas until 1 January 2005. It is also evident in the table that the value of imports into the US rose only moderately (7.4 percent) from 2004 to 2005. This moderation was the joint effect of large increases in the quantity of imported textiles and apparel and large decreases in the price (or more accurately, the unit value) of imports.

The value of US imports from China is decomposed in the last three columns of Table 9.[8] It is evident there that China has strongly penetrated the markets for goods released from quota earlier: China supplies over half of our imports (by value) in Groups 1 and 3, and 40 percent of our imports of Group 2. The percent growth in value terms in each group is more rapid than the overall growth in import value. It is not possible at this level of aggregation to illustrate a key characteristic of this growth in Chinese share: even more rapid increases in quantity exported coupled with a substantial drop in the unit value of those exports. This price-based competition creates losers among the foreign competitors to sell in the US market. In the following section I illustrate this within specific quota categories.

VI. Is there an evident comparative-cost advantage?

The quota system served as a barrier to trade with the lowest-cost exporters of textiles and clothing – these were unable to service as much of the US market as they may have desired due to the quota restrictions. Removal of the quotas should then lead to a reduction in the price of these goods in the US market, either through the elimination of quota license rents or through the increased price competition possible at the margin among these constrained suppliers.

This pro-competitive effect should be evident in the unit value of textiles and apparel sold in 2005 relative to that observed in 2004. It should be most evident among those countries with binding constraints in 2004, although the price competition should drive

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[8] This represents exports from China alone. It does not include exports from Macao and Hong Kong; these were suspected as transshipment points for Chinese goods during the quota regime, and exports from those locations were reduced in 2005.

down unit values even on those products from non-constrained suppliers. Table 10 reports calculations of price reductions in unit value by quota category.[9]

The quota categories considered are the 95 categories with quotas removed on 1 January 2005.[10] There were large numbers of exporting countries represented in each category, as indicated in the second column. Of those exporters, a minority had defined quotas in 2004 – the number is given in parentheses in the third column. The first number in the third column indicates the number of exporters subject to binding constraint in 2004.[11] In 42 of the categories there were no exporters under binding quota in 2004, while in the other categories there were typically only a handful.[12]

I expect that the percent reduction in unit values to be negative on average for both categories of countries, but I also expect that the percent reduction for countries facing binding quotas (column 4) will be larger in absolute value than the percent reduction for countries not bound by quotas (column 5). This effect should be more pronounced for categories where more than one country faced binding quota.

Consider categories 338 and 339 (knit cotton shirts, for men and women respectively). In 2004 there were 27 countries with quotas defined on these categories, and 11 of these countries had binding quotas. In 2005, the 11 with binding quotas experienced a reduction in unit value per dozen of between 19 and 22 percent, while the remaining countries exhibited a reduction in unit value per dozen of about 4 percent. The countries with formerly binding quotas made up between 30 and 40 percent of the total exports to the US in 2005.

Similarly, categories 347 and 348 (cotton trousers, for men and women respectively) had 27 countries with defined quotas in 2004, and 7 of those had quotas binding in that year. The reduction in unit values per dozen for those countries with binding quotas were between 19 and 26 percent, while unit values per dozen for the other countries either rose by 3 percent or fell by 1.5 percent. Those countries with binding quotas served between 24 and 30 percent of the market in 2005.

This pattern is evident throughout the table: unit values were falling, and falling by more in categories where a previously binding quota had been removed.

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[9] Most quota categories are defined in terms of a single unit, whether square meters, kilos, dozens, pieces, pairs or units. Some US quota categories (usually ending in "9") include goods measured in different units. For those categories, I consider only that quantity measurement associated with the largest value of total imports in 2004.

[10] Quota removal was defined by 10-digit HS code in the US, not by quota category, and so eight categories were represented in more than 1 group. In that case I assigned the category to the liberalization group in which the majority of its value was accounted.

[11] A country was defined as having a binding quota constraint in a category if its actual exports in that category were more than 90 percent of the quota limits in that year. The data on quota limits were graciously made available by the OTEXA division of the US Department of Commerce and by SIGL in the EU.

[12] This definition of binding quotas includes quotas defined jointly on between two and four categories, but does not include quotas defined on larger groups of quota categories.

Table 10: **Evolution of Unit Values with Removal of Quotas in the US – Group 4.**

quota category	# of exporters	# binding (# with quota)	Percent Reduction in Unit Values in countries with binding quotas	quotas not binding	Share of US imports from non-binding sources
200	70	1 (14)	-19.31	-13.65	98.62
201	63	1 (4)	95.12	10.46	99.99
218	83	1 (12)	-20.36	-90.01	86.40
219	53	0 (11)	.	7.39	.
220	118	0 (2)	.	-7.80	.
224	71	1 (3)	-39.38	-1.56	72.78
225	41	0 (6)	.	21.25	.
226	53	0 (5)	.	8.19	.
227	36	0 (1)	.	-20.39	.
237	107	1 (14)	18.61	3.41	88.71
300	53	0 (9)	.	-8.33	.
301	56	0 (10)	.	-13.65	.
313	75	0 (13)	.	-0.74	.
314	72	0 (13)	.	-11.70	.
315	55	0 (13)	.	-0.06	.
317	74	0 (12)	.	-40.62	.
326	54	1 (12)	-5.69	-5.92	90.02
332	85	0 (1)	.	-3.99	.
333	105	0 (10)	.	-11.57	.
334	123	4 (21)	-23.93	-4.91	47.82
335	139	6 (23)	-41.32	1.61	45.70
336	139	1 (18)	-54.07	0.89	76.72
338	148	11 (27)	-21.96	-3.59	60.56
339	165	11 (27)	-19.23	-3.82	69.23
340	151	5 (31)	-1.22	-6.62	60.86
341	150	1 (23)	-4.93	-4.55	89.09
342	145	4 (22)	-38.53	1.05	65.81
345	113	3 (14)	-39.60	-5.02	36.26
347	142	7 (27)	-25.44	-1.46	76.01
348	164	7 (27)	-19.80	3.36	70.24
349	84	1 (1)	-10.87	13.09	62.07
350	117	1 (1)	0.32	9.14	65.17
351	118	3 (19)	-24.08	-10.04	86.81
352	127	2 (13)	-47.35	-0.49	93.41
359	159	0 (10)	.	2.69	.
360	79	1 (5)	-20.77	2.34	72.34
361	83	2 (8)	-19.58	-0.44	72.49
362	105	0 (1)	.	7.00	.
363	94	3 (12)	-20.74	10.25	49.90
400	61	0 (1)	.	8.34	.
410	79	0 (10)	.	4.59	.
414	64	0 (0)	.	10.13	.
433	98	2 (17)	-23.85	-6.28	97.49
434	89	1 (12)	21.89	-5.74	95.80
435	104	6 (22)	120.07	108.64	66.32
436	82	0 (4)	.	-9.23	.
438	97	0 (7)	.	-4.15	.

440	78	0 (5)	.	-10.53	.
442	91	0 (11)	.	13.67	.
443	92	3 (17)	-7.93	-8.99	94.51
444	70	0 (9)	.	-6.98	.
445	90	1 (10)	23.56	16.05	99.77
446	98	1 (11)	32.21	5.42	99.42
447	99	0 (9)	.	-6.16	.
448	92	1 (16)	0.83	-4.11	90.82
459	111	0 (1)	.	-0.78	.
611	51	0 (9)	.	23.15	.
613	41	0 (6)	.	3.05	.
614	38	0 (7)	.	-0.30	.
615	29	0 (3)	.	4.53	.
617	47	0 (7)	.	-21.51	.
618	47	0 (1)	.	11.58	.
619	62	0 (5)	.	-11.74	.
620	73	0 (6)	.	-33.03	.
624	39	0 (5)	.	-8.06	.
625	39	0 (6)	.	-21.59	.
626	27	1 (6)	150.05	-4.47	99.94
627	30	0 (2)	.	-39.06	.
628	40	0 (2)	.	2.73	.
629	75	0 (2)	.	-6.41	.
633	93	1 (8)	-2.51	11.61	63.73
634	117	2 (17)	-15.85	-11.67	96.02
635	132	2 (16)	-17.18	-7.21	95.41
636	134	1 (16)	-56.08	4.54	52.76
638	127	6 (18)	-5.67	-12.53	81.69
639	142	6 (18)	-5.75	3.99	45.80
640	117	4 (29)	-18.96	3.72	66.84
641	122	1 (21)	-31.22	-2.60	69.63
642	128	4 (21)	-27.94	5.63	58.95
643	79	2 (5)	-17.25	4.67	43.48
644	79	2 (6)	-13.07	-10.49	47.02
645	93	1 (15)	-20.26	8.38	55.42
646	106	1 (15)	-40.43	11.01	53.04
647	128	7 (22)	-11.55	0.15	62.74
648	140	6 (22)	0.22	1.00	77.69
649	101	1 (1)	-0.24	8.43	69.78
650	88	1 (1)	2.51	10.07	52.47
651	89	3 (18)	-5.66	-5.15	95.80
652	111	1 (10)	51.91	-0.71	99.84
659	154	0 (11)	.	-1.09	.
666	111	1 (3)	-5.95	9.37	96.51
845	66	1 (5)	-4.30	29.15	6.04
846	40	0 (3)	.	4.52	.
852	60	0 (0)	.	25.60	.
863	45	0 (1)	.	48.53	.

"Non-binding sources" refers to all countries not facing a binding quota in 2004, whether or not they were subject to quotas in 2004.

Sources: International Trade Commission; OTEXA, US Department of Commerce; and author's calculations

Figure 1: Impact of Quota Removal in US on Landed Value and Unit Value in categories 347 and 348
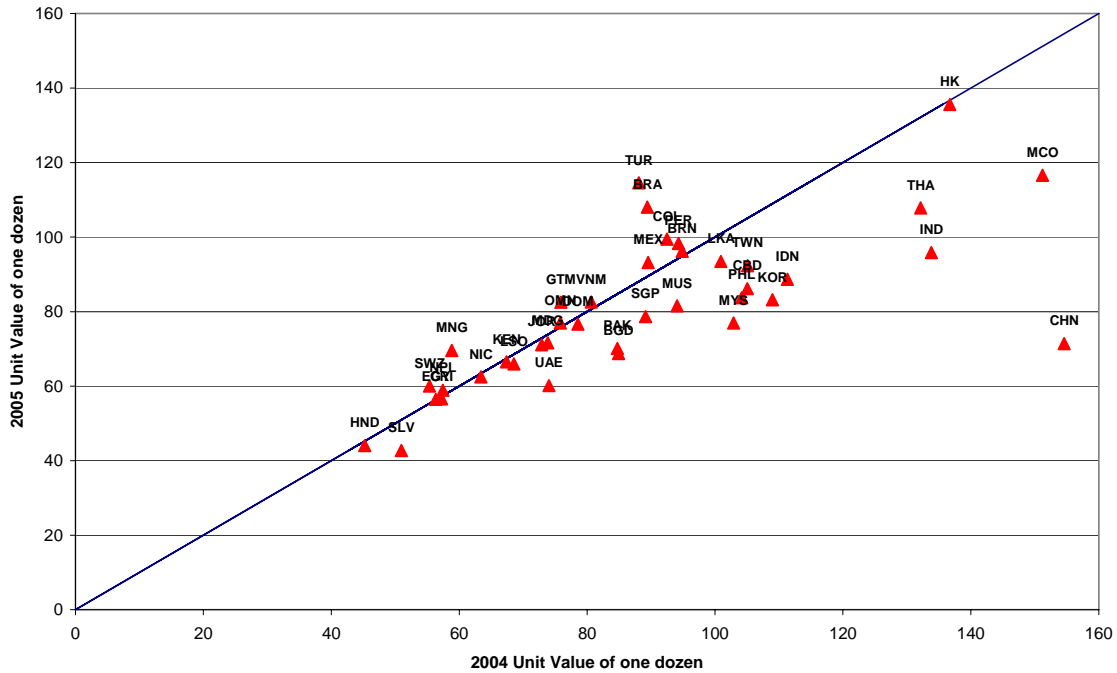

Change in unit value of exports (USD)
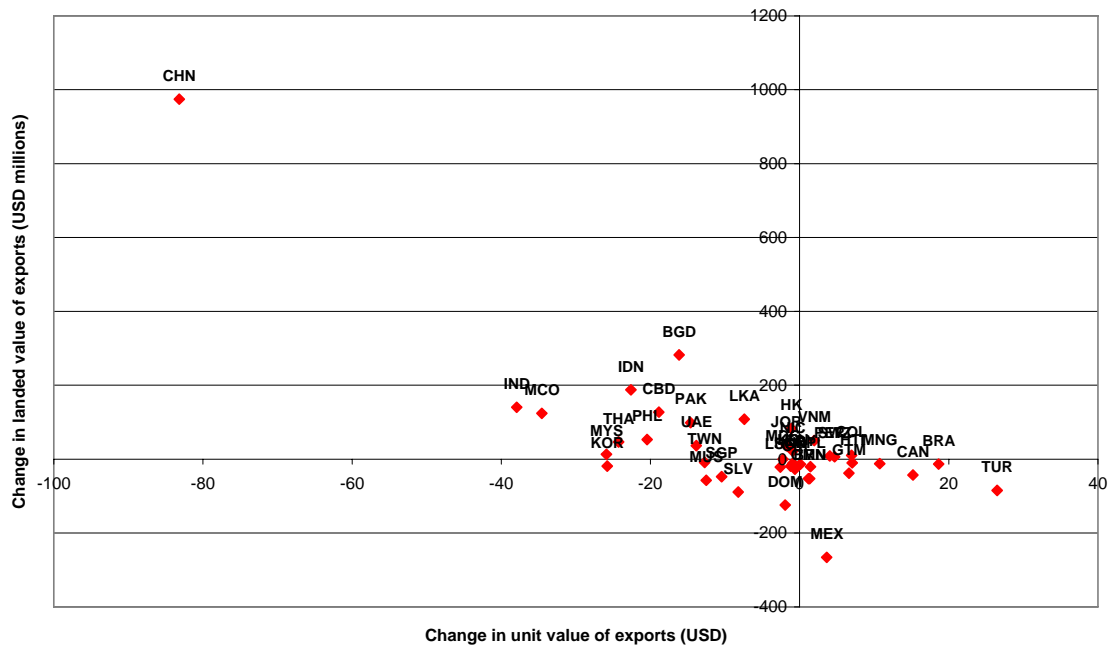
It is reasonable to expect that the removal of quotas made it possible for purchasers to source their imports from the comparatively less expensive locations. Figure 1 illustrates the change in unit values per dozen of cotton trousers (Q 347 and 348) plotted against the gain in exports in 2005 for each of the top 30 countries relative to exports to the US in this category in 2004. There is a clear correlation between increased export values and reduced unit values in 2005. China's observation is found in the top left corner of the figure, while India and Macao have the next-largest changes in unit values. There were seven countries with binding quotas in 2004 (Cambodia, China, India, Indonesia, Pakistan, Sri Lanka and Vietnam), and of these the first six had reductions in unit value of at least USD 7.40 and increases in landed value of at least USD 100 million. At the other extreme, Mexico experienced a reduction in landed value of USD 265 million while unit value increased by USD 3.64; the Dominican Republic lost USD 124 million in landed value while decreasing unit value by USD 1.94.

Figure 2 illustrates the general tendency toward reduction of unit values in 2005 among the top 40 exporters. Those points below the 45° line represent countries with lower unit values in 2005. The top five unit values in 2004 were (in descending order) China, Macao, Hong Kong, India and Thailand: as is evident, in 2005 all but Hong Kong fell sharply. Despite the sharp fall, however, these countries are still not the lowest-cost sources of trousers – that distinction belongs to Honduras and El Salvador, with unit values in the USD 40 range. China remains a mid-price producer in 2005 when the

vertical positions of the points are compared. The two countries moving most strongly in the opposite direction – i.e., rising unit values – are Turkey and Brazil.[13]

Figure 2: Unit Values of Exporters to US in Categories 347 and 348


While the performance of China in the EU market is quite similar, the change in unit values is not as extreme there. Figure 3 illustrates the changes between 2004 and 2005 by exporting country in both the customs value and the unit value of exports in quota categories 6 and 28 (trousers) for 35 developing-country exporters.[14] China, India and Vietnam are the three countries with gains in value exported to the EU, but China's performance greatly outstrips the others. A small number of exporters experienced falling unit value in 2005; of these, China, Indonesia and Hong Kong were constrained by quota in 2004.[15]

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[13] Italy and Canada are excluded from this diagram since their unit values are markedly above those reported here. Both experienced pronounced increases in unit values from 2004 to 2005.

[14]   These were not the largest exporters.   The US, Japan, Australia, Canada, Switzerland and the Czech Republic could all have been included on the basis of 2004 exports to the EU, but were dropped because of the large unit value of their products. Of these, only the US experienced increased exports to the EU in 2005 relative to 2004.

[15]   Taiwan and South Korea were also quota-constrained in 2004. In Figure 3, they are found in the group with small positive change in unit value and small negative change in export value.

Figure 3: Impact of Quota Removal in EU on Customs Value and Unit Value in Categories 6 and 28

Change in unit value (Euros), 2005 over 2004
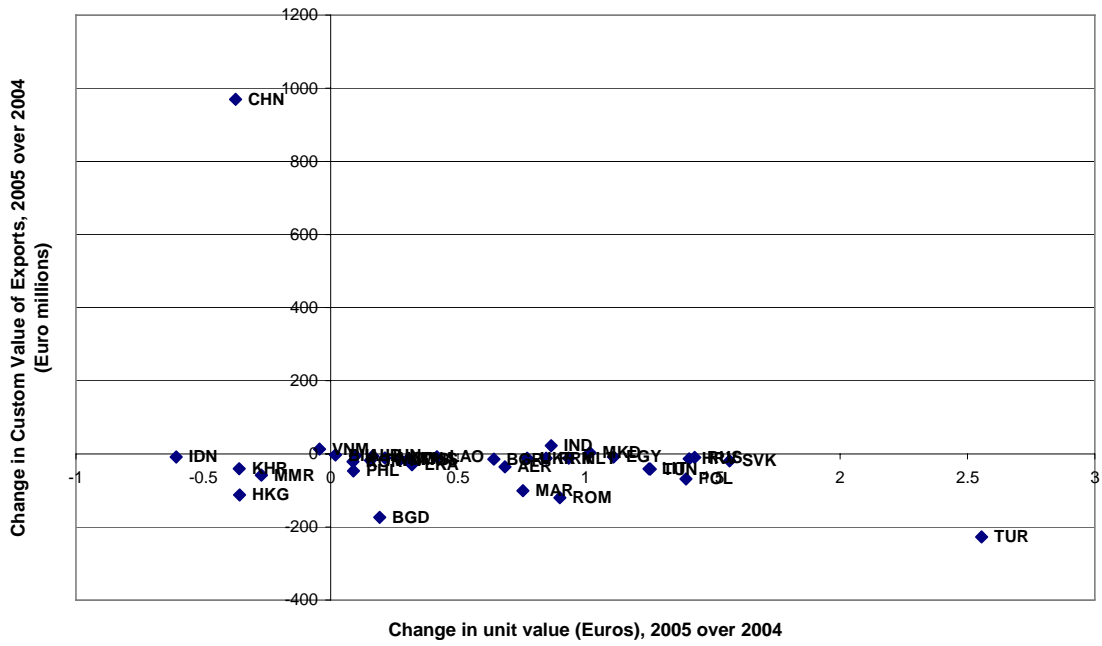
The change in unit values is highlighted in Figure 4; countries with falling unit value will be found below the diagonal. In the EU, the changes in unit value were not as extreme from 2004 to 2005.

Figure 4: Unit Values of Exporters to EU in Categories 6 and 28 (Trousers)
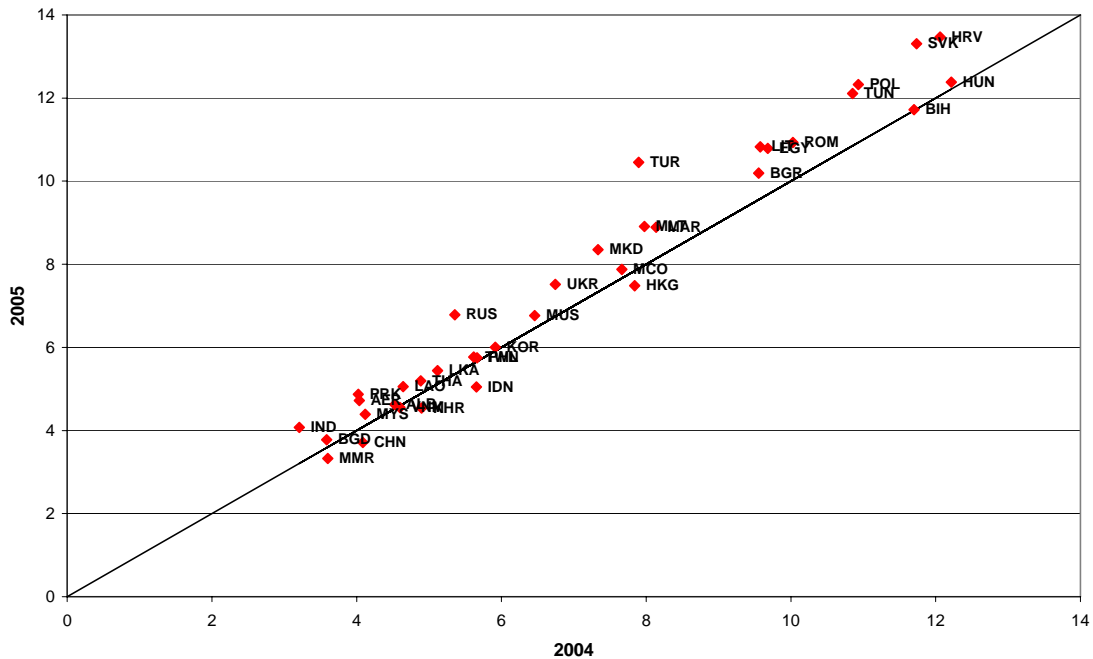
China, Myanmar, Indonesia and Hong Kong had the largest drops in unit value, while Turkey, Russia, Poland, Tunisia, Slovakia and Croatia had the largest increase. There is a clear bunching of Asian exporters among those with lowest unit values, while the countries of Eastern Europe and North Africa have the higher unit values.

A similar pattern is evident when US imports in knit cotton shirts (categories 338 and 339) are examined. Figure 5 illustrates the change in landed value of exports to the US and in unit value by country. China is once again in the upper left corner of the figure with substantial reductions in unit value and increases in landed value from 2004 to 2005. Those countries facing binding quotas in 2004 (Cambodia, China, India, Indonesia, Korea, Malaysia, Pakistan, Philippines, Sri Lanka, Vietnam) were also characterized by falling unit values and increased landed values. Those countries with the largest drop in unit value after China are South Korea (-25), Indonesia (-23.1), India (-19.6), Philippines (-18.04) and Malaysia (-17.5). At the other extreme are Mexico and Turkey with large reductions in landed value and Colombia with a USD 8 increase in unit values.

Figure 6 illustrates the evolution of unit values from 2004 to 2005 in these quota categories. Once again, each point represents a country, and points below the diagonal represent countries with falling unit value in 2005. China, Hong Kong and Macao, respectively, are the three right-most points in the figure: China's reduction in unit value is most pronounced of the three although all decline somewhat. Even with the declines, China remains a mid-market supplier. The three lowest-cost suppliers in the figure are Haiti (17.80), El Salvador (20.65) and Honduras (21.31) followed closely by Mexico (24.22). These did not experience reductions in unit values, most likely because of their existing quota-free access to the US market through CAFTA.

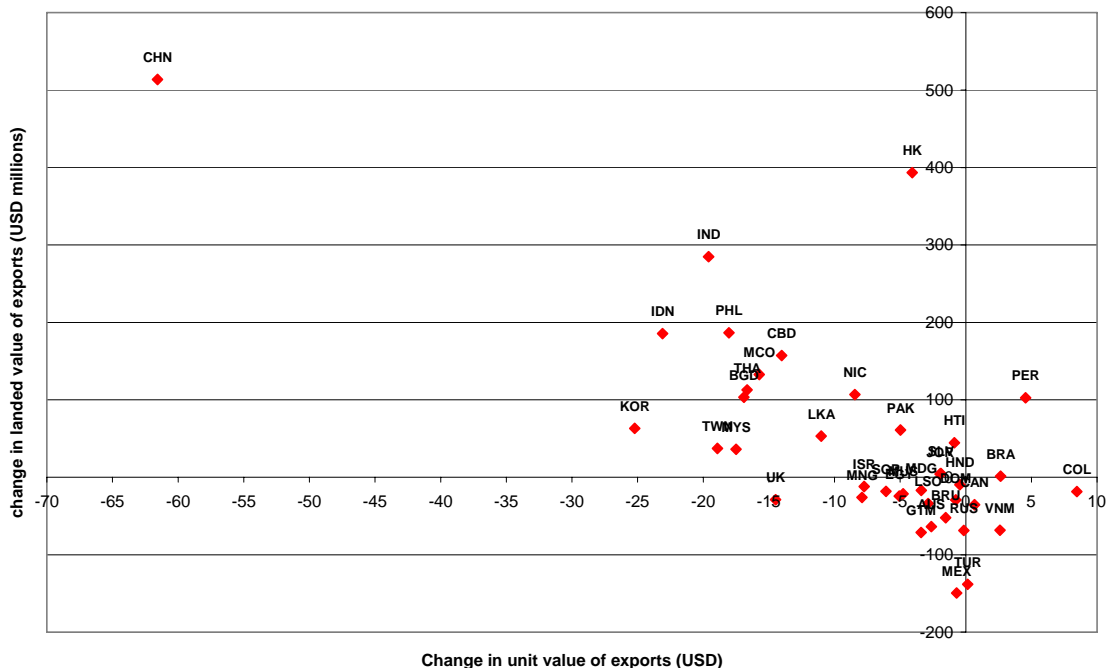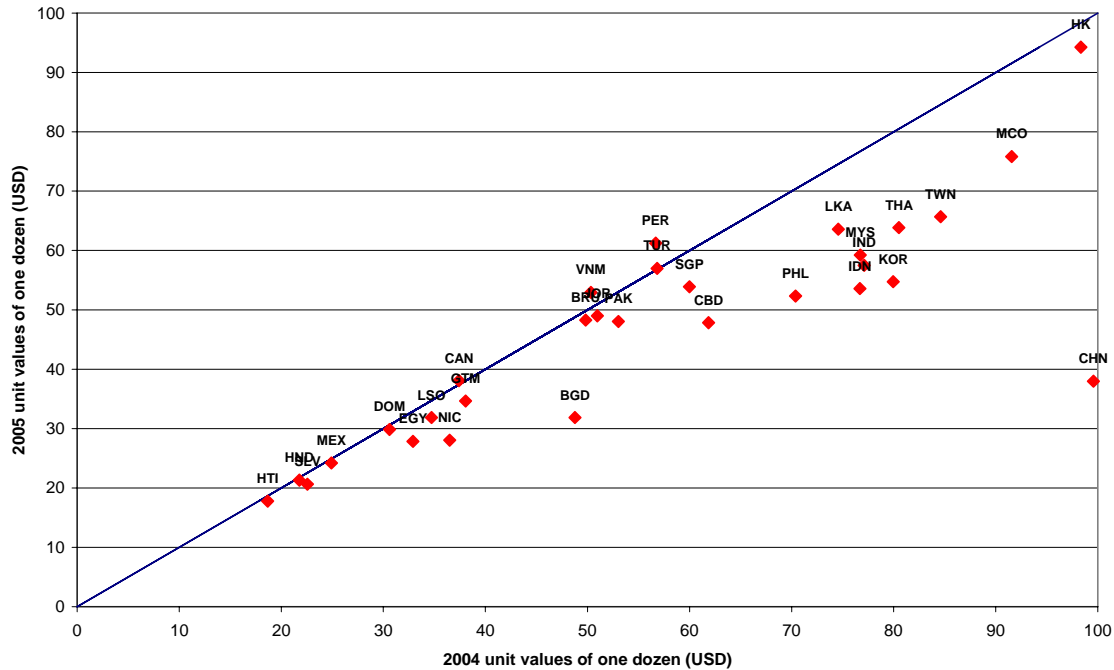**Figure 5: Impact of Quota Removal in Categories 338 and 339**

Figure 6: Evolution of Unit Values for Exporters to US in Categories 338 and 339

Those countries with the largest reduction in unit value are the countries with binding quotas in 2004, although Thailand, Bangladesh and Taiwan also experienced reductions of at least USD 15 from 2004 to 2005.

In the EU, China outstripped the other exporters in increased customs value for knitted shirts, and was also the one with largest reduction in unit value. Others with increased customs value included India and Egypt (with reduced unit value), Turkey and Bangladesh (with slightly increased unit value.

Figure 8 illustrates the evolution of unit value in these 30 countries. China enjoys the largest reduction in unit value from 2004 to 2005 in the EU, just as in the US market. In 2004 China was not among the least expensive exporters – examining the horizontal placement of China in Figure 6 indicates that well over half the countries were priced below. By 2005 those countries with binding quotas in 2004 (China, Indonesia and India) had reduced unit values. Others experiencing significant reductions in unit value were Ukraine, Mauritius, and Morocco. Those with substantial increases in unit value were the Czech Republic, Poland and Macedonia.

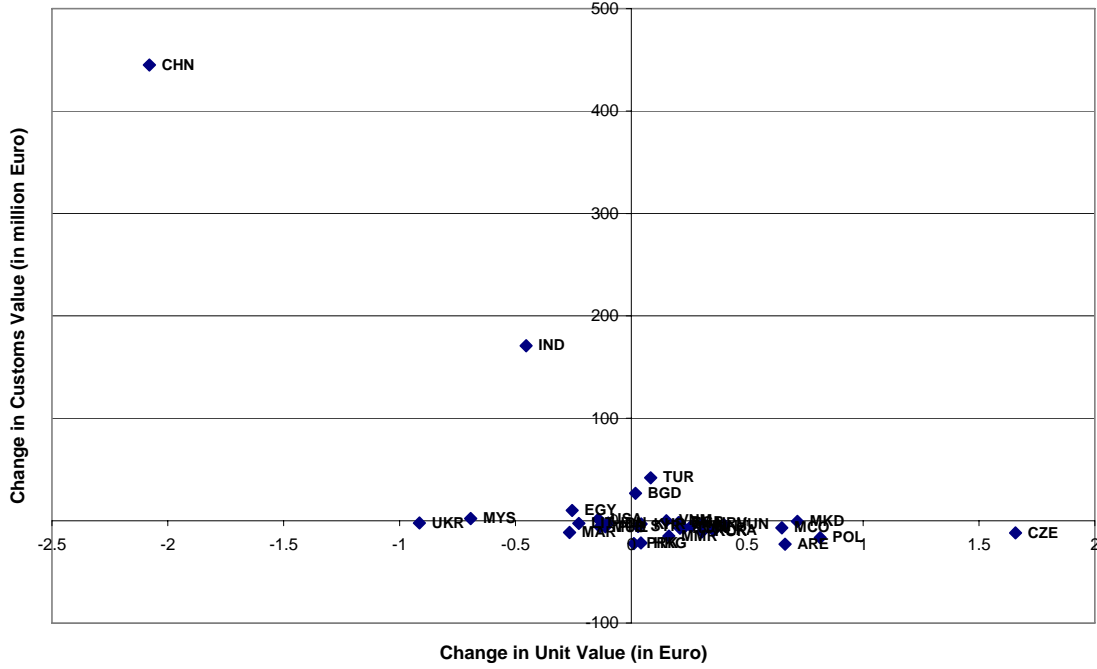**Figure 7: Customs Value and Unit Value of EU Imports in Category 4**
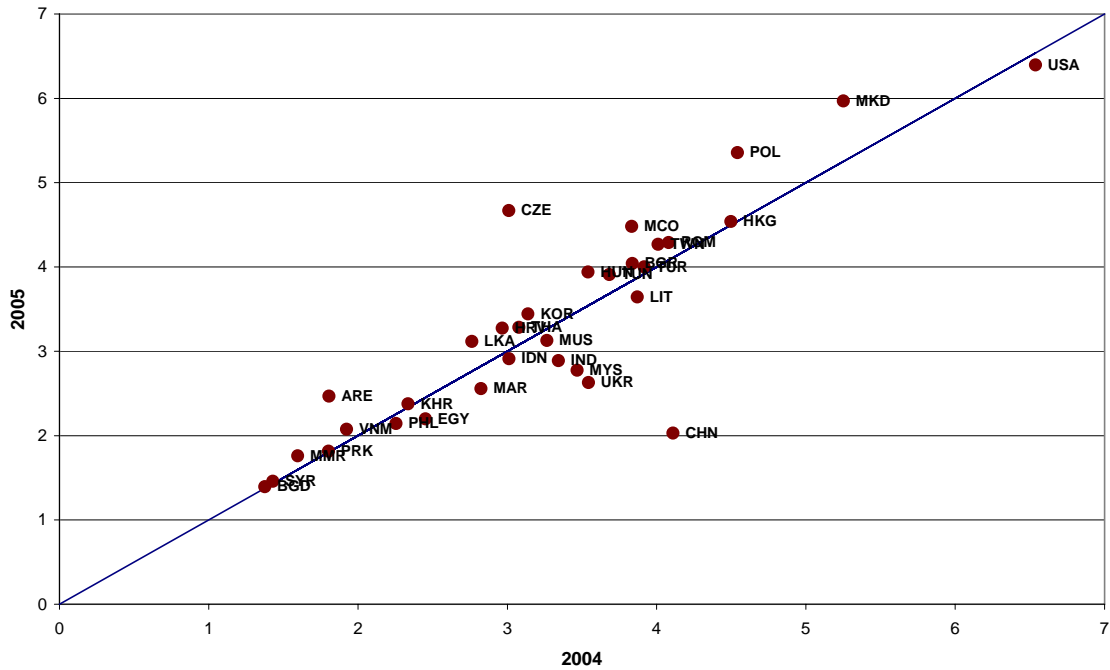

**Figure 8: Unit values of Exporters to the EU in Category 4**

A final example is provided by considering imports of underwear. In the US, Q 352 represented cotton underwear in dozens. Figure 9 illustrates the impact of quota removal in this category. China is once again at the left-most edge of the figure, but there the similarity ends. China's increase in landed value is this time offset by large declines in landed value from Hong Kong and Macao (the largest reductions in landed value). Taken as a whole, the three countries experienced a drop in USD 42 million in landed value in 2005. The largest gains in landed value were experienced by Sri Lanka (73.8 million) and Honduras (64.8 million), with India (46.5 million) and Dominican Republic (46.2 million) close behind. In none of these cases did we observe large drops in unit value. The only two countries with binding quotas in 2004 in this category were China and Pakistan; while unit values fell for both, Pakistan's record was more moderate in that regard than Cambodia or Nicaragua, both without binding quota in 2004. At the other extreme in movement of unit value were Vietnam and Brazil with USD 6.00 increases.

Figure 9: Impact of Quota Removal on Exports to the US in Category 352
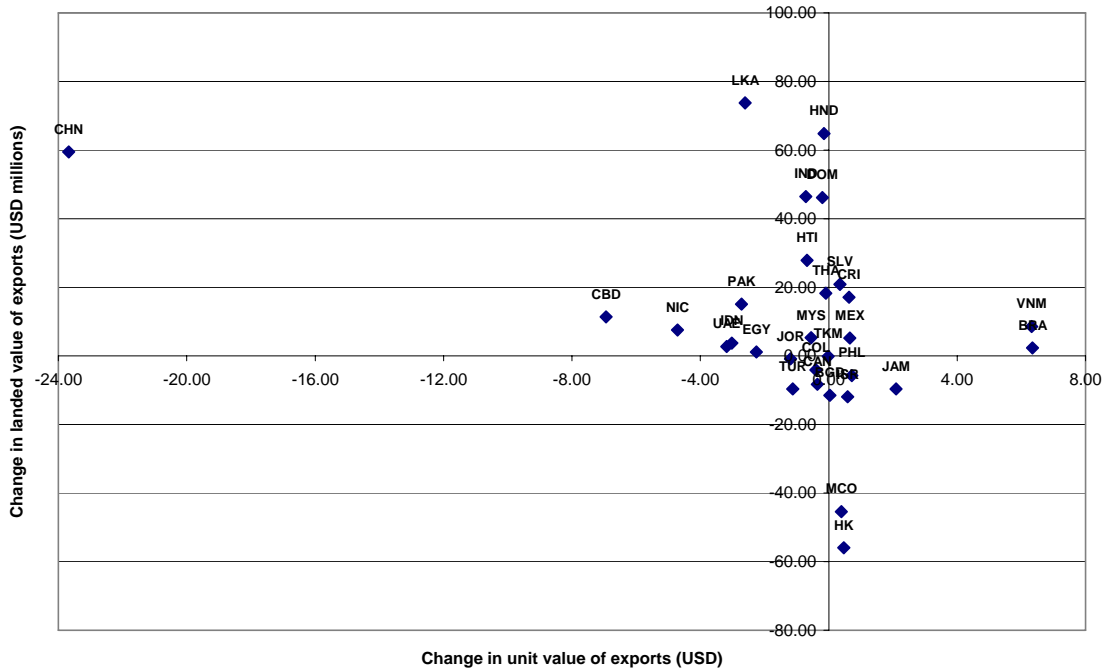
The three largest unit values in 2004 were those of China, Peru and Namibia respectively. China's unit value fell most precipitously, while Namibia's fell by less and Peru's increased. Even with China's large decline it remains a mid-market supplier. Taiwan has the lowest-cost producers at just under USD 6, while Bangladesh, Honduras, El Salvador and Costa Rica deliver dozens in just under USD 10.

Figure 10: Evolution of Unit Values on Imports into the US in Category 352
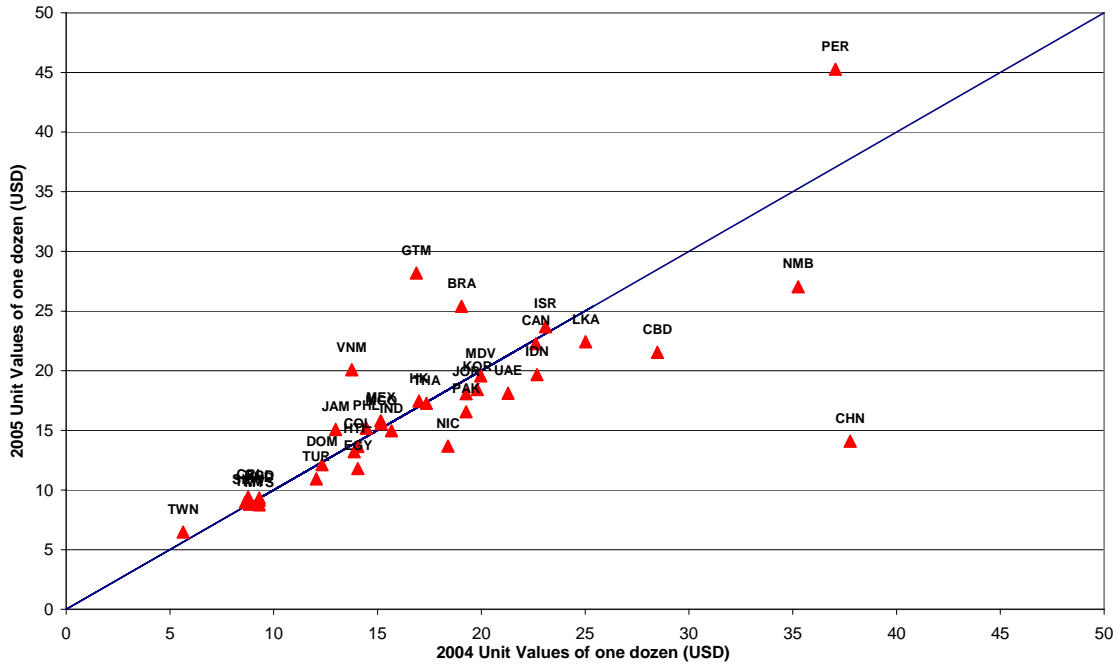
In the EU market, quota removal led to a tremendous increase in imports from China in quota category 13. Figure 11 illustrates the increased customs value and reduced unit value of those exports; it is also evident there that other countries matched the reduction in unit value but were not able to match the success in selling into the market.

Figure 11: Impact of Quota Removal on Customs Value and Unit Value of EU Imports in Category 13
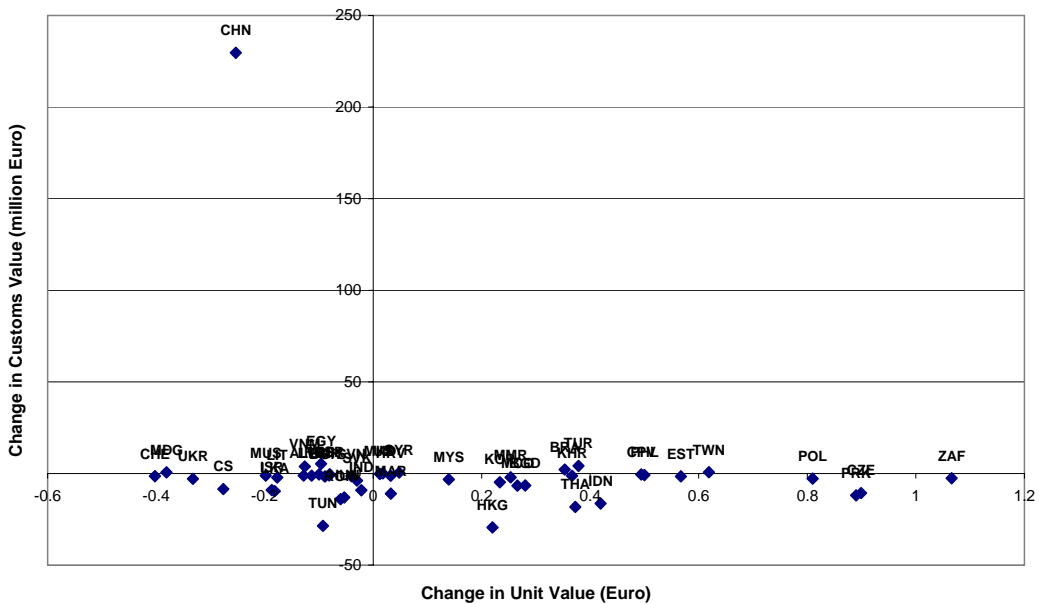
The changes in unit value in exports to the EU indicate that China in 2004 was not among the lowest-cost suppliers of underwear – that distinction belonged to Albania, Myanmar, Korea and Mauritius. Those were still the low-cost producers in 2005, but China then ranked among them.

Figure 12: Unit Values of Exports to EU in Category 13
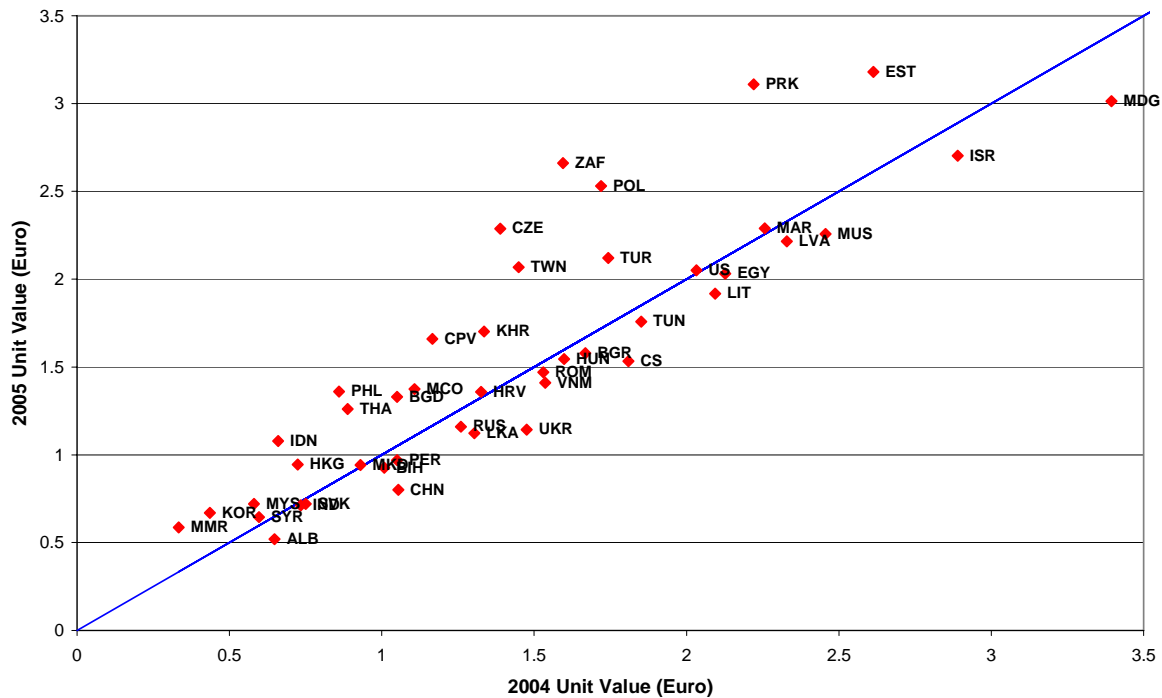
VII. Conclusions and extensions.

The removal of quota restrictions at the beginning of 2005 led to major dislocations in the international market for textiles and apparel. This paper provides a description of the magnitude of these changes. It also relates the magnitude of the shifts to the ex ante riskiness of the export strategy followed by some of the exporters to the US and EU markets.

In many countries there was a concentration of exports in the area of textiles and apparel. Whether this was a conscious policy or not, it increased the risk associated with the removal of quota restraints – a removal that had been pre-announced ten years previously. Data from 2005 indicates the expansion of exports by some countries, most notably China and India, and the contraction of others. Those following a high-risk concentration of exports are disproportionately evident both among those who have benefited from large expansions and among those who have lost from large reductions.

The Multi-Fiber Arrangement and its successor Agreement on Textiles and Clothing led to substantial trade diversion over their lifetimes. This trade diversion in the sense of

Viner (1950) has led to a global pattern of production that followed comparative advantage only approximately – since quotas limited purchases from the comparative-advantage countries, other countries could establish stable export niches in the unmet demand remaining. These were stable niches while the system of quotas continued, but were likely to disappear when the restraints were removed.

The data of this paper illustrate that 2005 was a period of consolidation of production in a few larger exporters. Among those countries that established niches in the protection of the quotas – for example, Lesotho or the Maldives – there was a drastic downsizing of exports. While there were positive surprises in 2005, the emerging pattern of production and export have reinforced and strengthened the patterns limited by quotas.

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Table A1: **Gains and Losses in USD millions in All Quota Categories**

Country	Exports in 2004	Exports in 2005	Net change	Percent change
China	29002.2	43579.8	14577.6	50.3
India	7878.2	9631.4	1753.2	22.3
Cambodia	2074.3	2297.8	223.6	10.8
Vietnam	3483.5	3696.7	213.2	6.1
Indonesia	4596.3	4799.6	203.3	4.4
Peru	794.2	940.2	146.0	18.4
Nicaragua	596.8	714.9	118.1	19.8
Jordan	965.8	1079.4	113.6	11.8
Pakistan	4206.6	4304.7	98.1	2.3
Haiti	318.0	412.4	94.4	29.7
Bangladesh	6682.5	6750.4	67.9	1.0
Egypt	1218.8	1247.9	29.1	2.4
Sri Lanka	2605.5	2632.6	27.1	1.0
Cyprus	51.5	69.5	18.0	35.0
Macedonia	373.3	383.0	9.7	2.6
Moldova	153.8	156.2	2.4	1.5
Botswana	32.9	35.1	2.2	6.8
Uganda	10.0	12.2	2.1	20.9
Togo	2.3	3.8	1.5	62.7
Tokelau Is	1.8	3.2	1.4	75.1
Bahamas	0.9	2.3	1.3	144.4
Panama	2.4	3.5	1.1	45.1
Eritrea	0.0	0.8	0.8	3994.0
Aruba	0.0	0.5	0.5	9975.7
Senegal	5.0	5.5	0.5	10.1
Benin	8.4	8.9	0.5	5.9
Andorra	4.4	4.9	0.4	9.9
Congo (DROC)	0.1	0.4	0.4	750.1
North Korea	12.3	12.6	0.3	2.6
Vatican City	0.0	0.3	0.3	5099.6
Trin & Tobago	1.0	1.3	0.3	25.6
Cayman Is	0.0	0.2	0.2	4040.2
Suriname	0.1	0.3	0.2	176.4
Antigua Barbud	0.1	0.3	0.2	173.3
Cocos Is	0.0	0.2	0.1	592.7
St Kitts-Nevis	0.0	0.1	0.1	2519.9
Br I O Ter	0.0	0.1	0.1	1491.8
Yemen	1.3	1.4	0.1	5.6
Cook Is	0.0	0.1	0.1	226.4
Laos	148.8	148.9	0.1	0.0
Vanuatu	0.0	0.1	0.1	.
St Helena	0.0	0.1	0.0	124.3
Seychelles	0.1	0.1	0.0	78.6
Pitcairn Is	0.1	0.1	0.0	45.4
Tuvalu	0.1	0.1	0.0	39.6
Nauru	0.0	0.0	0.0	1545.9
Marshall Is	0.0	0.0	0.0	1907.3
Fr Polynesia	0.1	0.1	0.0	12.9
East Timor	0.0	0.0	0.0	.

Solomon Is	0.0	0.0	0.0	106.7
Norfolk Is	0.0	0.0	0.0	.
Fr S & Ant lan	0.0	0.0	0.0	-7.7
Anguilla	0.0	0.0	0.0	-84.3
Rwanda	0.0	0.0	0.0	-88.0
St Vinc & Gren	0.0	0.0	0.0	-16.9
Congo (ROC)	0.0	0.0	0.0	-56.0
Bhutan	0.0	0.0	0.0	-71.6
Dominica Is	0.2	0.2	0.0	-5.8
Liberia	0.5	0.5	0.0	-2.2
Sao Tome & Pri	0.0	0.0	0.0	-81.5
Kiribati	0.0	0.0	0.0	-65.6
Liechtenstein	6.4	6.4	0.0	-0.5
Christmas Is	0.0	0.0	0.0	-95.7
Niue	0.1	0.1	0.0	-33.6
Grenada Is	0.1	0.0	-0.1	-97.6
Br Virgin Is	0.2	0.2	-0.1	-25.6
Heard & McDn I	0.1	0.0	-0.1	-68.3
Ecuador	31.2	31.1	-0.1	-0.2
Tonga	0.1	0.1	-0.1	-56.2
Somalia	0.2	0.1	-0.1	-54.2
Montserrat Is	0.1	0.0	-0.1	-90.3
Bermuda	0.1	0.0	-0.1	-70.6
Papua New Guin	0.1	0.0	-0.1	-83.1
Gambia	0.4	0.3	-0.2	-36.8
Gibraltar	0.2	0.1	-0.2	-65.5
Barbados	0.4	0.2	-0.2	-42.8
Gabon	0.3	0.0	-0.2	-89.2
Burundi	0.4	0.1	-0.2	-70.4
Algeria	1.2	0.9	-0.3	-23.1
Comoros	0.3	0.0	-0.3	-89.8
Guinea	1.0	0.7	-0.3	-34.0
Mauritania	0.8	0.4	-0.4	-44.3
Turks & Caic I	2.0	1.6	-0.4	-21.0
New Caledonia	0.8	0.3	-0.5	-57.6
Uruguay	22.9	22.4	-0.5	-2.0
Niger	0.7	0.1	-0.5	-79.4
Iraq	0.6	0.1	-0.5	-86.3
Zambia	18.6	17.8	-0.8	-4.4
Bolivia	46.3	45.4	-0.9	-1.9
Lebanon	17.9	16.9	-0.9	-5.2
Cen African Re	2.4	1.5	-0.9	-38.4
Falkland Is	5.3	4.3	-1.0	-18.3
Cape Verde	8.2	7.2	-1.0	-12.0
San Marino	2.2	1.1	-1.1	-48.6
Samoa	1.8	0.7	-1.1	-61.0
Sierra Leone	2.1	0.8	-1.3	-60.5
Iceland	6.7	5.4	-1.3	-19.7
Tanzania	19.6	18.2	-1.4	-7.0
Venezuela	3.7	2.2	-1.5	-40.6
Ethiopia	10.2	8.6	-1.6	-16.0

Guyana	7.4	5.7	-1.7	-23.3
Norway	59.4	57.4	-2.0	-3.4
Belize	18.3	16.1	-2.2	-12.1
Albania	137.0	134.7	-2.2	-1.6
Paraguay	9.6	7.2	-2.4	-25.1
Kazakhstan	31.6	29.0	-2.6	-8.1
Angola	2.7	0.1	-2.6	-95.7
Georgia	7.0	4.4	-2.6	-37.4
St Lucia Is	3.6	0.5	-3.0	-85.3
Ghana	10.5	7.4	-3.1	-29.5
Afghanistan	15.4	12.1	-3.3	-21.2
Azerbaijan	6.8	3.3	-3.5	-51.4
Malawi	27.0	23.0	-3.9	-14.5
Cote d'Ivoire	21.2	16.9	-4.3	-20.1
Mozambique	14.9	10.2	-4.7	-31.4
Chile	44.4	39.4	-5.0	-11.2
Bosnia	139.5	134.0	-5.4	-3.9
Nigeria	40.5	34.5	-6.0	-14.8
Chad	29.6	22.8	-6.8	-23.1
Armenia	24.6	17.6	-7.0	-28.5
Burkina Faso	16.1	9.0	-7.1	-44.2
New Zealand	40.2	32.5	-7.6	-19.0
Honduras	2658.2	2649.5	-8.7	-0.3
F St Micronesi	10.6	1.0	-9.6	-90.8
Kenya	290.2	280.3	-9.9	-3.4
Cameroon	31.7	21.0	-10.7	-33.7
Brazil	639.2	628.3	-11.0	-1.7
Kyrgystan	22.9	11.6	-11.3	-49.5
Argentina	132.2	120.7	-11.6	-8.7
Zimbabwe	45.8	31.4	-14.4	-31.4
Mali	48.7	29.3	-19.3	-39.7
Swaziland	184.5	163.2	-21.3	-11.6
Kuwait	34.5	12.4	-22.1	-64.1
Saudi Arabia	70.5	47.1	-23.4	-33.2
Belarus	235.7	211.2	-24.5	-10.4
Tajikistan	69.4	43.8	-25.6	-36.9
Colombia	670.7	645.1	-25.7	-3.8
Namibia	79.9	54.0	-25.8	-32.3
Madagascar	526.9	500.7	-26.2	-5.0
Iran	368.7	342.4	-26.2	-7.1
Turkmenistan	105.5	76.8	-28.7	-27.2
Malta	165.2	134.5	-30.7	-18.6
Costa Rica	525.2	492.0	-33.2	-6.3
Latvia	230.6	196.6	-34.0	-14.8
Qatar	65.7	30.1	-35.6	-54.1
Bulgaria	1621.8	1581.7	-40.0	-2.5
Nepal	224.4	182.2	-42.2	-18.8
Brunei	216.8	168.7	-48.1	-22.2
Malaysia	1182.7	1129.3	-53.5	-4.5
Bahrain	257.4	200.4	-57.1	-22.2
Estonia	291.7	231.6	-60.1	-20.6

Uzbekistan	197.3	135.4	-61.9	-31.4
Fiji	85.0	20.0	-65.0	-76.5
Lesotho	456.9	390.8	-66.2	-14.5
Israel	956.4	889.8	-66.7	-7.0
Slovenia	408.4	335.1	-73.3	-17.9
Maldive Is	81.3	4.8	-76.6	-94.2
El Salvador	1717.2	1639.4	-77.8	-4.5
Ukraine	629.2	549.6	-79.6	-12.6
Oman	137.7	56.5	-81.2	-58.9
Syria	271.6	190.4	-81.2	-29.9
Croatia	615.3	532.8	-82.5	-13.4
Jamaica	153.2	62.8	-90.5	-59.0
Mongolia	241.9	148.9	-93.0	-38.4
Singapore	296.3	201.9	-94.3	-31.8
South Africa	327.3	227.0	-100.3	-30.6
Serbia	187.0	73.2	-113.8	-60.8
Slovak Rep	721.2	605.0	-116.2	-16.1
Guatemala	1964.8	1833.0	-131.8	-6.7
Lithuania	705.4	570.9	-134.5	-19.1
Hungary	1283.1	1140.8	-142.3	-11.1
United Arab Em	574.5	426.1	-148.4	-25.8
Mauritius	865.7	713.7	-152.0	-17.6
Switzerland	1878.2	1725.2	-153.0	-8.1
Philippines	2364.4	2190.8	-173.5	-7.3
Turkey	12467.4	12265.5	-201.9	-1.6
Japan	1169.5	965.0	-204.5	-17.5
Dominican Rep	2064.9	1859.7	-205.1	-9.9
Tunisia	3381.8	3176.0	-205.7	-6.1
Thailand	3457.5	3250.0	-207.4	-6.0
Australia	819.4	585.9	-233.6	-28.5
Morocco	3132.5	2864.0	-268.6	-8.6
Romania	4867.6	4572.9	-294.6	-6.1
Canada	3130.1	2834.5	-295.7	-9.4
Poland	1968.7	1660.3	-308.4	-15.7
Russia	594.0	273.1	-320.9	-54.0
Czech Republic	1693.3	1317.4	-375.9	-22.2
Macao	1959.7	1576.8	-382.9	-19.5
Taiwan	2790.3	2223.6	-566.8	-20.3
Mexico	7833.1	7247.3	-585.9	-7.5
Hong Kong	6335.3	5706.8	-628.5	-9.9
Korea	4086.6	3026.7	-1059.9	-25.9

Source: author's calculation. Gain is derived as change in value from 2004 to 2005. Percent gain is Gain *100 /2004 value.