EU and US safeguards against Chinese textile exports: What consequences for West African cotton-producing countries?

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- **In 2005, following the phase-out of the Agreement on Textile and Clothing, the EU and the US have implemented new restrictions on textile and clothing imports from China. Available data suggests that the shortfall thus imposed on China, in terms of textile exports to the EU and to the US, is significant**
- **West African cotton-producing countries are very dependant on cotton earnings for their GDP and over the last years, most of the growth of their cotton exports' revenues has resulted from increasing exports to China.**
- **The results of a model of Chinese and West African cotton exchanges suggests that Chinese imports of West African cotton are strongly dependant on its textile exports to the EU and the US.**
- **EU and US safeguards against Chinese textile might have seriously hampered West African cotton exports opportunities over the past two years.**

Introduction

On 1st January 2005, the Agreement on Textile and Clothing (ATC) expired and all the quotas on the textile sector should have been removed. Such liberalization was subject to an investigation as to its likely effects. According to a survey based on over 43,000 Google hits related to "textile apparel quota" by researchers of the Harvard Center for Textile and Apparel Research (Abernathy et al., 2005), a prevailing view has emerged among scholars: textile exports from low-wage countries that faced restrictions under the ATC, and from China in particular, should have increased massively and rapidly.

Since textile production is one of the main components of cotton demand, and since Chinese cotton production capacities are already largely being used, a major side effect of this liberalization should have been to foster a significant expansion of Chinese cotton imports and a subsequent rise of cotton's world price. According to Fang and Babcock (2003), the liberalization of the textile sector could have boosted the growth of China's imports of cotton by about 70 to 100% yearly until 2010. Such an increase would have led cotton prices to climb annually between 7.3 and 11% on the world market[2].

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[2] These figures are extra increases over a baseline forecast assuming the continuity of prevailing trade policy and Food and Agricultural Policy Research Institute (FAPRI) macroeconomic forecasts.

However, new safeguards against textile imports from China have been implemented by the European Union (EU) and by the United States (US) to protect their domestic textile industries. These agreements attenuate the expected effects of the ending of the ATC: by limiting the potential growth of Chinese textile exports, they limit the expansion of Chinese cotton imports.

The media has extensively commented on the commercial negotiations over Chinese textile and on their consequences for the Western textile industry and consumers. However, the effects of these agreements go far beyond the interests of their direct participants. Benin, Burkina Faso and Mali export an increasingly high share of their cotton to China, and rely considerably on these export revenues for their GDP. EU and US safeguards may thus significantly affect them by depriving them of new export opportunities.

ATC phase-out and Chinese textile trade

A short history of textile protectionism

Apparel manufacturing is a labour-intensive industry with little capital investment requirements. Since the second half of the 20th century, apparel has thus been increasingly produced in developing countries and exported to industrialized countries.[3] In order to protect domestic industries, developed countries established bilateral agreements imposing import quotas, both on the basis of the origin country and of the product, when imports caused a risk of "market disruption".[4] These agreements were implemented, under the General Agreement on Tariff and Trade (GATT), in the Short Term Arrangements for international trade in cotton textiles in 1961 and then under the Long Term Arrangement from 1962 to 1973.

They were first codified in the Multi-Fibre Arrangement (MFA) in 1974, which allowed member countries to maintain their quotas but committed them to progressively increase the quantities according to targeted growth rate that ranged annually between 1 and 10%. The MFA was then replaced by the Agreement on Textile and Clothing (ATC) in 1995 and a four-step schedule for the progressive phase-out of quotas was settled. It implied that an increasing number of product categories were to be freed from quota restrictions and that the remaining quotas were to be regularly increased. All quotas were to be removed at the end of a 10-year period, by 31st December 2004.

How would a complete removal of ATC quotas have affected the Chinese textile market?

MFA, and then ATC, quotas have resulted into trade diversion by fragmenting the world production and shifting production from low-cost to higher-cost production regions. Basic mechanisms underlying the removal of the ATC are not controversial. The main expected effect is an efficiency gain: the phasing-out of quotas means that production and resource allocation decisions are affected more by economic fundamentals and are more coherent with basic trade theory. Competition among exporters in producing countries intensifies and the artificial pattern of production should shift towards a more "natural" production pattern that is consistent with comparative factor prices and productivity (especially labour cost and productivity), international exchange rates, transport costs and tariff rates.

[3] In 2001, Developing countries' textile and apparel exports in nominal dollars were almost seven times their 1980 level and accounted for 12% of total exports whereas developed countries' textile and apparel exports were only over two times their 1980 level and accounted for only 3% of total exports (Gelb, 2007).

[4] « 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 » (Francois and Wôrz, 2006).

Concretely, a complete liberalization should have benefited developing countries to the extent that they were affected by the quotas, especially those that produce both textile and apparel and can engage in high quality, high value-added and diversified production. This is typically the case, among others, of China. Indeed, China enjoys a very strong comparative advantage in textile and apparel production, and was the country most affected by EU and US restrictions contained in the ATC. According to Buelens (2005), it faced both the highest number of quotas and the biggest share of binding quotas (over 60%)[5]. Appelbaum (2005) summarizes China's potential for increased textile and apparel production and exports with the four following factors: the country has the world's widest apparel offer (it exports the highest number of Harmonized System 10-digits products); the country is well endowed with raw materials (China has the world's largest production capacities for cotton, silk and man made fibres); the Yuan/Dollar exchange rate makes Chinese exports very competitive; and Chinese companies enjoy skilled and low-cost labour and managerial, financial and marketing expertise from Hong Kong and Taiwan investors. According to a report of the United State Trade Commission (USITC) on the Assessment of the Competitiveness of Certain Foreign Suppliers to the US Market (USITC, 2004), with the removal of the ATC, "China [was] expected to become the «supplier of choice» for most US importers" (…) "because of its ability to make almost any type of textiles and apparel products at any quality level at a competitive price".

The effects of ATC phase-out have been more precisely predicted using several econometric models. The results and the characteristics of the studies estimating the consequences of ATC phase-out on Chinese textile trade flows are presented in appendix 1 (page 10). According to Li and Mohanty (2003), "studies examining the effects of MFA elimination on textile trade have unanimously concluded that China would be one of the primary beneficiaries of quota eliminations" and that the quantitative effects should be sizeable, especially regarding clothing.
Indeed, deeming that the outcomes of the study that generated the smallest figures can be considered as a minimal impact estimate of the ATC phase-out, it appears that the quotas' removal would have boosted China's textile exports by at least 10.8% and its apparel exports by at least 100.7% (Mlachila and Yang, 2004).
Ultimate data trends also confirm this prediction. Despite being very limited, the 2002 partial liberalization caused a major trade flow shift. China greatly increased its exports of the newly liberalized products to the US and EU market, in some cases up to several hundred percent. Other countries also managed to benefit from this market opening but to a far smaller extent[6].

New safeguards against Chinese textile[7]

The prediction of such significant changes has frightened the European and the American textile and clothing industries and their governments. In 2002, the textile sector still employed over 2 million people in the EU and 800 000 people in the US. In Greece, Italy or Portugal, the share of the textile sector in overall manufacturing employment exceeded 10% (Buelens, 2005).

[5] Since one of the major contention points related to China's demand to join the WTO in the late 1990s was apparel and textiles, China's WTO accession protocol allowed the US and the EU to increase their quota quantities by a slower rate than the agreed ATC rates and, eventually, to set new safeguard measures or re-impose quotas.
[6] In 2002, EU imports from China of newly liberalized products increased by 53 % in value and by 164 % in volume. Total imports from all origins in those products increased only by 1 % in value and 10 % in volume (EU 2003).
[7] A chronology of the negotiations which led to the adoption of these new safeguards is given in Appendix 2, page 11.

China's WTO accession protocol allows both for "Textile Specific Safeguard" (TSSC), and "product-specific safeguards"[8]. However, quite understandably, neither the US nor the EU, have launched such unilateral restrictions. It is quite obvious that they would have lost tremendously from Chinese retaliation measures. Europeans and Americans therefore initiated "market disruption" investigations only to pressure the Chinese government to sign Memorandums of Understanding (MoU),. According to these agreements (respectively signed in June and December 2005), the growth rate of a range of particularly sensitive textile products is restricted for the three following years. They cover about 40% of China's textile exports to the EU and about 24 % of its textile exports to the US (Cuisson, 2006 and OTEXA, 2006). The agreed growth levels range between 8 and 12.5% annually in the EU-China MoU, with an average 10.5%. The Sino-US MoU sets average growth rates of 10% for 2006, 12.5% for 2007 and 15% for 2008 for textile, and 12.5% for 2006 and 2007 and 15% for 2008 for apparel (Jones, 2005).

To what extent do these safeguards impede Chinese textile exports' growth?

Combined, European and American markets account for more than a third of total Chinese textile exports. Between 1995 and 2004, the combined EU and US markets' share for Chinese textile and apparel exports fluctuated between 37 and 42% in value[9]. If the MoUs effectively greatly limit potential exports, the effect of these measures could be far from negligible.

Estimating the impact of the MoUs would require comparing the estimated growth rate of Chinese textile and apparel exports in a complete ATC phase-out scenario and this growth rate in the presence of the restrictions. Unfortunately, most of the available trade data is in value, while the growth rates as specified in the MoUs are in volume. Moreover, figures of the estimated impact of a complete ATC phase-out, as reported in table 2 are not product-specific but averages. They are therefore probably significantly under-estimated for the most "sensitive" products[10], precisely, those covered by the MoUs. However, an estimate "back of the envelope" of the effects of the MoUs on aggregated Chinese exports to the EU and the US may be computed. The most interesting way of doing it is to take the smallest figures for all parameters in order to be able to reckon the result as a minimal impact.

First, the estimates of ATC phase-out effects, which are percentage changes over a non-quota removal baseline, are converted into an absolute growth rate for the ATC quota-removal scenario. To do so, it is considered that, in 2006, in the absence of the ATC phase-out, the "natural" growth rate of Chinese textile exports would have been at least equal to their growth rate in the last year before the removal of quotas; that is 2004[11]. This growth rate is then multiplied by the smallest estimate of ATC phase-out's effect (that is, +100.7% for apparel and +10.8% for textile according to Mlachila and Yang, 2004).

[8] TSSC allow to restrain imports that are "due to market disruption, [and] threaten to impede the orderly development of trade in these textile and apparel products" for one year (renewable up to 2008) without negotiating with China (WTO, 2001, paragraph 242a). "Product-specific safeguards" allow to limit any import's growth for three years (renewable for two), but only after investigation that determined that China's exports are "the cause" of market disruption (WTO, 2001, section 13).
[9] Calculations realized with Comtrade data.
[10] According to Buelens (2005), the exports' growth rate of most sensitive products may have been of up to 1250% in value and 2298% in volume.
[11] The 2004 growth rate has been calculated using Comtrade data.

The effect of the safeguards on the potential 2006 growth rate is then calculated as the variation between the "natural" 2006 growth rate and the estimated growth rate for 2006 in the presence of quotas[12]. Table 1 sums up the results:

Table 1: Estimated effect of the MoUs on the growth rate of Chinese textile exports' to the EU and the US in 2006

Growth rate			Restrictive Effect of the MoUs
2004	2006 no quota	2006 MoUs	
26%	45%	34%	24%

Considering the complete phasing-out of ATC as the baseline, and assuming a number of simplifying assumptions, the implementation of the MoUs is found to limit the growth rate of the aggregated Chinese textile exports to the EU and to the US in 2006 by 24%.

Linking Chinese textile Exports to Chinese cotton imports from West Africa

How much, then, may this limitation have turned into a cotton import growth limitation, especially from the cotton-dependant countries Benin, Burkina Faso and Mali?

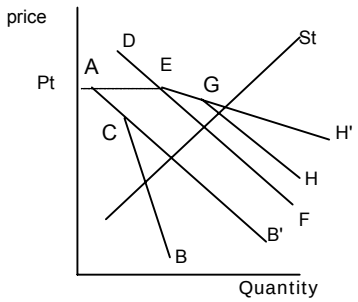
Since "mill-demand for fibre is determined by textile output" (Fang and Babcock, 2003), the increase in demand for Chinese textile that would have resulted from a complete elimination of EU and US ATC quotas would have translated into an increase in demand for cotton within China. Supply constraints (water and land use mainly) are expected to prevent a subsequent production increase to fulfil the increase in demand. The complete elimination of US and EU textile quotas would thus foster a rise in China's cotton imports, amongst other sources, from West Africa.

Figure 1, page 6, illustrates these mechanisms by which shocks on the Chinese textile market may affect the West African cotton market. Then, to link directly the textile quota removal to the potential increase in West African cotton exports to China, the elasticity of Chinese imports of West African cotton to Chinese textile exports to the EU and the US is estimated by building a Sino-West African cotton trade model.[13] The main finding of the model is to asses that a 1% increase in Chinese textile exports to the EU and the US provokes a 1.8 % increase in Chinese cotton imports from West African cotton-producing countries.

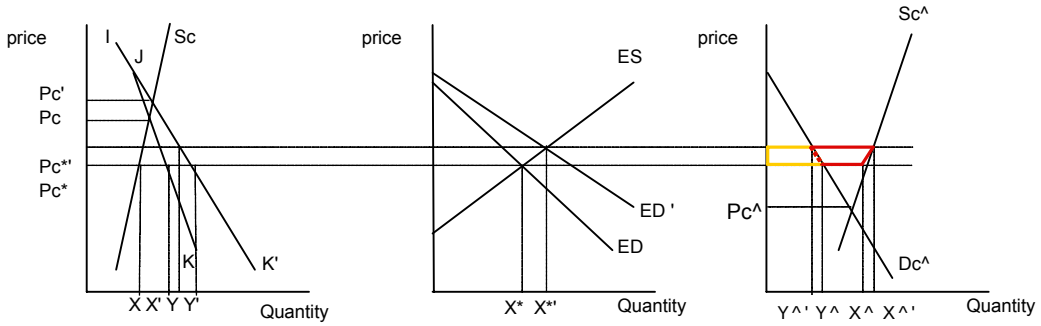
[12] For the reasons mentioned above, this required a few simplifying assumptions. The estimate is therefore conducted assuming:
- That the 2006 average growth rate allowed by the MoU is as estimated by Jones (2005) and the European Commission (2005), that is, 10.75% in the EU and 12.5% in the US.
- That the average shares of restricted products in total EU and US Chinese textile and apparel imports are as estimated by Cuisson (2005) and OTEXA (2005), that is, respectively, 40% and 24%.
- That the products concerned by the restrictions do not have higher growth rate potentials than the non-restricted product, that is, that they would have grown at the same estimated "natural" growth rate in the absence of MoUs.
- That the respective share of the EU and the US in aggregated Chinese exports to the EU and the US in 2006 would have been the same as in 2004, that is, respectively, 53% and 47%.

[13] Aggregated Chinese cotton imports from West African countries are regressed on aggregated Chinese textile exports to the EU and the US. The precise specifications of the model as well as its outcomes are described in appendix 3 (pages 12 and 13).

Figure 1: Impact of the phase-out of quotas on Chinese textile on the West African cotton market



a. Chinese textile market



b. Chinese cotton market

c. World cotton market

d. West African cotton market

Box 1: Underlying mechanisms to figure 1

Figure 1 represents a world composed solely of China and the rest of world in the textile market and China and West Africa in the cotton market. China is a net exporter of textile and a net importer of cotton, while West Africa is a net exporter of cotton.

Panel (a) represents the Chinese textile market. *ACB* is the export demand for Chinese textile, *DEF* the national demand and *DEGH* the total demand. The existence of quotas causes the export demand to be kinked at *C* and thus the total demand to be kinked at *G*.

Panel (b) represents the Chinese cotton market. The cotton demand, *IJK*, is derived from the textile demand and is therefore also kinked in *J*.[14] Since China does not produce enough cotton for domestic consumption, in the absence of trade, the price of cotton in China would be *Pc*. Panel (d) represents the West African cotton market. Since West Africa is a net exporter of cotton, in the absence of trade, cotton price in West Africa would be *Pc^*. The confrontation of Chinese excess demand, *ED* and West African excess supply, *ES* results in a World equilibrium with world price *Pc**, depicted in panel (c), transportation costs being neglected. At Pc*, West African exports to China amount to the quantity *X**.

With the elimination of ATC quotas, Chinese textile exports demand shifts to *ACB'* and total Chinese textile demand to *DEH'*. Chinese cotton demand thus also shifts upward to *IJK'*, and cotton price in China increases to *Pc'*. Producers adjust to this price increase by raising their production. However, water and land constraints prevent domestic production to increase as much as domestic consumption (Li, 2003 and Fang and Babcock, 2003). Excess demand on the World market consequently increases to *ED'*, leading to a higher World price *Pc*'*. West African exports thus increase from X* to X*'.

For West African producers, the gain from the removal of ATC quotas in China is therefore equal to the difference between X*xPc* and X*'xPc*', the sum of the yellow and the red areas in panel (d).[15] Symmetrically, the red and yellow areas represent the shortfall incurred by West African cotton producers in consequence of the re-imposition of quotas on Chinese textile exports by the EU and the US, that is, exactly what this policy brief aims at assessing.

[14] For simplicity, cotton demand is considered for mill-use only.

[15] The yellow area is West African cotton consumers' lost and the red area the net welfare gain for West Africa.

Estimating the shortfall for West African countries

Coupling the figures both of the retraining extent of the MoUs on Chinese exports to the EU and the US and the elasticity between these exports and Chinese cotton imports from West Africa reveals that the MoUs could impede the extra growth of West African cotton exports to China, due to the removal of ATC quotas, by about 45%. And, according to a report of the French Embassy in Beijing, China was responsible for all the growth of African cotton exports over the last three years (Mission Economique de l'Ambassade de France en Chine, 2006). This is to say that, limiting the region's export possibilities to China in fact pretty much means limiting the region's production growth perspective. In absolute terms, this implies, for example that, because of the MoUs, in 2006, Benin's cotton exports would grow only by 59 to 67% instead of 73 to 89%.

Of course, West African countries currently may not have the productive capacities to increase their exports massively[16], and these figures are only estimations[17]. However, they do suggest that the shortfall incurred by West African cotton-producing countries may be substantial. It may be all the more significant because a stronger increase in Chinese demand would most probably have pushed world cotton prices to a higher level[18].

In Mali, Burkina Faso and Benin, cotton exports represent between 5 and almost 9% of GDP and between 88 and 160% of the food import balance. The dependence of the rural population on cotton is also very significant. Cotton is the main cash crop and often the most profitable, not easily substitutable, crop. Its cultivation would make up the livings of about 10 million people in West Africa. And, besides being an important source of revenue both at the national and the household level, cotton cultivation positively influences the agricultural production, allows for health, physical and social infrastructure improvements in cotton-growing areas and pushes to better alphabetization schemes and regional cooperation (Oxfam, 2002).

A large research corpus examined the cotton sectors of Sub-Saharan countries and this literature unanimously underlines the significance of cotton trade for their development as well as the major impacts of external price and quantity variations on the living conditions of producers and rural population. Minot and Daniels (2002) found, for example, that a 40% reduction in farm gate prices provokes a short-run reduction of growers' income by 21%, a 7% reduction of per capita rural income, and a 40 to 48% rise of the incidence of poverty among the rural population in general.

Conclusion

This paper tends to show that EU and US safeguards may significantly negatively impact on West African economies. Its conclusion therefore may be used to argue in favour of a rapid and complete ending of the quotas for a new reason[19]. But most importantly, it provides a new example of the

[16] Shepherd and Delpeuch (2007) suggest that the supply elasticity in West Africa is very weak and has been declining since the middle of the 1990s.
[17] Despite a result check with the use of a panel model, the lack of data and the "Lucas critique" imply that findings have to be taken very carefully. Moreover, the paper's hypothesis relies on the assumption that ATC phasing-out would result in a global textile production increase. Most researchers agree on this, but not all of them. For example, Fok (2006) is sceptical over the fact that ATC phasing-out would provoke an increase in global cotton demand, and in cotton's world price because it would increase China's pricing power at the expense of other producing countries.
[18] It is beyond the scope of this paper to estimate the price impact of the MoUs, however, several papers have shown that the quotas' phase-out should have provoked a significant world price increase and since the effect of the MoUs in terms of quantity seems to be significant, the impact in terms of price may also be significant.
[19] According to an OECD study (2003), "Canada, the EU and the USA are again and again expected to experience substantial increases in welfare from ATC reform" thanks to "lower consumer prices and more efficient resource allocation".

indirect and sometimes damaging results of some western protectionist policies. As economic matters become increasingly interconnected, this example encourages policy makers to pay more attention to the multiple and indirect consequences of their policies and to find more equitable equilibria to satisfy the interests of all the parties involved. This article thus does not aim at minimizing the problems faced by Western textile industry professionals but rather at suggesting that the EU should fully assume the outcomes of its policies. In this case, for example, the EU could have provided compensation by agreeing to diminish its agricultural subsidies or to increase the funds allocated to "aid for trade" strategies that may help West African countries in taking full advantage of trade reforms such as the phase-out of textile quotas.

This example also highlights what should be avoided in the Doha Round of negotiations. Initially, the textile quotas' elimination was designed as an incentive to convince the developing countries of accepting the creation of the WTO (Francois and Wörz, 2006). If developing countries are to remain confident in the multilateral trading system, further concessions that will be offered should be implemented in a much more efficient and transparent manner. This also means that protectionist economies should anticipate liberalisation schedules more – for example, the liberalisation of agricultural products – in order to avoid the panic and the uncontrolled effects it lead to when the ATC finally expired.

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Appendix 1: A chronological summary of findings on the effects of ATC implementation on Chinese textile and apparel trade flows, at mid-2006.

Paper	Methodology	Scenario	Quota removal's impact on Chinese textile and apparel trade: % over the baseline
Li and Zhai (2000)	Computable General Equilibrium (CGE) with 41 sectors and 10 households. 1995 social accounting matrix. 15 years forecast.	Baseline and 2 scenarios: ATC phase-out alone and WTO accession.	Results of the WTO accession scenario, 2005: - Textile exports: 63.8% - Apparel exports: 214.1%.
Ianchovina et al. (2000)	Modified version of the Global Trade Analysis Project (GTAP) model20 that explicitly takes into account tariff exemptions on input imports for exports.	Baseline and November 1999 WTO "Accession offer" scenario. Estimates for the period 1995-2005.	No trade flow estimates (only world export shares) but their results show that studies, which fail to take tariff exemptions into account might overstate Chinese exports' increase due to WTO accession as much as 75% in the apparel sector.
Francois and Spinanger (2002)	GTAP model (version 5), 23 sectors and 25 regions. 1997 is the benchmark year. 10 years forecast.	Baseline and 3 scenarios: ATC phase-out, November 1999 WTO "accession offer", and full accession.	Results of the WTO accession scenario, 2007: - Textiles exports: 39% - Clothing exports: 168%
Spinanger and Verma (2003)	GTAP model. Reference to surveys conducted in Hong Kong (2000/2003) in which CEOs of 14 major textile enterprises and traders were asked about their sourcing plans in the future21. 1997 is the benchmark year.	Baseline and 2 scenarios ATC phase-out alone and WTO accession.	Results of the WTO accession scenario: - Textile exports: 39% - Apparel exports: 168%
Mlachila and Yang (2004)	GTAP model, updated until 200722.	Baseline and WTO accession scenarios assuming different elasticities.	Results of the standard GTAP elasticities scenario, 2007: - Clothing exports: 100.7% - Textile exports: 10.8%

[20] For a detailed summary of the Centre for Global Trade Analysis GATP model characteristics, see, for example, Michla and Yang (2004), pp. 33-34. For full information on the model, see the web site dedicated to it: https://www.gtap.agecon.purdue.edu/default.asp.
[21] The results of the surveys are taken from Andriamananjara et al. (2004).
[22] Based on International Monetary Fund (IMF) and World Bank (WB) indicators.

Appendix 2

Box 1. Chronology of international efforts to postpone the phase-out of ATC quotas[23]

- March 2004: In the Istanbul Declaration, US and Turkey textile industry trade associations ask the WTO for a three-year extension of the phase-out.
- June 2004: trade associations from 47 new countries join the Istanbul Declaration.
- July 2004: Mauritius (joined by six other DCs in September) asks for an emergency WTO meeting.
- October 26, 2004: prospects for the postponement of the phase-out are ruled out in an informal meeting of the WTO Council on Trade in goods.
- December 10, 2004: China reaches a compromise with other developing countries, in which WTO assistance is offered to beneficiaries.
- December 15, 2004: The Chinese Ministry of Commerce announces export taxes of 2 to 4% on certain textile and apparel products (as from January 1, 2005).

Box 2. Chronology of negotiations between the EU and China

- April 6, 2005: The European Commission publishes "Guidelines to the use of the TSSC" and sets alert levels for categories of products beyond which it would "consider launching market disruption investigations that could ultimately lead to the use of temporary safeguards as permitted by the TSSC"[24]. (European Commission, 2005)
- April 24, 2005: Such investigations are launched for 9 categories of textile and apparel products[25].
- May 2005: The Commissioner for External Trade, Peter Mandelson, meets the Chinese Trade Minister, Bo Xilai, in Paris.
- May 17, 2005: On the basis of trade data, urgency procedures are launched for two categories of products and formal consultation with China is requested.
- May 23, 2005: The urgency procedures are approved by the Member States.
- May 24, 2005: Commissioner Mandelson meets the Chinese vice Minister and Textile Negotiator, Gao Hucheng, in Brussels. They agree to intensify negotiations.
- May 27, 2005: The Commission demands a formal consultation on the two categories of products. Under the terms of TSSC, China has two weeks to take action to restrain export growth in the specified categories to the level of the previous fourteen months before the importing country is be able to limit the exports to this same effect.
- June 10, 2005: Peter Mandelson and Bo Xilai sign the MoU in Shanghai. The agreement manages the growth of Chinese textile imports to the EU until 2008: it takes effect on the 11th of June 2005 and is valid until the 31st December 2007

Box 3. Chronology of negotiations between the US and China [26]

- May 19, 2003: The CITA publishes its procedures for considering safeguard measures in the Federal Register.
- July 24, 2003: CITA receives petitions from the American Manufacturing Trade Action Coalition, the American Textile Manufacturers Institute and the National Textile Association.
- August 13, 2003: The CITA requests for public comments on the safeguard action demand on three textile product categories[27] imports from China.
- December 24, 2003: Formal notification of the safeguard is sent to the Chinese government. The CITA thus implements 12 months imports quotas on these products and requests consultation.
- June – November 2004: Several textile and apparel trade organizations and employee unions issue a number of new safeguard petition on new products. The CITA each time repeats the procedure.
- December 1, 2004: The US Association of Importers of Textiles and Apparel litigates proceedings against the US and the CITA in the US Court of International Trade for adopting safeguard measures on the basis of petitions denouncing market disruption risk for products still protected by quotas.
- December 30, 2004: The US Court of International Trade comforts the importers' association and the safeguard procedures are suspended.
- April 27, 2005: Following an appeal of the Department of Justice, the Court of Appeals for the Federal Circuit cancels the Court of International Trade's motion.
- May 25, 2005: The Chinese Ministry of Commerce increases export taxes by 400% on certain textile and apparel products as from June 2005.
- November 2005: The safeguard measures are all implemented.
- November 8, 2005: Rob Portman, US Trade representative, and Bo Xilai sign the MoU in London after seven rounds of negotiation. It will enter into force on January 1, 2007 and will last until December 31, 2008. It does dot need to be ratified by the Congress.

[23] This chronology was established on the basis of a report for the US Congress (Gelb, 2007).
[24] See Buelens (2005), table 12, p. 16 for the formulae determining consultation levels and the levels below which the TSSC should not be invoked.
[25] EU textile categories have been created in the Council regulation (EEC) n°3030/93 of 12 October 2005 on common rules for imports of certain textile products from third countries. They regroup 8-digit references of the Combinated Nomenclature.
[26] This chronology was established on the basis of a report for the US Congress (Jones, 2005).
[27] The products categories are composed of 8-digits lines of the North American Industry Classification System. Their composition is available on OTEXA's website: Http://Otexa.Ita.Doc.Gov/Corr.Htm.

Appendix 3: The model

Specification

Drawing on the abundant literature on cotton trade modelling, the following characteristics are adopted in the model:

- Cotton demand is modelled as a derived demand depending on textile demand and on the cotton share of total fibre consumption at the mill level. Textile consumption is exogenous: cotton demand is regressed on textile exports to the EU and the US. Substitutability between fibres is controlled for according to relative cotton and man-made fibres prices. Indeed, when Fang, Colby and Babcock (2001) model inter-fibre competition in China, they note that "since 1989, relative price changes have become the dominant factor influencing cotton share". The use of a price ratio rather than two prices results in higher significance of the estimates because it allows avoiding multicollinearity between the prices (Coleman and Thigpen, 1991). Polyester price is used as a proxy for man-made fibre.
- Equations are specified in logs. This approach indeed avoids the exchange-rate conversion problem (Clements and Lan, 2000): using only logarithmic changes, variations are independent of units. Logarithms also convert changes in variables into percentage changes and directly give the searched elasticity.
- Finally, most studies use comprehensive cotton markets models, which do not only contain demand equations. In Fang and Babcock (2003), for example, the model also includes production, ending stocks and export equations and an import identity for closure. In this study, production and stock data will thus be tested as control variables.

The base model is specified as follows: aggregated Chinese cotton imports from the three West African countries ("Mc") are regressed on aggregated Chinese textile exports to the EU and the US ("Xt"). An index of cotton price to polyester price ("Apoly") is used to control for fibre substitution. A double-log specification is used and the regression is conducted using Newey-West heteroskedasticity and auto-correlation consistent coefficient covariance. A stock control variable ("stock") is used rather than a production variable, which is found to be insignificant at a 10% level and to impede the explanatory power of the model[28].
The base model can thus be written as follows:

$$\text{Log (Mc)} = \alpha + ß_1 \text{log (Xt)} + ß_2 \text{log (Apoly)} + ß_3 \text{log (Stock)}$$

The trade data is taken from Comtrade, in US$ trade value[29]. The A-index[30] is used as a proxy for West African cotton price and is taken from the USDA Cotton and Wool Outlook 2005, as well as the world price of polyester and Chinese cotton production and stocks. The EU is defined as EU15 for the whole period as trade data is not available for EU25 equivalent for the years before EU enlargements. The sample covers the 1989-2004 period and only includes thirteen years since cotton exchanges between China and West Africa were missing for three of the sample years. No data was available for anterior years.
This lack of data is a major weakness of the model. Indeed, the number of observations is too small for the control tests to accurately report the quality of the model. To address this issue, the model is thus re-estimated in an expanded panel of Chinese cotton imports from the twenty-two major source countries[31]

[28] It seems coherent that stocks influence more directly imports than production since the model does not take domestic consumption and exports to the rest of the world into account. Furthermore, China has huge stocking capacities and has frequently changed its stocking policy thus influencing on global trade not only according to its own production capacities

[29] The SITC Rev.1 classification is used. Cotton is defined as category 263 and textile and apparel, respectively, as categories 65 and 84. Chinese cotton imports from West Africa contain imports only from Mali and Benin. Too much data was missing to include imports from Burkina. However, since cotton production characteristics are very similar in the three countries, the elasticity found according to Mali and Benin data may be assumed to fit Sino-Burkinabese cotton exchanges.

[30] Cotlook Limited A index is an index calculated as an "average of offer quotation by cotton agents in Northern Europe", taking into account the five less expensive prices out of fourteen origins.

[31] The panel includes all the source countries, which exports accounted for more than one million dollars in 2004, that is, Australia, Benin, Brazil, Burkina Faso, Cameroon, Chad, Cote d'Ivoire, Egypt, Greece, India, Kazakhstan, Mali, Paraguay, Spain, Sudan, Syria, Togo, Turkey, USA, Uzbekistan, Zambia and Zimbabwe.

using the above specification. The number of observations is thus multiplied by twenty-two allowing the control tests to accurately report the quality of the model. Fixed country effects are added to control for countries' specific characteristics. The Hausman test statistic confirms the appropriateness of the use of country fixed effects.

Table2: Model outcomes

Model	α	ß$_1$	ß$_2$	ß$_3$
Base	-10,8 (0,05**)	1,81 (0,00***)	- 2,65 (0,12)	-1,61 (0,01***)
Panel	-9,96 (0,1*)	1,78 (0,00***)	0,25 (0,79)	-1,74 (0,00***)

Note: Probabilities are reported in brackets: * significant at 10%, ** significant at 5%, *** significant at 1%

The base model's estimates are coherent with economic theory and with the hypothesis tested in this study: textile exports are found to have a significant positive impact on cotton imports, while the price ratio and the stocks have a significant negative impact. The effect of a 1% increase in Chinese textile exports to the EU and the US provokes a 1.81% increase in Chinese cotton imports from West Africa. The price elasticity (-2.65), though, seems to be much stronger than in most studies. However, the elasticity searched is often a pure demand/price elasticity, whereas the one captured in this model is an import/price elasticity and imports are more price elastic than consumption. Moreover, the model focuses on cotton imports from one origin only and the price ratio's estimate may therefore reflect some kind of origin substitution that does not appear when modelling total cotton imports or demand. Econometrically, the model also appears to be coherent. All the explanatory variables are significant at a 10% level, ordinary least square assumptions are respected and the explanatory power of the model is of 0.84.

Using the panel specification, the model's outcomes are very close to the results previously obtained. The panel experiment thus confirms the accuracy of the first model and allows using its results in the remaining of this paper.

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