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With Rags to Riches but Then What?

Hong Kong's T & C Industry vs. the ATC and China's WTO Accession

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Abstract

After some 30 years in existence quotas on textile and clothing (T&C) exports from developing countries are being phased out as of 31/12/04. Using a 9 sector, 24 country/region disaggregation of GTAP4, updated with quota rents from 1998/99, the impact of this UR-dictated liberalization of trade in T&C products on Hong Kong is examined. Just as important in this context is the analysis of what China's accession to the WTO means for Hong Kong and the other major T&C exporters. How will Hong Kong T&C companies react, knowing how deeply they are involved throughout Asia and into China? And what if surge clauses – sanctioned in China's WTO Protocol of Accession – are leveled against China? These and other relevant questions lead to conclusions being drawn on the future of Hong Kong's T&C industry.

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With Rags to Riches but Then What?

Hong Kong's T & C Industry vs. the ATC and China's WTO Accession

I. Introduction and Overview

If there ever was an industry which indelibly put its stamp on the economic success of Hong Kong for a long period of time, then it was the textile and clothing industry (TCI). Although the TCI is still Hong Kong's largest manufacturing industry (about 40% of manufacturing value-added and 50% of domestic exports), the manufacturing sector itself now accounts for a mere 5% of GDP as opposed to roughly 40% some 30 years ago. Unfortunately these latter figures largely misconstrue the current relevance of Hong Kong's TCI, as they fail to recognize its unique role in producing and sourcing globally from an open and relatively undistorted economy. By drawing on inputs at world market prices or producing elsewhere when new locational advantages (be they due to changes in economic policies or the availability of T&C export quotas to industrialized countries) were perceived as being spawned, the Hong Kong TCI has developed large human capital and service sector capacities. This has allowed it to flexibly and efficiently act and react globally. That it still can play in the big league is attested to by the fact that it is still the third largest exporter of clothing products (behind China and Italy – see Table 1a and 1b).

But what will happen when the rest of the MFA quotas are removed by the year 2005? And in particular, what will happen when accordingly the rents from these quotas in Hong Kong (assuming they currently do remain there), as well as from those in other countries around Asia in which Hong Kong firms have production facilities or source T&C products, disappear? Or rather, what happens to changes in trade flows and welfare if quota rents in this age of Walmarts et al are already being pocketed by the importers and not the exporters?

But no doubt even more important, what will China's accession to the WTO mean for Hong Kong's T&C industry? After all, it is estimated that over 50% of China's clothing exports today (which account for 17% of world trade in clothing products) are directly or indirectly due to the involvement of Hong Kong companies. How large will the shift of demand to China be? Which countries will be most affected? To what degree and how will the Hong Kong economy be affected? And finally, what might be the ramifications of applying the surge clauses, built into China's WTO protocol of accession (and thus gaining MFN status) as a result of the US-China bilateral agreement?

Before answering these questions in Section IV, this paper begins with a brief overview of the CGE model in Section II, followed by a description of the scenarios in Section III. Given the answers to the above-posed questions, conclusions are drawn for the Hong Kong TCI in Section V. These are further qualified with respect to possible changes in the global trade environment as well as to factors impacting on production/consumption parameters.

II. The Model – a Brief Description

The numerical model is of a multi-regional/-country nature, and the data structure is based on the version 4 Global Trade Analysis Project (GTAP) data set released in 1999 and containing 1995 data. We have made further updates to this data set to reflect quota prices in 1998/99. The theoretical structure is based on standard economic accounting and theoretical principles, incorporating effects relating to the following:

- resource allocation;
- changes in industry location as trading conditions change;
- investment effects through reallocation of capital across sectors;
- linkages between national income and demand;
- intermediate linkages between sectors (as between textiles and clothing).

As is well known, a central feature of CGE models is the input-output structure, which explicitly links industries in a value-added chain, from primary goods, to goods with intermediate processing, all the way to final goods. The links may be direct (e.g. when garment production demands textiles), or indirect via use in other sectors (e.g. when steel is required for the production of textile machines, or when services from other sectors are tapped). Links also follow from economy-wide constraints, as reflected in factor markets (e.g. labor supply or capital equipment aspects).

Trade linkages involve access to a mix of intermediate domestic and imported goods, as well as to more direct competition between domestic and imported goods. In the case of a truly open economy like Hong Kong – at least as concerns the manufacturing sector – this occurs via undistorted relative prices. In the case of all other economies it occurs via an interface between domestic and foreign products distorted by tariffs and other trade barriers.

A large and growing body of evidence suggests that indirect and economy-wide effects of trade policy changes are very important. In addition to the above-mentioned linkages, increased competition for labor and physical capital, reallocation of quota rents and - albeit not specifically carried out in this paper - exchange rate changes are mentioned as being relevant. For instance, by having to compete for labor or capital the factors of production are put to more productive use. And by being used more productively firms become more competitive internationally. On top of such effects there are spillover effects into those industries or sectors not directly affected by international linkages, e.g. the non-tradable service sectors. Such can actually be seen in the case of Hong Kong, where even the utilities and local transportation companies behave much more as if they are actually subject to true competition than in the case of the USA or Germany (Spinanger, 1997).

The tariffs used are basically those which existed as of the beginning of the Uruguay Round (UR) in 1995 and are accordingly reduced to concord with those to be in place following the completion of the UR agreements (Table 2a). They thus correctly capture what is happening in the real world, with the exception that China's tariff rates do not reflect the changes negotiated in the bilaterals. Aside from the MFA/ATC quotas (Table 2b), no other explicit non-tariff barriers are applied to manufactured products.

Since the Hong Kong economy is already very open (there are virtually no trade barriers in Hong Kong on manufactured goods), the direct impact of changes in trade measures (like tariff reductions) will be generated primarily by what happens in other economies. The numerical analysis provides the basis for a quantitatively-based assessment of qualitative adjustments in sectoral production and employment patterns that are likely to result from changes in external measures vis-à-vis Hong Kong and the rest of the world. With this analysis it is expected to be able to capture numerous aspects which have not been approached in other studies carried out to date.

In CGE models of the type applied here, the equation system is first specified and then solved for prices that equate supply and demand in all markets and satisfy the accounting identities governing economic behavior. Whereas the full GTAP4 model contains 45 countries/regions and 50 sectors, in the case of the specific demands in this paper, we decided to aggregate up

to the following 9 sectors and 24 countries/regions, all carefully concorded to the specifics and idiosyncrasies of the GTAP4 data set. Out of the 45 countries/regions those were selected which were relevant to this study. Thus, for instance in the case of Europe, we didn't feel that specifying individual countries was necessary since there is basically a common market without trade barriers.

SECTORS

1. **Natural resources** (forestry, fishing, coal, oil, gas, minerals nec);
2. **Primary products** (plant fibers, other natural fibers, other agriculture (e.g. paddy rice wheat, cereal grains, vegetables/fruits/nuts, oilseeds, sugar cane/beets, animal husbandry, animal products nec.))
3. **Textiles;**
4. **Clothing;**
5. **Leather products;**
6. **Electronic equipment and machinery;**
7. **Other manufactures** (wood prods., paper prods./publishing, petroleum/coal prods., mineral prods. nec, ferrous metals, metal prods., motor vehicles/parts, transport equip. nec, manufactures nec.);
8. **Services** (electricity, gas manufacture/distribution, water, construction, trade/transport, financial/business/recreational, public admin./defense/education/health, dwellings);
9. **Consumer goods nec.**

Countries/Regions

ASIA/PACIFIC

Hong Kong
China
Taiwan
South Korea (KOREA)
Japan
Vietnam
Thailand
Malaysia
Philippines
Singapore
Indonesia
Australia/N. Zealand (AUSNZ)
India
Sri Lanka
Rest South Asia (SOUTHASIA)

AMERICAS

Canada
United States
Mexico
Rest Latin America (LATINAM)

EUROPE

EU/EFTA(WESTEUROPE)
Central and Eastern Europe (CEA)
Turkey

AFRICA, REST OF WORLD

Africa, Middle East (AFRICAME)
Rest of World (ROW)

The above specifications are bench-marked to a baseline scenario, i.e. the social accounting matrix based on the GTAP data set from 1995. The model as such reproduces the base year economy in the absence of any policy changes. The calibration ensures that subsequent policy simulations move from an initial position that accurately describes the observed global economy, its regional constituents and its accounting identities. The model fully captures the flow of income from firms to labor and capital, from labor and capital to households, and from households back to consumer demand. Hence, it remains internally consistent even after introducing policy changes.

An important issue is the time frame covered by the analysis. By definition, we are modeling equilibrium conditions in multiple markets. This means that we are modeling the way the markets are expected to look *after* firms have adjusted their behavior to reflect changes in market conditions. Since this adjustment is a complex process, involving the shifting of resources between sectors through hiring and firing of labor, installation of new plant and equipment, and decisions not to replace old plant and equipment as it depreciates, and also involving shifts in consumer demand that follow from changing incomes and from changing relative prices, it can be expected to take roughly 5 to 7 years depending on the policy shock. In this case, the time frame to keep in mind for the whole economy is closer to 7 years, whereby for individual industries (e.g. the clothing industry) it could be considerably shorter.

III. The Scenarios

In the case of this study the policy scenarios are formulated in a way so that layer by layer the impact of greater liberalization policies can be observed. Obviously the logical final step in such an analysis of liberalization policies would be to remove all tariff and non-tariff barriers in order to get a handle on what the entire protection system is costing the Hong Kong T&C industry and thus also the Hong Kong economy as a whole now.

In essence, this would be the ultimate task for the next round of multilateral trade negotiations like those which were supposed to have been initiated at the Seattle WTO Ministerial held in November/December 1999. It would not only require an elimination of tariffs (this would be relatively easy to effect, even if it might be difficult to negotiate), but also all those barriers which exist beyond the borders, in the form of regulations, red tape and other administrative or technical barriers, all basically aimed at keeping foreign products out of domestic markets, or at least making it difficult for them to enter such markets. Unfortunately this extends beyond the terms of reference of this paper.

Thus the policies to be evaluated in the context of this paper are as follows – in essence they peel off layer for layer the impact of the T&C trade liberalization on Hong Kong's economy:

Experiment A: In the first experiment we estimate what the *impact of the Uruguay Round tariff reductions mean excluding the reduction of T&C tariffs and the elimination of T&C quotas as well as excluding the accession of China*. This is in essence answering the basic question: what would happen if the UR had decided to carry out no liberalization in the T&C sector and China did not receive MFN treatment. The amount of T&C exports involved for each of the countries is shown in Table 4.

Experiment B: In this experiment, we estimate (without any change in China's trade policy parameters) what the reduction of tariffs in the T&C sector means. The combination of A and B reflects the gains from tariff decreases in the UR without China. Table 2a contains the tariffs rates applied.

Experiment C: In this step we eliminate the MFA quotas for all textile and clothing product (without any change in China's trade policy parameters)s. This basically portrays what should

be happening after December 31st, 2004, when all quotas are to be eliminated. Table 2b contains the estimated quota rents for the years 1998/99.

Experiment D: In the next experiment, we apply only the agreed-upon UR reductions in tariffs – excepting those on T&C products and excepting the elimination of T&C quotas – that would become effective when China becomes a member of the WTO. This applies both to those tariffs in the rest of the world vis-à-vis China as well as those tariffs initially submitted to the WTO by China for the UR round. They unfortunately do not include the results of China's WTO accession, which were not available when we started the project.

Experiment E: Here the UR MFN tariffs are applied to Chinese T&C products (quotas still remain in place) as well as MFN tariffs to Chinese T&C imports from partner countries.

Experiment F: Finally, in experiment F the MFA quotas on Chinese T&C products are allowed to be eliminated as agreed upon in the ATC. Since various non-tariff barriers (e.g. two types of safeguards and the application of non-market economy status in anti-dumping cases)¹ have been incorporated into the bilateral between China and the USA concluded in November, 1998 (see: <http://www.uschina.org> for the full copy of the bilateral) and which will hence gain MFN status when included in the final Chinese WTO Protocol of Accession package, we have run a special scenario which helps to pick up possible effects of their application (see below).

Experiment G: This step encompasses the entirety of the UR agreements (i.e. experiments A through F) being applied to all countries. This is not simply the sum of the above steps given the decomposition methods applied.

Experiment H: Finally, we have designed a scenario to include information from a survey of major entrepreneurs in the Asian T&C industry about how they will be reacting to the changes resulting from China's entry to the WTO and thus to an opening of its markets. To capture their interpretation of these changing conditions, we have accordingly introduced a scenario in which we assume that there will be an emergent 10% cost advantage for firms doing business in textile and clothing production in China.² In the context of the model this simply diverts the demand for T&C products away from other countries to China.

Given the fact that the model is driven by relative prices derived from the data base, the entrepreneurs from the T&C companies interviewed (a total of 14 CEOs of key companies working out of Hong Kong were tortured by us) were simply telling us that they read an even greater shift in relative prices after China's accession to the WTO. As it turned out, the overriding opinion of those entrepreneurs interviewed early in the year 2000 (i.e. already after the conclusion of the bilateral between China and the USA) was that they will be exhibiting a greater degree of interest in increasing investments or becoming active in China beyond what could be expected based on changes in relative prices. They were particularly straightforward about stating their intentions concerning simply pulling up stakes in Southeast Asian countries

Since such views were not only expressed by entrepreneurs just operating in Hong Kong where the survey was carried out, it seemed logical to attempt to portray this as a measure

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¹ First of all, individual T&C products can be hit with special safeguards **over a 4 year period** running from 2005-2008. Second, individual products – including T&C products can be hit by safeguards **for a 12 year period** once China is a WTO member. Third, China will be considered as being a non-market economy **for a period of 15 years** after accession to the WTO. This presumes a strong likelihood of high anti-dumping margins (see forthcoming article by Messerlin et al, 2001).

² The 10% figure seemed to be a reasonable estimate based on statements by the interviewed companies in the T&C industry. If the actual percentage advantage was higher or lower the corresponding adjustments would have to be made in the results..

which would impact on the relative competitive position of firms operating in China (whereby "competitive position" means the ability of individual firms to meet market demand conditions at a competitive price).

Deleted: China's relative competitive position

This involves not only changes in external conditions, but critically, also improvement in the conditions for doing business in China – in this case specifically in the textile and clothing sectors. This includes the rules and administrative treatment of firms doing business, the underlying infrastructure, and related factors that affect the general business climate. Finally it also seemed to reflect the desire to increase ties to the mother country and to more extensively tap the extended family. In all cases it is a strategic decision, a bet that current locations will be outshone by those in China.

But we not only expect that Hong Kong companies, with production facilities throughout Asia and elsewhere, will be shifting them to China. But rather the same applies to companies merely outsourcing in other countries; i.e. they would accordingly shift their demand to China. Chances are that if individual companies do not react in this way, they will probably find themselves losing market shares in the future.

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It is also important to understand that we do not identify which firms actually take advantage of these perceived relatively improved conditions in China. It is reasonable to expect, for example, that China-based firms are in a better position to take advantage of improved conditions in China. This means that firms in other countries (like those, for example, in Turkey and Mexico) can be expected to see the changing conditions as an erosion in their own competitive position vis-à-vis Chinese firms. For firms in Hong Kong, the message is that these changing conditions represent an opportunity. If they do not take advantage of it, other firms will.

Adding it all up: The last step in the calculations – entitled "*Total*" – *merely represents the sum of G and H*. It thus portrays the overall impact of the UR agreements plus the relocation of industries into China because of perceived more competitive conditions.

The policy parameters of the model include tariffs, quotas, various domestic taxes and a number of behavioral elasticities. With the calibrated model it is then possible to simulate the effects of stipulated policy changes by comparing base year model solutions with counterfactual model solutions, in which one or more of the trade policy parameters have been changed. A comparison of the base year and counterfactual equilibrium results reveals the effects of the trade policy changes on key economic variables, e.g. imports, exports, domestic production, employment, wages and economic welfare.

Finally we have run two additional scenarios as mentioned above:

- We tested what it means if the assumption that quota rents accrue to the importers replaces the usual assumption that they accrue to exporters. This shift was relatively easily accomplished, but to the extent that reality lies somewhere in between, the respective (rough?) interpolations can be made.
- We tried to determine what it might mean if China is subjected to the above-mentioned non-tariff barriers after joining the WTO. This is indeed a critical question about whether the major importers limit T&C concessions for China. In particular, it is quite possible that the United States and/or the European Union will not find it politically possible to allow full access for Chinese T&C products. Rather, it may well be that existing quotas, when eliminated, are partially placed by one of the above mentioned safeguards. And if recourse is sought in dumping measures, the appropriate means to come up with a dumping margin has been incorporated into the protocol of accession. To attempt to assess what such new restrictions would imply, we have

applied a modified version of scenario F, wherein we only relax the T&C quota restrictions by 51%. Basically what this says is that while the first three tranches of the ATC are liberalized for China, the final tranche amounting to 49% is put on hold. This basically involves the assumption that some form of import restrictions will be applied that accordingly dampens the impact of the 49% supply response that would otherwise be realized.³

Given that these scenarios are based on an economic model, it is useful to keep some of the limitations in mind. Obviously the model cannot forecast all future events, hence unanticipated economic, political, and/or natural events (e.g. the East Asian financial crisis, the major earthquake in Taiwan, or the forced landing of a US reconnaissance in China) will occur and will have important effects on some of the agents and activities identified in the model. Furthermore, the simplifications embodied in the model represent a trade-off between keeping the model workable, and keeping it realistic enough to actually be useful in modeling the impact of changes in economic policies. Have we made the correct decisions here? And at the very micro-level, this model does not identify which individual firms will win and lose from changes in business conditions. While reasonably defined reaction parameters are included in the model, the outcome for individual firms in different countries will depend on their own response shaped by other factors. For instance, even if an entrepreneur in a South Asian country realizes that he might be better off shifting some production to China, other influences keep him from doing so. Having said this, we should emphasize that this class of models does actually do well in identifying resource, production, and trade shifts. For example, Kehoe (1996) provides a comparison of CGE model-based estimates of the impact of EU Membership on Spain with actual experience. The CGE model performed quite well, and identified effects not anticipated at the time⁴.

While the basic structure of our model and data fit within the classic GTAP structure, we have made changes in line with the configuration we feel best fits the current Hong Kong constellation. Likewise additional information and background which has been acquired during the interviews in Hong Kong, in particular new values for quota rents have been incorporated into the data base, so as to ensure that the model is correctly reflecting the real world.

IV. The Empirical Results

The empirical results of the model are best appreciated knowing how Hong Kong's T&C industries have been tracking in recent years.

- Hong Kong's *textile industry* has been underperforming – by 1998 domestic exports were almost 40% below their peak in 1991 and their share in world markets had fallen nearly 50% since their highest levels in the early 80's. Given the fact that the unit values of textile exports have probably increased more rapidly than most other countries over time, in volume terms the decline of exports is no doubt all the larger. As can be seen in Table 1b Hong Kong was the only major Asian exporter to exhibit negative growth rates throughout the 90's. Other countries, like Sri Lanka, India and Malaysia all expanded over the eight year period. With a tight labor market and property prices reaching their highest levels around the mid 90's, alternative sites for

³ Of course, it is quite possibly that China realizes the situation it is getting into and thus chooses to avoid being hit by such NTBs by restraining growth rates of T&C exports. This way it could conceivably still profit from quota rents, some of which would accordingly be funneled back to companies in Hong Kong.

⁴ For some further general background see P.J. Kehoe and T.J. Kehoe (1994) Hertel, T.W. and Tsigas, M. (1996) But also in particular T. Hertel, (2000).

capital and land-intensive textile production were sought outside of Hong Kong. Such moves were further induced by the simple fact that clothing production had been migrating out of Hong Kong as well.

- As far as Hong Kong's *clothing industry* is concerned, while it has held third place among all the clothing exporting countries throughout this decade, its growth rates were less than half of the average over the last 15 years (see Table 1a) and but one tenth the average over the decade of the 90's (Table 1b). As compared with its Asian competitors – see Table 1b – its performance reflects a similar trend as in those countries (e.g. Japan, Korea and Taiwan) growing out of the labor-intensive industries so important at the initial stage of development. But the table does injustice to the Hong Kong CI as it neither reveals how much Hong Kong companies are actually involved in other Asian countries nor how large the export service content of the TCI industry in Hong Kong is. Putting the Asian CI in a more global perspective it can be seen – focusing on the total share of exports from Asia in world trade (second to last line) – that the share in 1998 as opposed to 1990 was two percentage points lower. While this could well reflect the impact of the Asian crisis, it probably even more so reflects the shifts away from Asia and into locations on the rim of the EU or south of the USA. But here again it may well also be a question of quotas – if they are not available in Asia then it is back to the countries next door, like Mexico and Turkey. In the case of Mexico no country has grown so fast in the last 15 years – overall it grew almost 200% faster than average and over 70% faster than China.

The results of the CGE model calculations can be found summarized for Hong Kong and China as follows:

- Table 4a presents the standard scenarios as explained above, beginning with a reduction in tariffs for non-T&C products and excluding China (Scenario A) to China's imputed better competitive position in the T&C industry (Scenario H);
- Table 4b presents the results of making alternate assumptions on the distribution of quota rents between exporters and importers;
- Table 4c includes the scenario in which China does not have quotas removed from its final 49 percent of T&C exports.

Some relevant data for the other countries can be found in Tables 5-7. In this section only the key results, although more background can be provided on request..

The "pictures" of the various liberalization scenarios for the respective topics "developed" in the summary table, portray a pattern in line with economic expectations. Fortunately they neither embody any unpleasant surprises or nor do they reveal contradictory results.⁵

VI.A The Uruguay Round (excluding China)

Focusing first on the "**Changes in National Income**", the most comprehensive indicator of how the overall economy is affected by the liberalization process (i.e. how the economic welfare changed), the initial UR reduction in tariffs, **scenario A** (see Tables 4a-4c for Hong Kong and China and Table 5 for all countries/regions) induces a large increase in welfare due to lower tariff rates in other markets as well as to an increase in the demand for other

⁵ Readers should note that the trade statistics used here may not always agree with official publications. This is due to attempts made by the researchers responsible for the data base to include unrecorded transactions in the figures or adjust for flows which should be imputed to another country's trade.

manufactured export products and for services. China, on the other hand, not being able to profit from the lower UR tariff rates suffers a worsening of its competitive position and hence registers sizable welfare losses.

When in **scenario B** the tariffs are reduced on T&C products it turns out that the losses incurred in **scenario C**, namely after the elimination of T&C quotas, prove to be virtually just as large. The amount lost in this context is primarily from the drying up of quota rents which were assumed in this exercise to be accruing to Hong Kong exporters. To the extent that this is not the case (see Table 4b), i.e. if Hong Kong exporters captured no rents since the foreign buyers collected everything, this figure of -335 mill. US\$ would be US\$ 620 higher and thus equal to US\$ 285. In other words if importers are now collecting the quota rents the gains from liberalization are all the higher.. China in both of these two scenarios exhibits welfare losses because of the increased competitiveness of other countries, since China itself has yet to benefit from Uruguay Round liberalization agreements. To gauge this effect, Table 4b compares our baseline income effects with those that follow from full capture of quota rents by the importing countries. Basically, roughly \$0.62 billion in rents is at stake for Hong Kong, and \$2.7 billion for China. To the extent that some of these rents are currently lost, they then add to the welfare gains from quota elimination.

A glance at Table 5 as well as Tables 6 & 7 reveals very well what is happening in those countries which enjoyed preferential access to industrialized countries (basically regional/free trade agreements), namely Mexico, Turkey and Eastern European countries. It has always been contended that when the preferential access to North America (in the case of Mexico) and Europe (in the case of Turkey and Eastern European countries) is reduced considerably as tariffs are reduced for competing exporters and in particular when quotas are eliminated, then there will be a shift in demand away from these countries. In the case of Mexico in scenario C in Table 5 and in Table 7 the losses are (aside from China's, which did not liberalize up to this point) the highest across all countries. Turkey as well as the Eastern European countries also reveal losses for this reason. Hence, with respect to developments in and between other countries these results strongly underline how well this model captures and portrays global interactions and developments in the course of the first three liberalization scenarios.⁶

In **scenarios D, E and F**, which describe the gradual liberalization of China's trade by first applying UR tariffs, then extending these to T&C products and finally eliminating the T&C quotas, the massive impact that China will exert on trade flows becomes apparent. Its total gains from the UR **scenarios A through F** – as shown in **scenario G** – almost equals those accrued by the USA. And when China's WTO entry causes its competitive position to be perceived as being 10% better – as stipulated in **scenario H** (entitled "China" here), then the gains made by China exceed those of West Europe and North America together by roughly 100% (see Table 5).

And Hong Kong profits from these developments as well, turning losses into gains (see Table 4a, **scenarios G and H**). However, these gains do not accrue to the T&C industries, but rather to other manufacturing industries and to the service sector. It must, however be underlined that it is Hong Kong which profits far more than any other country in connection with China's opening up. And although the model is not telling us exactly where the gains in Hong Kong are coming from in connection with China, it is quite probable that the strong intermediate

⁶ As a matter of fact the model has been tested in its ability to perform ex post estimates. That is, after calibrating the model to a specific point in time it was run backwards to determine how well it could replicate past trends. It came through this test with flying colors. It might be noted in this context that the configuration of the model applied in this study (e.g. using – *inter alia* – perfect competition) has proved to be quite accurate in similar modeling exercises.

linkages of the T&C industry are contributing significantly to them in the case of the service sector.

In reviewing the same set of scenarios for textile and clothing exports and production in none of the cases where China is assumed to have a 10% improvement in competitiveness, do these industries profit. The losses are actually quite significant in this scenario (**H**) with roughly 10.5% in the case of textiles and up to 8% for clothing. In other words, the above mentioned linkage effects are indirectly being substantiated here. That is to say: Hong Kong loses to China on the "hard goods" side and gains of the "soft goods".

But what happens if China is not really allowed in the year 2005 to profit from a complete removal of T&C quotas? The corresponding scenarios in Table 4c reveal that roughly an 8% decrease in the welfare improvement is induced. Particularly hard hit were China's clothing exports and of course clothing production. However, as far as Hong Kong is concerned it profits from such restrictions, exhibiting an increase in excess of 60% for changes in national income, almost a doubling of the growth rate in clothing exports and a 10% increase in production as opposed to 2% in the normal scenario. This is because Hong Kong clothing serves as a substitute for clothing from China. When Chinese exports are restricted, part of the unserved demand is met by increased exports from Hong Kong. In terms of Diagram 1, consumers engage in substitution, in terms of product mix (Chinese vs. Hong Kong clothing) at the level of the composite good.

Deleted: clothing

V. Conclusions and Outlook for Hong Kong

The above overview of what happens to Hong Kong and in particular to its T&C industry when the ATC is fully enacted and China has become a member of the WTO in the meantime, highlights for the first time what this means in terms of changes in welfare, trade and production. While it does clearly point out how much Hong Kong would profit from a major shifting of T&C companies into China, it also raises the question about how much of these benefits will actually accrue to Hong Kong as China takes over the responsibility of selling and shipping through its own facilities. Furthermore, however, is the possible shift in the buying patterns of major retailers in the US and Europe. If they decide to do their own thing in China or even reduce purchases in the area because of closer locations, then there is a problem which is not picked up by the model. However, as noted above, the tendency to move to sources closer to the North American market or the EU market will be subject to intense pressures once the preferential treatment disappears. This of course is the natural economic reaction based on price competition. If, however, price competition is complemented by other factors like nearness, then – even with virtual reality connections (given foreseeable technologies) – it could be difficult to bridge the distances. Hence the question about what can be done to counter such natural barriers to trade. Obviously the only possible way to counter such tendencies is to move to production sites closer to the demand – and this has already been done in numerous cases.

For sure the strengths of Hong Kong's T&C industry lie quite clearly in its ability to help tap the resources of the world's largest T&C exporter, namely China. This became evident when the impact of the 10% competitive edge for China led to a noticeable improvement in Hong Kong's welfare. Hence enhancing this ability to move into China and throughout Asia with the benefits of e-commerce would seem to be a path to be followed. Of course the benefits of improving China's T&C industry also bring with it the seeds of new competitors, who might just do it on their own later on. This weakness was underlined in the results. But obviously the risk here is one which must be taken, as it is not only the T&C industry in Hong Kong which profits from China's future growth.

Bibliography

P.J. Kehoe and T.J. Kehoe (1994) A Primer on Static Applied General Equilibrium Models. Federal Reserve Bank of Minneapolis Quarterly Review, Vol. 18, No. 2, Spring.

Kehoe, T. J. (1996). Social Accounting Matrices and Applied General Equilibrium Models. Federal Reserve Bank of Minneapolis, Working Paper Number 563.

Hertel, T. W. (2000). Potential Gains from Reducing Trade Barriers in Manufacturing, Services and Agriculture, in Federal Reserve Bank of St. Louis Review, Vol. 82, No. 4, July/August.

Hertel, T.W. and M. Tsigas, (1996). "The Structure of GTAP," in T.W. Hertel, ed., *Global Trade Analysis*, Cambridge University Press, Chapter 2. .

Messerlin, P. R. Mirus, M. Morkre, B. Scholnick and D. Spinanger (forthcoming).What You Always Wanted to Know about Anti-dumping, but Feared to Ask. Kiel Working Paper, Kiel Institute of World Economics.

Spinanger, D. (1997). Corporate Strategies in Hong Kong: Model for Germany?, Kiel Working Paper # 831 [in German], Kiel Institute of World Economics.

World Trade Organization – WTO (1999). Annual Report 1999, Geneva

Table 1a — Textile^a/Clothing^b Exports of Selected ICs/DCs: 1965–98 (Shares^c/ Rankings^d/Growth Rates^e)

	1965	1973	1983	1990	1998	1965-73	1973-83	1983-90	Growth rates ^f 1990-98
Textiles and Clothing									
China	3.4 (11)	3.0 (12)	5.9 (6)	7.9 (3)	13.0 (1)	13.8	18.5	17.7	12.4
Italy	10.3 (2)	8.5 (2)	9.5 (1)	10.0 (2)	8.4 (2)	13.0	11.9	13.6	3.4
Germany	8.5 (5)	11.9 (1)	8.6 (2)	10.3 (1)	6.3 (3)	20.8	7.2	15.6	-0.6
USA	6.8 (7)	4.5 (9)	3.5 (10)	3.6 (9)	5.5 (4)	10.1	7.9	12.9	11.4
Korea, Rep. of	0.5 (23)	3.6 (11)	6.7 (3)	6.5 (4)	4.8 (5)	49.7	17.8	12.5	1.7
Taiwan	0.6 (21)	3.8 (10)	5.2 (7)	4.7 (7)	4.3 (6)	44.8	14.2	11.3	4.3
France	9.3 (3)	8.2 (4)	4.7 (8)	5.0 (6)	4.0 (7)	13.9	4.7	13.8	2.7
Belgium/Lux.	7.2 (6)	6.8 (5)	3.8 (9)	3.9 (8)	3.5 (8)	15.0	4.6	13.1	4.1
Hong Kong	4.3 (10)	5.5 (7)	6.1 (5)	5.4 (5)	3.3 (9)	19.4	11.9	10.6	-0.4
Turkey	0.0 (39)	0.5 (30)	1.6 (15)	2.2 (14)	3.2 (10)	55.4	25.8	18.0	10.5
United Kingdom	8.8 (4)	5.7 (6)	3.5 (11)	3.5 (10)	3.1 (11)	9.6	5.4	12.8	4.3
India	5.7 (8)	2.4 (13)	1.5 (17)	2.2 (15)	3.0 (12)	3.7	5.7	19.3	10.0
Mexico	0.3 (28)	0.7 (26)	0.3 (34)	0.6 (26)	2.6 (13)	31.9	2.5	23.1	26.7
Netherlands	5.3 (9)	5.1 (8)	2.6 (12)	2.4 (12)	2.1 (14)	15.2	3.4	11.6	4.0
Japan	13.7 (1)	8.4 (3)	6.5 (4)	3.0 (11)	1.9 (15)	8.9	7.9	1.0	-0.1
Pakistan	1.5 (14)	1.4 (17)	1.7 (14)	1.7 (17)	1.9 (16)	15.0	12.8	13.3	6.6
Total ^g	86.2	80.0	71.7	72.9	70.9	14.7	9.5	13.1	5.3
World^h	10.30	33.27	91.95	213.41	330.59	15.8	10.7	12.8	5.6
Textiles									
Germany	8.6 (4)	13.7 (1)	10.6 (1)	13.4 (1)	8.8 (1)	20.9	5.9	14.7	-0.7
Italy	8.2 (5)	6.9 (5)	8.3 (3)	9.0 (2)	8.6 (2)	11.6	10.6	12.4	4.0
China	3.9 (10)	3.4 (9)	5.5 (4)	6.9 (3)	8.5 (3)	12.2	14.0	14.5	7.4
Korea, Rep. of	0.3 (23)	2.0 (16)	4.8 (7)	5.8 (6)	7.5 (4)	42.1	18.7	14.1	8.0
Taiwan	0.6 (20)	2.5 (12)	3.6 (10)	5.8 (5)	7.3 (5)	36.7	12.4	19.1	7.6
USA	6.8 (8)	5.5 (8)	4.7 (8)	4.8 (9)	6.1 (6)	11.1	6.8	11.5	7.8
France	9.2 (3)	7.6 (3)	5.1 (6)	5.8 (7)	5.0 (7)	11.3	4.4	12.9	2.8
Belgium/Lux.	7.6 (6)	7.6 (4)	5.5 (5)	6.1 (4)	5.0 (8)	14.0	5.2	12.5	2.0
Japan	14.5 (1)	11.0 (2)	10.5 (2)	5.6 (8)	4.0 (9)	10.1	8.2	1.4	0.2
India	7.4 (7)	3.1 (10)	1.4 (17)	2.1 (14)	3.8 (10)	2.3	0.2	17.4	12.7
United Kingdom	9.9 (2)	6.5 (6)	3.7 (9)	4.2 (10)	3.6 (11)	8.2	2.7	12.8	2.7
Pakistan	1.9 (12)	2.0 (15)	2.6 (13)	2.5 (12)	2.9 (12)	14.6	11.5	10.6	6.2
Netherlands	5.9 (9)	5.9 (7)	3.4 (11)	2.8 (11)	2.7 (13)	13.8	2.8	8.0	4.3
Turkey	0.1 (36)	0.4 (28)	1.7 (16)	1.4 (18)	2.4 (14)	47.7	24.2	7.8	11.9
Mexico	0.3 (25)	0.6 (27)	0.2 (37)	0.7 (23)	1.3 (17)	23.7	-1.9	30.9	14.0
Hong Kong	1.8 (13)	2.0 (13)	1.9 (14)	2.1 (15)	0.9 (23)	15.6	7.9	12.3	-5.4
Total ^g	87.0	80.7	73.5	79.0	78.4	12.9	7.6	12.1	4.5
World^h	7.77	22.12	50.65	105.04	150.95	14.0	8.6	11.0	4.6
Clothing									
China	2.0 (12)	2.1 (13)	6.3 (5)	8.9 (2)	16.7 (1)	21.1	27.1	20.6	15.2
Italy	16.8 (1)	11.7 (2)	11.0 (2)	10.9 (1)	8.2 (2)	15.0	13.3	14.7	2.8
Hong Kong	12.0 (2)	12.4 (1)	11.3 (1)	8.6 (3)	5.4 (3)	20.9	13.0	10.3	0.5
USA	6.8 (6)	2.6 (12)	2.1 (9)	2.4 (12)	4.9 (4)	6.5	11.9	16.5	16.7
Germany	8.1 (5)	8.2 (4)	6.2 (6)	7.3 (4)	4.3 (5)	20.4	10.9	17.5	-0.3
Turkey	0.0 (47)	0.5 (31)	1.6 (15)	3.1 (9)	3.9 (6)	115.9	28.5	26.4	9.8
Mexico	0.1 (30)	1.0 (24)	0.5 (31)	0.5 (34)	3.7 (7)	63.7	6.2	17.1	35.3
France	9.6 (4)	9.3 (3)	4.2 (7)	4.3 (6)	3.2 (8)	19.9	5.3	15.1	2.6
United Kingdom	5.5 (8)	3.9 (8)	3.2 (8)	2.8 (10)	2.7 (9)	15.5	11.5	12.8	6.2
Korea, Rep. of	0.8 (17)	6.7 (5)	9.0 (3)	7.3 (5)	2.6 (10)	56.6	17.3	11.4	-6.4
India	0.5 (22)	0.9 (25)	1.6 (13)	2.3 (13)	2.4 (11)	29.7	20.8	21.1	7.1
Belgium/Lux.	5.8 (7)	5.1 (7)	1.8 (10)	1.8 (15)	2.3 (12)	18.5	2.6	15.2	9.2
Taiwan	0.8 (18)	6.4 (6)	7.2 (4)	3.7 (7)	1.8 (15)	56.4	15.5	4.2	-2.8
Netherlands	3.5 (9)	3.7 (9)	1.6 (12)	2.0 (14)	1.6 (17)	40.6	5.1	18.4	3.5
Pakistan	0.1 (32)	0.2 (39)	0.6 (26)	0.9 (23)	1.0 (26)	31.8	29.6	23.8	7.7
Japan	11.3 (3)	3.3 (10)	1.6 (14)	0.5 (34)	0.2 (49)	3.2	6.0	-2.1	-4.0
Total ^g	83.7	78.0	69.8	67.3	64.9	19.3	12.7	14.2	6.0
World^h	2.53	11.15	41.30	108.37	179.64	20.4	14.0	14.8	6.5

^aSITC 65, Rev. 2. – ^bSITC 84, Rev. 2. – ^cAverage annual growth rate (%) – ^dShare of world trade. – ^eRanking based on values in 1998; covering all available textile and clothing exporting countries; country selection for the table dictated by top 16 countries exporting T&C products in 1998; ranking in given year in (). – ^fAverage annual growth rate. – ^gBold typed numbers designate an above world average growth rate. – ^hSum of shares of listed countries. – ⁱIn bill. US\$.

Source: Own calculations based on UNCTAD tabulations and WTO, Annual Report 1999 (1999: Tab. IV.73 and IV.81)

Table 1b — Textile^a/Clothing^b Exports of Asian Countries 1990–98 (Shares^c/Rankings^d/Growth Rates^e)

	1990	1994	1998	1990-94	1994-98	1990-98	Growth rates ^f
Textiles and Clothing							
China	7.91	(3)	13.13	(1)	12.97	(1)	20.46
Korea Rep.	6.54	(4)	6.04	(4)	4.82	(5)	4.03
Taiwan	4.74	(7)	5.06	(5)	4.29	(6)	7.89
<i>Hong Kong</i>	5.36	(5)	4.21	(7)	3.34	(9)	-0.08
India	2.21	(15)	2.78	(11)	3.04	(12)	12.45
Japan	3.01	(11)	2.72	(12)	1.93	(15)	3.46
Pakistan	1.72	(17)	2.06	(16)	1.86	(16)	10.91
Thailand	1.75	(16)	2.27	(14)	1.62	(17)	13.23
Indonesia	1.35	(20)	2.11	(15)	1.51	(19)	18.56
Malaysia	0.78	(24)	1.07	(20)	1.03	(22)	15.02
Bangladesh	0.42	(38)	0.67	(29)	1.03	(23)	19.57
Philippines	0.87	(23)	0.89	(24)	0.81	(27)	6.56
Sri Lanka	0.31	(43)	0.59	(32)	0.77	(29)	24.77
Macau	0.58	(27)	0.50	(34)	0.55	(35)	2.25
Mauritius	0.30	(44)	0.29	(45)	0.27	(44)	5.58
Singapore	0.53	(30)	0.34	(41)	0.19	(51)	-5.01
Total ^g	38.39		44.75		40.03		10.27
World^h	213.41		270.65		330.59		5.12
Textiles							
China	6.87	(3)	9.07	(2)	8.49	(3)	13.11
Korea Rep.	5.78	(6)	8.21	(4)	7.47	(4)	15.18
Taiwan	5.83	(5)	7.88	(5)	7.30	(5)	13.75
Japan	5.58	(8)	5.21	(7)	3.96	(9)	3.72
India	2.08	(14)	2.94	(12)	3.76	(10)	15.12
Pakistan	2.54	(12)	3.06	(11)	2.85	(12)	10.60
Indonesia	1.18	(20)	1.92	(14)	1.56	(16)	19.11
Thailand	0.88	(21)	1.26	(20)	1.20	(21)	15.42
<i>Hong Kong</i>	2.07	(15)	1.49	(18)	0.92	(23)	-2.70
Malaysia	0.33	(30)	0.64	(25)	0.73	(26)	24.76
Bangladesh	0.29	(31)	0.28	(34)	0.33	(33)	4.38
Philippines	0.13	(48)	0.17	(42)	0.16	(44)	13.62
Sri Lanka	0.02	(56)	0.10	(54)	0.16	(45)	51.87
Singapore	0.13	(44)	0.19	(41)	0.14	(46)	15.16
Macau	0.13	(45)	0.12	(47)	0.12	(49)	3.98
Mauritius	0.01	(58)	0.04	(58)	0.00	(60)	44.97
Total ^g	33.85		42.58		39.14		11.75
World^h	105.04		130.24		150.95		5.52
Clothing							
China	8.92	(2)	16.90	(1)	16.73	(1)	25.18
<i>Hong Kong</i>	8.55	(3)	6.74	(3)	5.38	(3)	0.50
Korea Rep.	7.27	(5)	4.03	(5)	2.59	(10)	-7.97
India	2.33	(13)	2.64	(11)	2.44	(11)	9.98
Thailand	2.60	(11)	3.21	(9)	1.98	(13)	12.47
Taiwan	3.68	(7)	2.45	(12)	1.76	(15)	-3.59
Bangladesh	0.54	(35)	1.04	(26)	1.61	(16)	25.62
Indonesia	1.52	(18)	2.28	(14)	1.46	(18)	18.14
Philippines	1.60	(16)	1.56	(16)	1.36	(20)	5.97
Malaysia	1.21	(19)	1.47	(18)	1.28	(22)	12.02
Sri Lanka	0.59	(31)	1.05	(25)	1.28	(23)	23.29
Pakistan	0.94	(23)	1.12	(23)	1.02	(26)	11.69
Macau	1.03	(22)	0.86	(27)	0.91	(31)	2.03
Mauritius	0.57	(32)	0.52	(35)	0.49	(35)	4.25
Singapore	0.92	(24)	0.48	(37)	0.24	(48)	-9.18
Japan	0.52	(36)	0.41	(42)	0.23	(49)	0.70
Total ^g	42.79		46.76		40.77		9.09
World^h	108.37		140.41		179.64		6.69
6.35							

^aSITC 65, Rev. 2. – ^bSITC 84, Rev. 2. – ^cAverage annual growth rate (%) ^dShare of world trade. – ^eRanking based on values in 1998; covering all available Asian textile and clothing exporting countries; country selection for the table dictated by top 16 countries exporting T&C products in 1998; ranking in given year in (). – ^fAverage annual growth rate. – ^gBold typed numbers designate an above world average growth rate. – ^hSum of shares of listed countries. – ⁱIn bill. US\$.

Source: Own calculations based on UNCTAD tabulations and WTO, Annual Report 1999 (1999: Tab. IV.73 and IV.81)

Table 2a — Base (1995) Tariff Rates

Country/Region	Primary	Textiles	Clothing	Leather products	Electrical machinery	Other manu-factures
1 AUSNZ	0,77	15,00	7,55	15,11	6,93	7,49
2 JAPAN	19,66	3,37	6,36	8,74	0,41	8,20
3 KOREA	14,06	6,62	7,40	5,44	7,37	7,54
4 INDONESIA	16,68	24,35	30,56	7,03	12,53	10,06
5 MALAYSIA	24,99	14,57	18,11	14,06	6,01	11,21
6 PHILIPPINES	15,97	15,33	23,03	16,67	17,65	17,70
7 SINGAPORE	3,67	0,12	4,39	0,96	0,00	3,24
8 THAILAND	24,16	37,76	42,31	30,91	24,75	27,25
9 VIETNAM	3,35	22,12	31,59	14,65	4,27	18,39
10 CHINA	5,12	36,51	43,23	24,49	17,31	21,56
11 HONGKONG	0,00	0,00	0,00	0,00	0,00	0,00
12 TAIWAN	21,92	6,17	1,70	3,91	3,15	5,59
13 INDIA	7,84	37,56	38,99	36,51	33,06	35,59
14 SRI LANKA	13,63	32,34	32,45	22,51	11,52	15,44
15 SOUTHASIA	31,05	48,66	50,00	50,00	42,42	42,21
16 CANADA	2,99	5,88	16,93	10,69	0,95	1,46
17 USA	1,09	6,74	10,58	7,42	1,84	2,41
18 MEXICO	-0,39	3,37	2,54	5,84	3,04	2,46
19 LATINAM	5,95	12,42	18,11	14,20	11,18	10,52
20 WESTEUROPE	2,86	1,57	5,13	2,59	1,31	1,84
21 CEA	3,00	7,85	8,57	7,87	6,02	9,01
22 TURKEY	5,45	7,05	8,71	6,74	4,66	6,88
23 AFRICAME	-1,89	9,50	16,76	13,63	2,88	2,97
24 ROW	10,76	31,90	14,55	20,57	7,90	16,19
Global average	7,36	12,00	8,34	7,65	4,39	5,48

Source: GTAP 4 on sectors (1999: 5), and Francois and Strutt (1999).

Table 2b — Quota Rents (Mill. US\$) and Quota Wedges (%) – 1998/99

	Textile Imports to the US rents		Clothing Imports to the US rents		Textile Imports to the EU rents		Clothing Imports to the EU rents	
		wedge		wedge		wedge		wedge
1 AUSNZ	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
2 JAPAN	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
3 KOREA	18,2	2,4	31,9	1,9	11,2	1,6	3,3	0,6
4 INDONESIA	10,8	8,1	94,7	7,8	47,0	6,3	78,1	6,0
5 MALAYSIA	5,2	8,1	53,7	7,8	10,5	6,3	27,4	6,0
6 PHILIPPINES	3,7	6,5	123,1	7,8	3,2	5,7	21,2	6,0
7 SINGAPORE	0,0	0,0	2,7	0,6	0,1	0,2	0,3	0,2
8 THAILAND	17,1	8,3	151,4	13,2	25,5	6,4	60,9	7,8
9 VIETNAM	0,0	6,9	1,3	7,1	1,5	7,5	28,5	7,2
10 CHINA	202,1	20,0	1302,7	33,0	190,5	12,0	1020,8	15,0
11 HONGKONG	1,9	1,0	457,1	10,0	0,4	1,0	161,2	5,0
12 TAIWAN	14,9	2,2	164,5	7,5	30,7	6,9	25,1	5,9
13 INDIA	62,0	9,8	450,2	34,2	210,9	12,0	340,4	15,2
14 SRILANKA	8,0	15,3	76,2	8,1	2,8	5,5	36,7	6,4
15 SOUTHASIA	64,2	15,3	152,7	8,1	110,3	8,4	147,0	7,3
16 CANADA	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
17 USA	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
18 MEXICO	0,9	0,1	0,3	0,0	0,1	0,1	0,9	4,7
19 LATINAM	32,7	7,2	329,6	5,3	15,2	3,1	13,5	5,2
20 WESTEUROPE	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
21 CEA	5,9	6,9	12,2	5,0	0,0	0,0	4,3	0,1
22 TURKEY	12,7	7,0	28,5	4,9	20,1	1,5	0,0	0,0
23 AFRICAME	1,5	0,5	8,8	0,6	5,3	0,3	1,5	0,0
24 ROW	0,1	0,1	36,0	3,0	0,0	0,0	0,1	0,0
Total	259,9		2393,5		683,3		259,9	

Source: GTAP (1999) data base and own calculations.

Table 3a — Base Data for the Modelling Scenarios (1995 Values)

Country/Region	Exports (Mil. US\$)	
	Textiles	Clothing
1 AUSNZ	977.7	288.5
2 JAPAN	8455.6	584.7
3 KOREA	13087.3	4595.1
4 INDONESIA	2856.7	3029.3
5 MALAYSIA	1377.3	2354.8
6 PHILIPPINES	238.5	5772.4
7 SINGAPORE	955.6	761.9
8 THAILAND	2091.5	3823.2
9 VIETNAM	146.7	744.3
10 CHINA	12850.6	27627.4
11 HONG KONG	1816	12464.8
12 TAIWAN	12793.1	2535.6
13 INDIA	4226.7	4401.2
14 SRILANKA	129.5	1306.9
15 SOUTHASIA	4415.9	3565.1
16 CANADA	1636.1	1005.7
17 USA	8504.6	6438.9
18 MEXICO	1423.6	2645.7
19 LATINAM	2639.3	5219.3
20 WESTEUROPE	64454.2	44048.5
21 CEA	3012.9	7001.4
22 TURKEY	2315.5	5837.4
23 AFRICAME	2994.9	8017.5
24 ROW	1745.7	4662.9
Total	155145.5	158732.4

NOTE: Most West European trade is intra-Europe.

Source: GTAP data base.

Table 4a — Effects of Liberalization Scenarios for China and Hong Kong

	Type of scenario								
	A	B	C	D	E	F	G	H	TOTAL
Changes in National Income (millions of 1995 US\$)									
China	-8 200	-2 588	-4 803	24 692	3 944	13 911	18 340	104 479	122 819
Hong Kong	1 916	348	-335	-197	-305	-1 706	-1 015	4 321	3 306
% Changes in Total Exports (volume)									
China	-0.45	-0.15	-0.16	1.15	0.23	3.75	2.18	9.67	11.85
Hong Kong	0.18	0.05	2.15	-0.05	-0.05	-0.50	1.68	1.20	2.88
% Changes in Textile Exports (volume)									
China	0.49	-4.69	2.64	-5.75	10.99	5.45	7.40	44.83	52.24
Hong Kong	-1.82	5.55	-0.87	-0.32	-1.10	4.60	5.24	-9.27	-4.04
% Changes in Clothing Exports (volume)									
China	2.29	-2.90	-5.20	-8.46	4.07	55.48	33.28	119.68	152.96
Hong Kong	-1.60	0.51	30.49	-1.07	-0.93	-8.48	15.54	-4.69	10.85
% Changes in Textile Production (volume)									
China	0.78	-1.56	0.01	-3.77	3.12	8.49	5.63	43.37	49.00
Hong Kong	-1.31	1.36	6.67	-0.12	-0.51	-0.44	4.37	-10.81	-6.44
% Changes in Clothing Production (volume)									
China	1.69	-2.17	-3.29	-6.17	2.96	36.09	21.20	94.78	115.98
Hong Kong	-1.47	0.49	24.70	-0.44	-0.72	-6.38	12.72	-10.63	2.09

Source: Own calculations based on GTAP model.

Table 4b — Comparison of the Income Effects Depending on Quota Rent Allocations: Changes in National Income (millions of dollars)

	A	B	C	D	E	F	G	H	TOTAL
<i>quota rents captured by exporters</i>									
China	-8199.7	-2588.5	-4802.8	24692.0	3943.5	13911.4	18340.0	104479	122819
Hong Kong	1915.6	348.3	-335.2	-196.8	-304.6	-1706.0	-1014.8	4321	3306
<i>quota rents captured by importers</i>									
China	-8199.7	-2588.5	-4802.8	24692.0	3943.5	16627.5	21056.0	107295	125535
Hong Kong	1915.6	348.3	285.4	-423.8	-316.0	-1085.4	-394.2	4943	3927

Source: See Table 5a.

Table 4c — Effects of Only a 51% Liberalization of China's Quotas on China and Hongkong^a

	Type of scenario								
	A	B	C	D	E	F	G	H	TOTAL
Changes in National Income (mills. of dollars)									
China	-8 200	-2 588	-4 803	24 692	3 944	7 456	13 007	100 208	113 216
Hong Kong	1 916	348	-335	-197	-305	-721	331	4 896	5 227
% Changes in Total Exports (volume)									
China	-0.45	-0.15	-0.16	1.15	0.23	1.54	0.99	8.50	9.49
Hong Kong	0.18	0.05	2.15	-0.05	-0.05	-0.21	1.99	1.40	3.40
% Changes in Textile Exports (volume)									
China	0.49	-4.69	2.64	-5.75	10.99	2.84	5.16	46.95	52.11
Hong Kong	-1.82	5.55	-0.87	-0.32	-1.10	1.84	3.15	-9.83	-6.68
% Changes in Clothing Exports (volume)									
China	2.29	-2.90	-5.20	-8.46	4.07	22.42	8.38	125.48	133.85
Hong Kong	-1.60	0.51	30.49	-1.07	-0.93	-3.64	21.90	-1.39	20.50
% Changes in Textile Production (volume)									
China	0.78	-1.56	0.01	-3.77	3.12	3.47	1.68	42.31	43.99
Hong Kong	-1.31	1.36	6.67	-0.12	-0.51	-0.23	5.25	-10.39	-5.14
% Changes in Clothing Production (volume)									
China	1.69	-2.17	-3.29	-6.17	2.96	14.31	4.79	95.51	100.30
Hong Kong	-1.47	0.49	24.70	-0.44	-0.72	-2.77	17.88	-7.80	10.08

^a Beginning with scenario F (Quota Liberalization) the results differ from Table 5a.

Source: Own calculations based on GTAP Model.

Table 5 — Change in Economic Welfare by Scenario (Mills. 1995 US\$)

Country/Region	Type of scenario								
	ura	urb	urc	urd	ure	urf	urg	China	Total
AUSNZ	12202.64	231.94	90.77	-633.95	5.23	39.74	12029.48	1407.25	13436.73
JAPAN	2034.25	251.41	-467.21	-2018.35	-115.28	10.41	-58.88	2415.47	2356.59
KOREA	2532.78	895.36	-281.05	-432.78	-256.45	39.59	2414.76	-109.30	2305.46
INDONESIA	-822.96	1407.80	144.03	-105.88	-119.79	-311.75	473.70	-528.63	-54.93
MALAYSIA	1651.33	7.23	-432.68	-392.70	-13.71	-191.39	907.55	169.73	1077.28
PHILIPPINES	1786.16	-110.83	-419.20	-230.69	-136.39	-1450.84	-652.28	-417.18	-1069.46
SINGAPORE	4717.64	238.62	-243.90	-570.96	-54.82	-79.37	4169.58	451.81	4621.39
THAILAND	-8516.34	2570.47	719.86	-2511.17	169.37	-348.31	-5354.59	-465.58	-5820.17
VIETNAM	2602.15	47.12	171.57	-77.29	-10.41	-82.91	2611.63	-53.37	2558.26
CHINA	-8199.67	-2588.46	-4802.78	24691.97	3943.55	13911.41	18339.96	104478.72	122818.68
HONG KONG	1915.63	348.33	-335.18	-196.75	-304.58	-1705.95	-1014.82	4320.73	3305.91
TAIWAN	2114.47	538.17	-244.64	200.90	-14.52	557.12	2668.87	371.53	3040.40
INDIA	295.24	785.25	8843.70	-636.76	-462.07	-2067.68	6836.70	-2348.53	4488.17
SRILANKA	461.49	1873.12	311.60	-39.49	491.53	-452.38	2162.46	-22.20	2140.26
SOUTHASIA	-402.32	4906.01	2145.42	-13114.17	1667.31	-1634.12	7338.95	-677.18	6661.77
CANADA	-937.14	426.03	4175.35	-666.16	193.83	6526.84	6981.66	3458.68	10440.34
USA	1046.20	1972.75	16252.08	-4336.02	-76.65	6457.05	20805.62	7118.14	27923.76
MEXICO	-468.69	-86.64	-1134.52	-77.98	-22.25	-394.99	-2144.20	-228.32	-2372.52
LATINAM	27373.01	96.16	-669.43	-854.58	-49.81	-634.04	25539.76	1136.71	26676.47
WESTEUROPE	15336.61	1241.55	4841.51	-4123.74	-172.07	4093.96	22686.78	7391.52	30078.30
CEA	1942.53	63.15	-598.64	-156.70	-94.86	-391.17	612.62	-92.36	520.26
TURKEY	862.13	209.32	-808.95	-66.41	-105.59	-406.71	-473.60	-610.36	-1083.96
AFRICAME	18260.53	802.70	732.87	-2130.75	150.48	-458.33	17736.44	4417.20	22153.64
ROW	7703.18	865.21	-942.53	-584.92	106.76	-377.59	6744.55	1361.96	8106.51

Run: EV

Source: Own calculations based on GTAP model.

Table 6 — Changes in Textile Exports in the Various Scenarios - Value Terms(%)

Country/Region	Type of scenario								
	ura	urb	urc	urd	ure	urf	urg	China	Total
AUSNZ	-5.86	1.91	-0.08	0.56	-0.67	2.30	-2.94	-8.03	-10.97
JAPAN	-0.13	3.15	1.30	0.33	-0.79	3.03	5.67	-8.11	-2.43
KOREA	-1.01	4.72	3.20	0.21	-1.11	1.42	6.66	-6.96	-0.30
INDONESIA	0.24	9.05	6.27	0.37	-0.96	-0.66	14.33	-6.60	7.73
MALAYSIA	-1.02	2.04	6.34	0.52	-0.91	-0.34	5.84	-6.86	-1.02
PHILIPPINES	3.76	2.34	6.77	0.16	-0.97	-0.69	11.50	-4.57	6.94
SINGAPORE	-4.25	8.84	4.36	0.60	-2.87	-0.45	5.79	-7.15	-1.36
THAILAND	9.30	4.71	5.82	1.69	-0.66	-0.15	20.01	-6.68	13.33
VIETNAM	-6.72	3.05	-0.25	0.67	-0.39	-0.57	-1.53	-7.31	-8.83
CHINA	0.39	-4.82	2.56	-4.33	11.22	3.76	6.67	29.82	36.49
HONG KONG	-1.28	5.60	-0.20	-0.23	-1.13	4.51	6.25	-9.40	-3.15
TAIWAN	-1.11	4.67	2.88	0.19	-0.31	4.33	8.57	-9.43	-0.86
INDIA	3.62	0.93	5.46	0.56	-1.91	-0.66	9.89	-3.93	5.96
SRILANKA	-1.01	8.06	11.20	0.11	0.41	-0.62	17.19	-3.58	13.61
SOUTHASIA	16.25	9.54	4.85	6.38	2.22	0.28	33.63	-3.93	29.70
CANADA	0.37	-0.05	-4.00	0.10	-0.13	-0.60	-4.97	-3.33	-8.30
USA	0.03	1.19	-0.74	0.30	-1.13	-2.36	-1.85	-5.62	-7.47
MEXICO	0.74	-1.89	-2.95	0.18	-0.42	-1.96	-6.32	-3.74	-10.06
LATINAM	-2.51	3.14	3.27	0.19	-0.21	-0.20	3.19	-3.69	-0.50
WESTEUROPE	-0.33	-0.06	-1.79	0.08	-0.46	-0.96	-3.62	-3.77	-7.39
CEA	-0.49	1.60	-1.49	0.02	-0.63	-1.11	-2.02	-3.36	-5.38
TURKEY	-0.29	2.90	1.99	0.02	-0.53	-0.95	3.24	-3.04	0.20
AFRICAME	-2.20	2.71	-1.56	0.25	-0.62	-1.22	-2.82	-4.01	-6.83
ROW	-1.14	2.85	-1.17	0.15	-0.50	-0.01	-0.20	-5.29	-5.49

Run: vxwfob[TEXTILES*]

Source: Own calculations based on GTAP model.

Table 7 — Changes in Clothing Exports in Various Scenarios Value Terms(%)

Country/Region	Type of scenario								
	ura	urb	urc	urd	ure	urf	urg	China	Total
AUSNZ	-10.19	6.65	-6.33	3.28	0.88	-1.72	-7.89	-18.59	-26.48
JAPAN	0.66	6.37	-5.10	2.64	-1.19	-2.00	-0.46	-21.06	-21.52
KOREA	-1.21	-1.28	-8.04	1.27	-0.59	-5.20	-14.08	-8.28	-22.37
INDONESIA	0.62	21.25	14.91	0.83	-0.37	-4.60	31.72	-10.21	21.51
MALAYSIA	-3.15	-0.44	19.57	0.66	-0.68	-6.93	5.92	-8.87	-2.94
PHILIPPINES	-2.32	-0.41	15.90	-0.43	-0.59	-7.37	3.03	-3.77	-0.74
SINGAPORE	-1.81	2.79	-16.13	-0.18	-0.95	-7.36	-22.02	-2.60	-24.62
THAILAND	3.65	17.65	18.56	2.93	-0.40	-3.46	36.01	-11.33	24.67
VIETNAM	-12.85	1.75	15.90	1.72	-0.15	-1.93	1.91	-7.07	-5.17
CHINA	2.20	-3.04	-5.28	-7.15	4.28	45.77	26.97	94.74	121.72
HONG KONG	-1.22	0.49	22.56	-0.90	-0.96	-8.56	8.87	-6.10	2.78
TAIWAN	-2.17	0.77	13.17	0.63	-1.02	-8.26	1.23	-12.57	-11.34
INDIA	9.42	3.30	112.16	2.09	-1.74	-11.28	108.69	-11.69	97.00
SRILANKA	-1.63	33.95	16.58	-0.20	10.62	-6.55	50.34	-2.35	47.99
SOUTHASIA	42.37	13.85	16.48	14.45	6.17	-6.51	76.65	-4.75	71.90
CANADA	1.21	2.96	-22.43	0.22	0.84	0.45	-21.59	-5.79	-27.38
USA	1.15	8.26	-0.30	1.62	-0.59	-0.73	10.75	-8.77	1.98
MEXICO	0.84	-1.62	-25.58	0.30	-0.60	-8.42	-33.71	-10.92	-44.63
LATINAM	-8.57	-1.08	3.28	0.30	-0.62	-8.22	-15.48	-10.42	-25.90
WESTEUROPE	-0.42	-1.06	-5.59	0.69	-0.91	-2.93	-11.23	-9.74	-20.97
CEA	-1.31	-0.25	-5.68	0.14	-0.74	-3.98	-12.94	-8.21	-21.15
TURKEY	-0.64	0.27	-5.21	0.15	-0.68	-3.61	-10.70	-6.29	-16.98
AFRICAME	-3.56	-0.28	-9.17	0.58	-0.46	-4.96	-18.89	-7.25	-26.14
ROW	-2.13	1.57	-11.21	0.33	-0.51	-5.30	-17.39	-9.96	-27.35

Run: vxwfob[CLOTHING*]

Source: Own calculations based on GTAP model.