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INTERNATIONALES

No 2006 – 15
October

# Economic Integration in Asia: Bilateral Free Trade Agreements Versus Asian Single Market

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## ECONOMIC INTEGRATION IN ASIA


### SUMMARY

Institutional regionalisation has come late to East Asia compared to Europe, but its pace has accelerated since the mid-1990s. Many agreements, including bilateral ones such as those signed between Singapore and Japan, and plurilateral ones such as those between ASEAN countries (e.g. ASEAN Free Trade Agreement (AFTA below)), cover an ever-increasing portion of the East Asian region, including China. Since its accession to the WTO, China has been a major engine of regional integration both in terms of the expansion of trade and of its institutional framework. Even India, with its "look East" policy, is entering the game.

This report analyses the characteristics of regional economic integration in East Asia and explores the possible consequences for the rest of the world and notably for the European Union of the creation of an extended Free Trade Zone including the ASEAN-10, Japan, China, South Korea and India. We rely on CEPII'S CGE model (MIRAGE).

Four different scenarios of economic integration in Asia are simulated. As regards the geometry of the agreement(s) two sets of scenarios are considered, following a Hub-and-Spoke versus a Full-FTA assumption. In each case, two scenarios are considered with or without sensitive products inclusion. In other words, we consider two modes of integration: one around ASEAN made of bilateral agreements with the four partners, the other one being a full regional agreement; and two levels of liberalisation: one with full liberalisation, the other one excluding the sensitive products. Scenario 1 (SC1 hereafter) combines bilateralism with full liberalisation, SC2 considers full regional integration with full regional liberalisation, SC3 is similar to SC1 but it excludes the sensitive products, SC4 is similar to SC2 but excludes sensitive products.

Agriculture is a central problem, but there is an almost general consensus within the region that agriculture should be treated apart. For many ASEAN countries, notably for the new members, agriculture still represents a major source of employment for many poor people. It is also true for the rest of Asia, Japan excluded. But we show that it would be in the interest of ASEAN-10 to include agriculture in the agreement.

It is clearly in ASEAN-10 interest to have separate bilateral negotiations within the region and to include agricultural products (SC1): it will give ASEAN easier access to its main natural partners and -as it is not directly in competition with them- this will bring the largest benefits to ASEAN. South-East Asia is specialised in agricultural and food production, which are in short supply elsewhere, and ASEAN is potentially very competitive.

By contrast, Korea has the largest interest to negotiate a global agreement (this is also the Korean President's position), but excluding sensitive products (SC4). Japan in any case is a winner even and especially if the FTA includes a liberalisation of agriculture. The best scenario for Japan is by far SC2. China is leading the regionalisation process for political as

well as economic reasons. For political reasons: it wants to become a leader of Emerging Asia. For economic and strategic reasons: China needs to secure its vital supplies of raw materials. Being a late comer in WTO, it had to engage in a radical reshuffling of its customs tariffs which are the lowest among Asian developing countries, so it gives China large room for manoeuvre. The best scenario for China is SC1. For India, the major problem is to quit its traditional protectionist policy. So the shock could be devastating in social terms. Therefore it is probably reasonable to think of a much more gradual involvement of India in a process of liberalisation. A global agreement with limitations for sensitive products (SC4) would be the best from an economic and social point of view but from a purely economic point of view SC2 is better. In the end we see that ASEAN-10+4 countries have diverging interests.

For the **EU-25** the consequences of Asian integration are limited: almost nil in terms of welfare. But considering the EU-25 position as already very weak in terms of market shares, it will even become weaker in Asia. The most difficult part of a deal for the EU-25 would be the agricultural issue with the ASEAN. Progress made at the multilateral level would greatly improve the EU's position. For the EU-25, it appears that increased competition within Asia has a negative impact on its goods exports but positive impact on its services exportations. The preferred scenario for the EU-25 would be the SC3, i.e. bilateral agreements within Asia excluding sensitive products. The worst would be SC2.

The United States has different interests: their favourite scenario should be SC4: a multilateral East Asian scenario but excluding sensitive products. Because the US is a producer of primary products, it is better for it to keep market access on an equal footing with Asian producers. The rest of the world is rather close to European positions on SC3.

The main losers are the close countries and primary goods producers such as Taiwan, South Asia (excluding India), North of Africa, South America.

## ABSTRACT

Institutional regionalisation has come late to East Asia compared to Europe, but its pace has accelerated since the mid-1990s. Many agreements, including bilateral ones such as those signed between Singapore and Japan, and plurilateral ones such as those between ASEAN countries (e.g. ASEAN Free Trade Agreement (AFTA below)), cover an ever-increasing portion of the East Asian region, including China. We first analyse regional economic integration in East Asia, questioning the notion of open regionalism. In a second part we explore the possible consequences of different kind of agreements. We rely on the CEPII's CGE model (MIRAGE), adapted to the specificity of Asia's economic integration. As regards the geometry of the agreement(s), two sets of scenarios are considered, following a Hub-and-Spoke versus a Full-FTA assumption, with or without sensitive products inclusion.

Among the main results, we find that Asian countries do have diverging interests. While ASEAN maximises its benefit in the bilateral scenario including agricultural liberalisation (SC1); Japan and Korea are the best in the Asia global agreement scenario, including sensitive products for Japan (SC2) but excluding these products for Korea (SC 4). For EU-25, it appears that increased competition within Asia has a negative impact on its goods exports but positive impact on its service exportations. The main losers are the close countries and primary goods producers such as Taiwan, South Asia (excluding India), North of Africa, South America.

*JEL Classification:* D58, F15, N85.
*Key words:* Computable general Equilibrium Models, Economic Integration, Asia, Trade Simulation.

**L'INTEGRATION ECONOMIQUE EN ASIE**

## RESUME

La création d'institutions régionales est venue tard en Asie comparée à l'Europe, mais leur rythme s'est accéléré depuis le milieu des années quatre-vingt dix. De nombreux accords, bilatéraux comme ceux qui sont intervenus entre le Japon et Singapour, ou plurilatéraux tels que ceux qui concernent les pays membres de l'ANSEA, couvrent une part croissante de l'Asie orientale, y compris la Chine. En effet, depuis son admission à l'OMC, la Chine a été un élément moteur de l'intégration régionale tant par l'accroissement de son commerce que par sa propension à négocier des accords commerciaux. Même les pays d'Asie du Sud, et en premier lieu l'Inde, se lancent à leur tour dans le jeu.

L'Asie étant la région économique la plus dynamique du monde, on peut se demander quel est son intérêt à suivre le mouvement du régionalisme. En réalité les crises successives qui ont frappé cette zone, depuis la crise financière de 1997-1998, l'épidémie de SARS, le Tsunami ou encore l'épidémie de grippe aviaire, ont fait apparaître un manque crucial de co-opération entre les pays de la zone, soulignant en outre leur dépendance à l'égard de l'Occident.

Nous analysons les caractéristiques de l'intégration régionale en Asie et explorons les conséquences possibles de la création d'une zone de libre échange étendue à l'ANSEA-10 plus 4 (Chine, Inde, Japon, Corée du Sud) sur les pays d'Asie eux-mêmes et sur le reste du monde. Cette étude utilise le modèle d'équilibre général calculable du CEPII (MIRAGE).

Quatre scénarios sont simulés: selon qu'il s'agit d'accords bilatéraux entre l'ANSEA et les quatre autres pays d'Asie ou d'un seul accord général englobant toute la zone, d'une part, selon que l'on intègre ou non les produits sensibles, d'autre part.

Les conclusions générales de l'étude montrent que l'agriculture reste une question centrale. Elle est la source d'environ la moitié de tous les impacts attendus, mais les pays d'Asie ont tendance à vouloir mettre à part ce secteur, car il représente encore une part très importante de l'emploi et parce que les groupes de pression sont puissants comme au Japon. Mais on montre que cela serait pourtant le plus important pour l'ANSEA de l'intégrer aux accords.

C'est aussi l'intérêt de l'ANSEA de privilégier les accords bilatéraux aux accords globaux car dans le premier cas, l'ANSEA bénéfice d'un accès aux marchés des partenaires asiatiques sans avoir à affronter la concurrence des tiers: par exemple, un accord avec le Japon sans qu'il y ait d'accord Japon-Chine favorise l'ANSEA. Par ailleurs, l'avantage comparatif de l'ANSEA étant très fort sur le secteur agroalimentaire, c'est sous les hypothèses d'un accord bilatéral intégrant les produits sensibles du scénario 1 (que l'on désignera par la suite par SC1) qu'il maximise ses gains.

La Corée a, au contraire, un très fort intérêt pour un accord global excluant les produits sensibles (SC4). Le Japon apparaît comme un gagnant dans tous les cas de figure mais c'est dans le cas d'un accord global large incluant les produits sensibles qu'il maximise ses gains (SC2). La Chine mène le jeu régional car elle a intérêt à sécuriser son accès aux matières premières d'Asie du Sud Est et, dernière venue à l'OMC, elle a dû prendre des engagements importants de réduction de ses droits de douane. Le plus favorable pour la Chine est le SC1. L'Inde qui est au départ, contrairement à la Chine, le pays le plus protectionniste doit faire face à de difficiles ajustements en cas de libéralisation complète et brutale. En réalité, elle a un intérêt à minimiser ses concessions, le SC4 serait le mieux pour elle socialement. Ainsi, on constate que les pays de l'ANSEA-10+4 ont des intérêts divergents.

Pour l'Europe à 25, les conséquences sont limitées, mais dans tous les cas on constate une marginalisation accrue de l'UE sur le marché le plus dynamique du monde. Le meilleur scénario pour l'UE serait celui des multiples accords bilatéraux excluant les produits sensibles (SC3).L'Amérique a des intérêts différents de ceux de l'UE et préférerait un accord global excluant les produits sensibles (SC2).

Les perdants sont les pays proches non inclus – Taiwan par exemple -, ainsi que les producteurs de produits primaires d'Asie du Sud, d'Amérique latine ou d'Océanie.

## RESUME COURT

La création d'institutions régionales est venue tard en Asie par rapport à l'Europe, mais leur rythme s'est accéléré depuis le milieu des années quatre-vingt dix. De nombreux accords, bilatéraux comme ceux qui sont intervenus entre le Japon et Singapour ou, plurilatéraux, tels que ceux qui concernent les pays membres de l'ANSEA, couvrent une part croissante de l'Asie orientale, y compris la Chine. Ce rapport analyse les caractéristiques de l'intégration régionale en Asie et explore les conséquences possibles de la création d'une zone de libre échange étendue à l'ANSEA-10 plus 4 (Chine, Inde, Japon, Corée du Sud) sur les pays d'Asie eux-mêmes et sur le reste du monde. Cette étude utilise le modèle d'équilibre général calculable du CEPII (MIRAGE). Quatre scénarios sont simulés: selon qu'il s'agit d'accords bilatéraux entre l'ASEAN et les quatre autres pays d'Asie ou d'un seul accord général englobant toute la zone, d'une part; selon que l'on intègre ou non les produits sensibles, d'autre part. Parmi les principaux résultats, on constate par exemple que les intérêts des pays de la zone ANSEA+10+4 ne convergent pas vers les mêmes solutions. L'ANSEA maximise ses gains si les accords se limitent aux seuls accords qu'elle passe avec chacun des partenaires tout en y incluant les produits sensibles, la Corée au contraire a intérêt à un accord global excluant les produits sensibles. Les perdants sont les pays proches non inclus – Taiwan par exemple -, ainsi que les producteurs de produits primaires d'Asie du Sud, d'Amérique latine ou d'Océanie.

*Classification JEL :* D58, F15, F17, N85.
*Mots clés :* Modèle d'équilibre général calculable, Asie, intégration économique, simulation du commerce.

**ECONOMIC INTEGRATION IN ASIA**

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## 1. INTRODUCTION

Since the 1990s, Preferential Trade Agreements of all kinds (from Free Trade to Custom Union, and Regional Community, from bilateral to regional) have been spreading all over the world. Almost every country is a member of at least one agreement. Many agreements - at least the most important ones- are organised on a continental basis such as Europe, America, Africa or, more recently, Asia. These regionalisation trends have revived the research on their economic rationale and on their compatibility with multilateral agreements.

The Asian movement toward regionalisation –known as ASEAN-10+3, +4 or +6[2]- is relatively new[3] but it may become of major importance as it concerns Japan, China and India. These countries have contributed (Japan) or will contribute (China and India) to shape a completely new world. Their economic integration with ASEAN and their possible impact on the world economy using a CGE model are the subject of this article.[4]

Section 2 provides a rapid overview of the literature on regional agreements and analyses the making of ASEAN; section 3 defines our baseline and four scenarios: section 4 is dedicated to the analysis of the main results for the first scenario with full trade agreement scenario 1(SC1 hereafter); in section five we will give SC2 results, then in section six we describe results of SC3 then we conclude.

[1] This research is a summary of a project funded by the European Directory General for Trade. Various appendix have been omitted and can be obtained from michel.fouquin@cepii.fr. The authors want to thank Lionel Fontagné for his contributions and remarks, Lars Nilsson who closely surveyed the research for the Commission, Agnés Benassy Quéré for her carefull reading, Gaspard Frontini, Vincent Aussilloux and various participants to a seminar held in Brussels in October 2005, and to the participants to a seminar on "Co-development in East Asia's Economic Integration " held in Tokyo the 18-19 of January 2006 by the Institute of Developping Economies and notably to Richard Baldwin and Daisuke Hiratsuka.

[2] ASEAN+3: ASEAN+Japan, South Korea and China, ASEAN+6 includes three other countries India, Australia and New Zealand (invited to the Kuala Lumpur Summit in December 2005).

[3] R. Baldwin wrote in 1997 "Regionalism in Asia [..]would certainly be an important event, but has yet to happen".

[4] Most CGE studies on Asia Integration are centred almost exclusively on its impact on the participants: see Kawasaki (2003), Gilbert (2001), Fukase (2001), Otsubo (2005).

## 2. OPEN REGIONALISM VERSUS AFTA

### 2.1. Open Regionalism

The traditional distinction introduced by Jacob Viner (1950) about the trade creation/trade diversion effect of preferential agreements is still valid. By definition preferential trade agreements (PTA) are discriminatory and therefore they may tend to reduce welfare. If a firm located within a PTA zone produces and exports a liberalised item, then it will benefit from the elimination (or reduction) of tariffs within the PTA, and the local consumer will benefit from reduced prices this will improve the producer's welfare as well as the consumer's welfare. On the contrary, if this producer is less efficient than outside producers and survives because of initial high tariffs it may nevertheless benefit from tariff elimination by the other PTA members if the difference in efficiency with external producers is lower than the remaining external tariff and/or if the resulting external tariff is higher than some of the previous ones. This will cause trade diversion and welfare losses for the consumer and global losses for producers.

With the new international trade theory several developments have questioned this issue. Using a model of imperfect competition P.Krugman (1991) showed that, in a world with high trade costs, continental block formation could be welfare improving. Frankel and Wei (1993) estimated that 18% was the threshold value for transportation costs to allow for positive welfare gains in continental block formation. They found that the observed value for intercontinental transportation was around 15%, hence they concluded that regional discrimination was probably welfare reducing. But research made on specialisation show that in case of complementarity between the continental block members, a PTA could be welfare improving.

In order to reduce the discriminatory nature of preferential agreements, and also probably to differentiate it clearly from the European experience, the concept of Open regionalism was developed and supported by US and Australian (and the Eminent Persons Group Report to the 5th APEC Ministerial Meeting in 1993) economists in the APEC project to create an Asia Pacific Free trade Area by 2020. But no clear definition of Open regionalism was available at that time.

After the financial crisis of 1997-1998, there was renewed interest for regional build-up. Wei and Frankel (1998) proposed a clear definition of open regionalism: a regional scheme, which does not reduce global welfare. The argument goes that regionalisation should not be regarded as an isolated regional affair but as a global trend on the three continental regions.

Two proposals have been made to neutralised the negative impact of trade diversion:

The first one is the Macmillan proposal. It requires that there is no volume change in trade between the member and non-member countries after the formation of a block. This is achieved through a degree of external liberalisation by the members vis-à-vis the non-members. Given average parameters it would entail a reduction by 40% of former external tariffs in Asia, which might be politically unacceptable.

Wei and Frankel argue that this line of reasoning does not take into account the fact that the non members countries are also engaged in other continental trade agreements hence, the authors propose to take into account the relative element of liberalisation rather than the absolute value and then they estimate that under rather realistic hypotheses, only 4% further liberalisation between member and non member might be needed to produce Pareto improvement. According to its promoters, AFTA remains inspired by the idea of open regionalism. To what extent do Asian regional projects really fit into this view is part of the questions addressed in this paper.

## 2.2. The ASEAN Free Trade Area

Institutional integration in East Asia originated with the creation of the Association of South East Asian Nations (ASEAN[5]) in 1967. In 1992, ASEAN agreed to establish the ASEAN Free Trade Area (AFTA) through a Common Effective Preferential Tariff (CEPT) scheme, in order to attract foreign direct investment (FDI) from abroad. AFTA required that tariffs levied on a limited range of products (designed as "sensitive products") traded within the region be reduced to no more than 5 percent. Quantitative restrictions and other non-tariff barriers were also to be eliminated. Although originally scheduled to be achieved by 2008, the targets of AFTA were continuously brought forward. In fact, ASEAN suffers from two major problems: first, there is a lack of political will comparable to the Franco German engagement in Europe; second trade and investment within ASEAN-10 are second to their relations with the US, Japan or even EU-25.

In 1998, after the financial crisis, ASEAN leaders decided to accelerate the processes, involving that all tariffs on products in the inclusion list be reduced to a 0-5% range, and further to zero. They also decided to enlarge the inclusion list. New members agreed to the same objective with a delay. By the beginning of 2002, the ASEAN-6 had met AFTA's targets, and only 3.8 percent of products in the CEPT inclusion list (see below), or 1,683 items out of 44,060, had tariff rates above five percent. The simple average tariff on goods traded under the AFTA scheme was about 2.7% percent in 2003, and 1,7% in 2004. Vietnam is expected to achieve AFTA compliance in 2006, Laos and Myanmar in 2008, and Cambodia in 2010. ASEAN will eliminate all import duties by 2010 for the six original members and by 2015 for the new members.

[5] Established in 1967 by five founding members: Indonesia, Malaysia, the Philippines, Singapore, and Thailand were later joined by Brunei when it became independent from Great Britain. The initial objective at the time of the Vietnamese war was to foster regional stability and to promote political and economic co-operation.

**Box 1: The Common Effective Preferential Tariff (CEPT)**

The CEPT is the mechanism by which tariffs on goods traded within the ASEAN region, which meet a 40% ASEAN local content requirement are to be reduced to 0-5% by 2002/2003 (2006 for Vietnam, 2008 for Laos and Myanmar, and 2010 for Cambodia). ASEAN members have the option of excluding products from the CEPT in three cases: 1.) Temporary exclusions; 2.) Sensitive agricultural products; 3.) General exceptions.

Temporary exclusions refer to products for which tariffs will ultimately be lowered to 0-5%, but which are being protected temporarily by a delay in tariff reductions.

For a limited number of sensitive agricultural products, the deadline will be extended to 2010. In an agreement that has yet to be fully spelled out, the process of tariff reduction on these products began between 2000-2005, depending on the country and the product.

General Exceptions refer to products that a country deems necessary for the protection of national security, public morals, the protection of human, animal or plant life and health, and the protection of articles of artistic, historic, or archaeological value. Approximately one percent of ASEAN tariff lines fall into this category.

The CEPT scheme was to cover nearly 98 percent of all tariff lines in ASEAN by the year 2003; by then, the only products not included in the CEPT Scheme were to be those in the General Exceptions category and sensitive agricultural products.

In the longer term, the ASEAN countries have agreed to enact zero tariff rates on virtually all imports by 2010 for the original signatories and 2015 for the four newer ASEAN members.

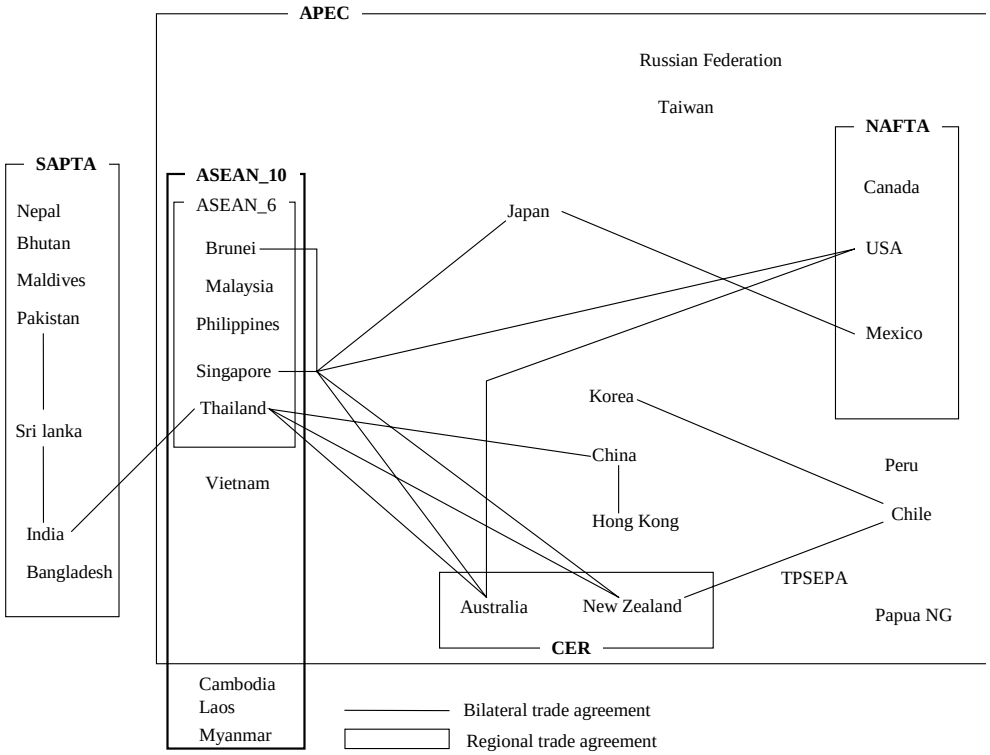
## 2.3. Long Term Perspectives: From an ASEAN FTA to an ASEAN Community

Besides the liberalisation of trade in goods, ASEAN has endeavoured to take the next steps to create a Community. In October 2003, the ASEAN leaders agreed to achieve a dynamic, cohesive, resilient and integrated ASEAN Community by 2020, by creating the ASEAN Security Community, the ASEAN Economic Community, and the ASEAN Socio-cultural Community. The ASEAN Economic Community is to be a single market and production base. It aims to create a stable, prosperous and highly competitive ASEAN economic region by the year 2020, with free movement of goods and services, freer movements of capital, equitable economic development, and reduced poverty and socio-economic disparities. This ASEAN initiative was followed by projects concerning ASEAN-10 + 3, then +4 and lately +6. The additional four countries were Japan, Korea, China, and India, Australia and New Zealand. But the Kuala Lumpur summit in December 2005, due to strong political frictions within its participants, was not able to establish concrete steps in the direction of the creation of an Asian Community. Nevertheless the FTA fever continues to make progress.

## 2.4. The "Enlargement" of the ASEAN FTA

ASEAN has extended its institutional integration instruments to other countries (see Figure 1 for a summary of relationships).

**Figure 1: Asia-Pacific Regional and Bilateral Trade Agreements (June 2005)**[6]




Source: Feridhanusetyawan (2005).

First, in November 2002, ASEAN and China signed the framework agreement on Comprehensive Economic Co-operation that plan to establish the ASEAN-China Free Trade Area (ACFTA) within ten years. In November 2004, ASEAN and China agreed to establish ACFTA by 2010 for the original six ASEAN member states and China, and by 2015 for the newer ASEAN member states.

Second, in October 2003, ASEAN and Japan signed the framework for Comprehensive Economic Partnership (CEP), and in November 2004, they agreed to start negotiations for an ASEAN-Japan CEP Agreement by April 2005.

Third, in November 2004, ASEAN and the Republic of Korea, as well as ASEAN and CER (Australia and New Zealand) agreed on a general framework to establish free trade areas. Both negotiations started in early 2005 and are to be completed within two years. The ASEAN-Korea FTA will liberalise 80% of trade in products between the ASEAN-6 and the Republic of Korea, by 2009.

[6] Since June two agreements with South Korea have been signed one with Singapore in August and one with EFTA in September.

With India, the framework agreement was signed in October 2003, and negotiations started in January 2004.

These different projects vary greatly depending on the partners' development level. A South-South agreement, such as ASEAN-China, can be negotiated within the 1979 GATT "enabling clause", which provides greater latitude to exclude products from the liberalisation scheme between developing countries forming FTAs. For example, ACFTA allows exemption of tariff reductions for a sensitive list of products, up to a ceiling of 400 tariff lines at the HS 6-digit level and 10% of the total import value, based on 2001 trade statistics for the ASEAN 6 and China; and 500 tariff lines at the HS 6-digit level for Cambodia, Laos, Myanmar and Vietnam.

By contrast, when one of the partners is a developed country, as in the case of a Japan-ASEAN FTA, the agreement must be notified under the GATT/WTO Article XXIV and must comply with the requirement of sectoral comprehensiveness (the agreement should substantially cover all bilateral trade). Therefore there are more obstacles to this second kind of arrangement and China may have advanced quicker than Japan in its negotiations with ASEAN.

The FTAs centred on ASEAN have different modalities and timeframes and will lead to free trade areas covering a large part of East Asia. (There are also arrangements between countries in Northeast Asia, such as between China and Japan, between China, Japan and the Republic of Korea, and so on.) These efforts by ASEAN members are expected at some point to establish a base for East Asian FTAs as well as economic and political communities, due to the political nature of these agreements. The leaders of ASEAN plus 3 are open to a possible enlargement of the East Asia trade region in which India, Australia and New Zealand could participate. This is probably an example of the "domino effect" (Baldwin 1993): exporters to regional blocks are strong pro membership forces, leading to enlargement of blocks. This in turn intensifies pro-membership lobbying. A good example of this tendency is given by Australia, which used to be rather opposed to Asian regionalisation (see Garnaut 2005).

Nevertheless there is also a risk that the spreading of bilateral agreements between Asian partners leads to some kind of "noodle bowl syndrome" as each agreement tends to be specific and include more or less stringent rules of origin. Even intra Asean FTA does not for the moment escape that limitation as lists of sensitive products are specific to each bilateral accord. The following simulations are made under the strong assumption that intra Asian agreements will converge towards a unique, truly plurilateral agreement, meaning that, for example trade between Indonesia and Thailand is in the end governed by the same rules as trade between Philippines and Malaysia, which has not been the case up to now.

To conclude this overview, it may be recalled that East Asia has durably maintained higher barriers to trade within Asia than vis-à-vis other partners, as can be seen from the estimates made by ITC for the year 2002 (Table 1). In other words, East Asia, contrary to other regions like the EU or NAFTA, tends to discriminate against its members. This is well illustrated for the most sensitive sectors: agriculture, textile, clothing and food-beverage

industries; by contrast, for industrial products there is no discrimination within East Asia and no preferential treatment.

**Table 1: Applied Tariff in East Asia, the EU and NAFTA, by Sector, 2002**
**Ad valorem tariff equivalents (%)**

| ***Importer*** | East Asia | | | EU-25 | | | NAFTA | | |
|---|---|---|---|---|---|---|---|---|---|
| ***Exporter*** | East Asia | NAFTA | EU-25 | East Asia | EU-25 | NAFTA | East Asia | EU-25 | NAFTA |
| Agriculture | 41.0 | 29.7 | 30.9 | 25.2 | 6.8 | 21.4 | 20.2 | 15.6 | 3.9 |
| Light industry | 26.8 | 8.3 | 12.8 | 4.9 | 0.0 | 2.2 | 8.7 | 9.6 | 0.1 |
| Food and beverages | 21.8 | 26.4 | 25.8 | 10.1 | 5.3 | 18.1 | 16.0 | 15.7 | 9.4 |
| Textiles and clothing | 7.3 | 7.6 | 7.8 | 6.2 | 0.0 | 4.9 | 10.9 | 9.7 | 0.1 |
| Transportation machinery | 4.6 | 2.8 | 8.6 | 3.4 | 0.0 | 6.8 | 3.3 | 2.9 | 0.0 |
| Pottery products | 2.9 | 3.6 | 4.4 | 1.4 | 0.1 | 2.9 | 5.7 | 5.6 | 0.5 |
| Chemicals | 2.4 | 3.0 | 2.7 | 0.8 | 0.0 | 4.9 | 4.1 | 4.2 | 0.2 |
| Basic metals | 1.8 | 2.6 | 2.3 | 1.5 | 0.5 | 4.0 | 3.0 | 2.7 | 0.3 |
| Mining Products | 1.7 | 2.6 | 1.7 | 0.4 | 0.0 | 0.3 | 1.4 | 1.8 | 0.1 |
| General machinery | 1.5 | 1.9 | 2.5 | 0.3 | 0.0 | 1.3 | 1.1 | 1.7 | 0.0 |
| Electrical machinery | 1.4 | 1.5 | 2.2 | 1.0 | 0.0 | 1.3 | 2.5 | 3.2 | 0.1 |
| Others | 1.4 | 1.7 | 2.6 | 0.6 | 0.1 | 0.8 | 3.2 | 1.3 | 0.0 |
| Wood and paper | 1.4 | 1.3 | 1.5 | 0.4 | 0.0 | 1.0 | 1.0 | 1.0 | 0.0 |
| Precision apparatus | 1.2 | 1.3 | 2.0 | 0.3 | 0.0 | 1.1 | 1.3 | 2.1 | 0.1 |
| All products | 7.4 | 5.5 | 7.2 | 7.6 | 1.9 | 7.7 | 5.7 | 5.3 | 0.7 |

Source: Market Access Map, calculations by ITC (2003).

A second conclusion might be that the APEC failure to bring significant results may first be due to its non continental content and second because of very divergent views of the real content of what was an open regional scheme: the US wanted clear and substantial commitments ("legal bindings") by country members, while ASEAN countries preferred to engage in limited and informal agenda corresponding to what is called the Musyawarch practice or "ASEAN way", based on consensus building. It turned out that these two views remained incompatible and the APEC project did not take off.

A third conclusion could be that East Asia needs strong partnership with the rest of the world but there is also a need for an Asian identity: financial crises, natural disasters, sanitary issues and even the rise of China have shown how necessary is enhanced co-operation within Asian countries.

# 3. FOUR SCENARIOS FOR EAST ASIA INTEGRATION

## 3.1. Definition of the scenarios

Two main types of regionalisation in East Asia are considered: first a fragmented one based on bilateral agreements, and second a unified one based on a multilateral agreement for East Asia. In each case,"sensitive" products are either included or excluded. Therefore we have four possible scenarios; successively:

In Scenario 1 (SC1 hereafter), we envisage a Hub and spoke scheme: ASEAN-10 removes its tariffs vis-à-vis China, India, Japan and Korea. There are no sensitive products and hence no exclusion. Tariffs against third countries remain unchanged. SC3 differs from SC1 only by the exclusion of sensitive products from the liberalisation.

In SC2, we envisage a full FTA in which China, India, Japan and Korea not only remove their tariffs on imports from ASEAN-10 members, but also remove their bilateral tariffs (e.g. China-Japan). SC4 differs from SC2 only by the exclusion of extra-ASEAN sensitive products from the liberalisation. Due to space limitations SC4 results are not shown in detail but they can be obtained from the authors.

In SC3 and SC4 the exclusion of sensitive products only concerns trade between ASEAN and non-ASEAN members. We lack information on its precise content, with the exception of China that as already notified its lists of exclusions vis-à-vis the ASEAN-10, as well as Malaysia having notified its exclusions vis-à-vis China.[7] Hence the general principle adopted here is to identify 10% of the tariff lines to be defined as sensitive products, as follows:

We first replicate the eventual list of sensitive products within ASEAN[8] before 2010, assuming that for each ASEAN member, the list of sensitive products should be the same vis-à-vis the four new partners[9].

We add to the former list the tariff lines that will not be bound by 2010, on the basis of the information available in 2005.

If necessary, we add the highest bound tariff lines.

[7] Lists of sensitive products of each one of ASEAN members have been taken from countries' declarations posted on the ASEAN web site.

[8] As already mentioned, all exclusions are to be removed by 2010 within the ASEAN10.

[9] The exception here is Malaysia, for which the sensitive products vis-à-vis China are replicated vis-à-vis India, Japan and Korea.

It should be noticed that this methodology does not lead to artificially create protection for a country such as Singapore. We do not define the exclusion list by merging the different individual countries' lists, but instead keep individual lists at the country level. The averaging of the protection opposed by ASEAN-10 to a given partner (e.g. China) among the 10 members is only a second step in our calculation.

Reciprocally, India, Japan and Korea declare the same percentage of sensitive tariff lines: for these countries, exclusions are defined by considering unbounded lines and the highest bound tariffs. As regards China, we extend the notified list to 10% of its tariff lines, according to the previous principles, to adopt a unified treatment of tariff structures.

The simulations are performed with MIRAGE CEPII's model, which is described in Box 2.

**Box 2: The MIRAGE model**

Mirage is a CGE model of world trade. CGE (computational General Equilibrium) models are based on the theory of general equilibrium they assume that all demand finds its supply at an equilibrium price and this is true on all markets for all goods and services simultaneously. Every agent adapts his behaviour in consequence. A CGE model shows how the adjustment works by taking into account all the interactions between the different markets. These models are now commonly used for simulation purpose on international trade issues.

Mirage is a multi-sector, multi-region computable general equilibrium (CGE) model, nicknamed MIRAGE (for *Modelling International Relationships in Applied General Equilibrium*). It is devoted to trade policy analysis. MIRAGE describes imperfect competition in an oligopolistic framework *à la Cournot*. It accounts for horizontal product differentiation linked to varieties, but also to geographical origin (nested Armington – Dixit-Stiglitz utility function). A new calibration procedure allows the available information on these aspects to be used efficiently. The modelling is done in a sequential dynamic set-up, where the number of firms by sector adjusts progressively, and where installed capital is assumed to be immobile, even across sectors. Capital reallocation therefore only results from the combined effect of depreciation and investment. It makes it possible to describe the adjustment lags of capital stock, and the associated costs.

Compared to previous applied CGE trade models, MIRAGE has three additional main distinctive features, aimed at improving the description of trade policies' main transmission channels:

- FDI is explicitly described, with a modelling both theoretically consistent (with agents' behaviour, and with domestic investment setting), and consistent with the empirical results on FDI determinants and their order of magnitude;
- a notion of vertical product differentiation is introduced, by distinguishing two quality ranges, according to the country of origin of the product;
- Tariff and non-tariff barriers taken from the MacMaps database. As a result, MIRAGE is based on a description of trade barriers that, besides its precision, preserves the bilateral dimension of the information, contrasting with what is commonly done in applied modelling.

Except for data on trade barriers, the model uses the GTAP (Global Trade Analysis Project) 6 database (see Dimaranan and Mc Dougall 2002). This allows a wide flexibility in choosing the sectoral and geographical aggregations of MIRAGE that may be changed for each application.

## 3.2. Basic impact of tariff cuts

Phasing out of tariffs both on industrial products and above all on agricultural goods brings a large decline in consumer prices and so fosters an increase in demand for these products and consequently a rise in production prices and in export prices. Net exporters (resp. net importers) of agro-food products therefore benefit (resp. lose) from these increases in prices and register a gain (a loss) in their terms of trade as well as an activity increase (decrease). Their balance of trade tends to become positive (negative) and induce a currency appreciation (depreciation). Large exporters of industrial products can balance their deteriorating trade in agricultural goods by their gains in industrial goods.

Comments on each scenario are organised as follows: we start with a summary of the main results based on three variables: changes in the Gross Domestic Product (GDP) volume for the real impact, the Real Effective Exchange Rate (RER) for the valuation impact[10] and the welfare impact which shows the balance between consumer gains (or losses) and producers gains (or losses)[11].

We then turn to detailed analysis: the impact on trade in agricultural goods is analysed; then the impact on production volume and prices for these goods is presented. Followed by the impact on trade in industrial goods, and the impact on world prices for all goods, followed by a term of trade analysis. Lastly we provide a detailed analysis of the major changes in bilateral trade, firstly within East Asian countries, and, secondly between the EU-25 and these countries.

## 3.3. The Political Economy of the four Scenarios

As previously stated, SC1 — ASEAN-10 as a Hub and Spoke centre with extensive sectoral inclusion — is an extreme scenario since it implies full liberalisation between ASEAN-10 and each of its main partners Japan, Korea, China and India. But this scenario appears to be more realistic than SC2 (and even SC4) for at least three reasons:

- First, a bilateral agreement between China and ASEAN-10, the ACFTA[12], already exists (see Table 2). It is a strong incentive for the other three partners to catch up with China;

[10] There are several value changes in the simulations: relative domestic prices which should in general be rather limited and international prices of which exchange rates are the most important.

[11] Welfare measures the change in utility for a particular household expressed as the difference between nominal household income (which is some share of nominal Net National Product that accrues to the household) and an expenditure price index (ranging over the prices of private and government consumption goods and saving) for the household. The nominal household income is expressed in terms of the change in the share (of the household in NNP) and the change in nominal NNP, the latter being equal to changes in nominal GDP minus depreciation plus foreign income.

[12] In November 2001, China and the 10-member country Association of South East Asia Nations (ASEAN) began negotiations to set up a free trade area (FTA). One year later, a framework agreement laying out the FTA plan was signed. The FTA, a zero-tariff market of 1.7 billion people, is targeted to come into force in

- Second, it would be very difficult, if not impossible before long, to build a consensus between the four partners of ASEAN and make them adopt a common negotiating position as in SC2 (and SC4);

- Third, as will be shown later in this paper, it is in the ASEAN interest to sign separate agreements.

There is a strong economic rationale behind this regionalisation project.

**Table 2: Macro-economic Impacts (in %)**

| | GDP (volume) | | | | Real effective exchange rate | | | | Welfare | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2010 | 2015 | 2020 | 2025 | 2010 | 2015 | 2020 | 2025 | 2010 | 2015 | 2020 | 2025 |
| ASEAN-10 | 3.27 | 3.80 | 4.20 | 4.43 | 2.39 | 2.04 | 2.06 | 2.18 | 1.52 | 2.18 | 2.61 | 2.88 |
| Japan | 0.52 | 0.65 | 0.72 | 0.75 | 0.12 | 0.19 | 0.24 | 0.27 | 0.15 | 0.18 | 0.19 | 0.19 |
| Korea | 0.47 | 0.57 | 0.52 | 0.48 | 0.04 | 0.19 | 0.17 | 0.13 | -0.27 | -0.40 | -0.48 | -0.53 |
| China | 0.70 | 0.84 | 0.86 | 0.84 | -0.05 | 0.01 | 0.01 | -0.01 | -0.13 | -0.12 | -0.12 | -0.11 |
| India | 2.25 | 2.37 | 2.25 | 2.19 | -2.33 | -2.27 | -2.34 | -2.37 | -0.24 | -0.32 | -0.36 | -0.35 |
| Hong Kong, Taiwan, Rest of East Asia | -0.26 | -0.38 | -0.42 | -0.41 | -0.13 | -0.12 | -0.12 | -0.13 | -0.14 | -0.19 | -0.22 | -0.23 |
| South Asia | -0.25 | -0.20 | -0.23 | -0.27 | -0.11 | -0.12 | -0.16 | -0.20 | -0.08 | -0.05 | -0.06 | -0.07 |
| EU - 25 | -0.08 | -0.08 | -0.08 | -0.08 | 0.00 | 0.00 | 0.00 | 0.00 | -0.01 | -0.01 | -0.01 | -0.01 |
| EFTA | -0.03 | -0.06 | -0.08 | -0.10 | 0.01 | 0.00 | 0.00 | -0.01 | -0.01 | -0.01 | -0.02 | -0.02 |
| Russian Fed | -0.12 | -0.15 | -0.17 | -0.19 | -0.09 | -0.12 | -0.14 | -0.17 | -0.05 | -0.08 | -0.10 | -0.11 |
| North Africa | -0.12 | -0.16 | -0.20 | -0.24 | -0.10 | -0.15 | -0.19 | -0.22 | -0.07 | -0.08 | -0.09 | -0.10 |
| Rest of Europe | -0.04 | -0.04 | -0.05 | -0.05 | 0.01 | 0.01 | 0.00 | 0.00 | -0.01 | -0.01 | -0.01 | -0.02 |
| USA | -0.10 | -0.08 | -0.07 | -0.07 | -0.04 | -0.02 | -0.02 | -0.03 | 0.00 | 0.00 | 0.00 | 0.01 |
| Canada | -0.07 | -0.09 | -0.11 | -0.13 | -0.03 | -0.03 | -0.05 | -0.07 | -0.01 | -0.01 | -0.01 | -0.02 |
| Mexico and Central America | -0.08 | -0.09 | -0.11 | -0.14 | -0.05 | -0.05 | -0.05 | -0.06 | -0.02 | -0.02 | -0.03 | -0.05 |
| South America | -0.19 | -0.23 | -0.27 | -0.31 | -0.19 | -0.23 | -0.27 | -0.31 | -0.04 | -0.05 | -0.06 | -0.07 |
| Australia and New Zealand | -0.10 | -0.17 | -0.21 | -0.23 | 0.00 | -0.08 | -0.10 | -0.13 | -0.04 | -0.07 | -0.08 | -0.09 |
| Rest of the World | -0.08 | -0.11 | -0.13 | -0.14 | -0.01 | -0.05 | -0.07 | -0.09 | -0.02 | -0.03 | -0.03 | -0.04 |

Source: MIRAGE.

Natural resources are highly abundant in South East Asia, notably for agriculture (three rice crops a year is not exceptional in most countries) on the one hand, and on the other hand developed Asia and China are rather short of natural resources. But in developed Asia more than anywhere else, agro-food imports are under strict control, if not de facto forbidden by stratospheric tariffs as it is the case for rice products in Japan and Korea. Agricultural issues are at the heart of the Doha round and Japan (with Switzerland) is fiercely resistant to any suggestion to cap tariffs at 100% as proposed by the G20. Therefore, the most likely scenario should be the one with a hub structure excluding sensitive products, i.e. SC3.

2010 for the six original ASEAN members and in 2015 for the other four. Implementation of the framework agreement would occur in stages. An early harvest programme covering trade in goods came into force in July 2005. Negotiations on a dispute settlement mechanism were finalised in 2004 for implementation in 2005. Negotiations on trade in services are ongoing. Note up to date in August 2005, source: http://www.bilateral.org.

# 4. SCENARIO 1: ASEAN-10 ESTABLISHES FULL BILATERAL FTAS WITH JAPAN, CHINA, KOREA AND INDIA

## 4.1. Main Results

The macro-economic results differ depending on whether we consider the volume impact of trade liberalisation or the value impact (Table 2). ASEAN-10, the biggest winner on all accounts, cumulates gains in volume (+ 4.4% of GDP) with gains in the Real Exchange Rate (+ 2.2%), the total gain being 6.6%. The gains in ASEAN exports are higher than those in imports and therefore are compensated by a real exchange rate appreciation.

Japanese gains come next with +0.75% for GDP and 0.27% of RER appreciation. Korea shows a similar picture. For China there are only gains in volume (+ 0.84%) while gains in value are nil. The Indian case offers the most contrasted results: gains in volume (+ 2.19%) are over-shadowed by losses in value (-2.37%), making India the sole country to lose among the partners of ASEAN-10. How can we explain that the most protected economy loses from the liberalisation process? India's real GDP increase is the second largest after ASEAN-10. The first impact of liberalisation is to stimulate a large rise in imports, while there are only small gains in exports. The small export gains are due to the relatively low initial tariffs of India's partners. Therefore the balance of Indian Trade tends to deteriorate and as a consequence its currency depreciates in order to re-balance its external trade. The depreciation is larger than the gains in volume.

We can interpret the results for India as a consequence of being formerly closed: closeness encourages over-valuation of the currency. So the loss on values should not be considered too negative for India. Maximising volume growth is probably the first priority for a developing country rather than value maximisation.

The rest of the world loses in both volume and value. As access to Asian countries is reduced, these countries register a decline in their exports; due to the diversion effect, this decline induces a fall in output (between 0.41% and 0.07%) as well as a slight currency depreciation (between 0.31% and 0%).

Among the losers, we find South America, South Asia, North of Africa, the Russian federation and Australia, New Zealand. These zones are specialised in primary and agro-food products and suffer from the diversion effect more than industrialised countries. Other zones like Hong Kong and Taiwan are among the main losers due to their strong links to ASEAN +4 countries. Being excluded from the Asian hub represents a high price. One may conclude that these countries should be included in the hub. It is clearly the case of Hong Kong, while for Taiwan there are political issues that may delay regional integration.

The impact on the EU–25 and for the rest of Europe is the lowest; this is in part the result of a weak link between East Asia and Europe, this link being particularly weak for agro-food products in Asia. Similarly, the US GDP is marginally affected (-0.07%). In general it seems that developed countries are less sensitive to Asian regionalisation than developing countries.

Our analysis up to now has been focused on the final year results (2025); we now look at the dynamic adjustment between 2010 and 2025. For most countries the impact on volume grows overtime. For ASEAN-10 GDP it goes from 3.27% the first year to 4.43% in 2025, an increase of one third. For the real exchange rates, adjustment appears to be immediate and often stays stable over time. These diverging evolutions show that real adjustment takes time while price changes are almost instantaneous; this seems to be a reasonable approximation of reality.

The indicator of welfare summarises the different impacts on the supply side as well as on the demand side. ASEAN and Japan are the only two Asian zones to benefit in terms of welfare. ASEAN gains are valued at $36 billion while those of Japan are valued at $8.6 billion and those of the $1.3 billion. The rest of the world loses -- Korea around $4.7 billion and India $4.6 billion.

**Table 3: Welfare ($ Millions)**

| Region | 2010 | 2015 | 2020 | 2025 |
|---|---|---|---|---|
| ASEAN-10 | 9 473,61 | 17 169,43 | 25 839,45 | 36 001,17 |
| Japan | 5 450,52 | 6 877,31 | 7 785,35 | 8 574,74 |
| Korea | -1 166,28 | -2 222,42 | -3 385,65 | -4 695,44 |
| China | -1 711,58 | -2 216,69 | -2 946,97 | -3 930,91 |
| India | -1 468,28 | -2 539,19 | -3 668,09 | -4 582,17 |
| Hong Kong Taiwan Rest of Asia | -702,30 | -1 273,00 | -1 780,13 | -2 291,52 |
| South Asia | -149,77 | -134,19 | -181,08 | -261,54 |
| | | | | |
| EU-25 | -829,32 | -779,35 | -878,91 | -948,14 |
| EFTA | -22,09 | -42,58 | -69,50 | -110,92 |
| Russian Federation | -179,90 | -303,36 | -418,96 | -549,49 |
| North Africa | -184,15 | -252,15 | -350,03 | -476,53 |
| Rest of Europe | -31,85 | -47,96 | -69,39 | -90,94 |
| | | | | |
| USA | -263,78 | 107,87 | 663,67 | 1 287,12 |
| Canada | -64,24 | -78,84 | -126,17 | -192,69 |
| Mexico and Central America | -126,44 | -195,44 | -353,73 | -582,39 |
| South America | -494,51 | -739,20 | -1 005,68 | -1 325,59 |
| | | | | |
| Australia New-Zealand | -187,64 | -329,96 | -468,93 | -634,73 |
| Rest of the world | -214,40 | -490,83 | -678,18 | -853,33 |

Source : MIRAGE.

## 4.2. Trade in Agricultural Goods

### Impact on Exports

As expected, ASEAN-10 is among the biggest winners on the export side (Table 4). Their agricultural export volumes increase by 35% in 2010 and 30% by 2015 compared to the baseline projection.

India comes first in % but second in absolute value. As India was one of the most protected economies (50% tariffs), it also faced high tariffs for its exports (24% on average). Its world exports increase by 43% in 2010 and 50% in 2025. Most of this increase is made on ASEAN-10 markets. The bilateral flow more than doubles.

**Table 4: Impact on Agricultural Trade (in %)**

| | Agricultural exports (volume) | | | | Agricultural imports (volume) | | | |
|---|---|---|---|---|---|---|---|---|
| | 2010 | 2015 | 2020 | 2025 | 2010 | 2015 | 2020 | 2025 |
| ASEAN-10 | 34.73 | 35.12 | 33.12 | 30.34 | 23.13 | 23.61 | 23.98 | 24.16 |
| Japan | 8.93 | 7.04 | 5.35 | 4.07 | 17.56 | 19.64 | 20.45 | 20.66 |
| Korea | 5.56 | 4.57 | 3.75 | 2.97 | 24.51 | 24.85 | 24.35 | 23.65 |
| China | 9.54 | 11.06 | 13.00 | 15.31 | 3.31 | 3.43 | 3.44 | 3.40 |
| India | 43.25 | 43.66 | 46.45 | 49.11 | 47.84 | 50.43 | 50.45 | 50.06 |
| Hong Kong, Taiwan, Rest of East Asia | 0.32 | 0.76 | 0.49 | 0.05 | -0.80 | -1.25 | -1.37 | -1.40 |
| South Asia | -5.50 | -6.96 | -8.48 | -10.25 | -0.99 | -0.85 | -0.91 | -1.03 |
| EU - 25 | -0.01 | -0.10 | -0.16 | -0.24 | -0.10 | -0.18 | -0.20 | -0.21 |
| EFTA | -0.05 | -0.11 | -0.15 | -0.19 | -0.07 | -0.15 | -0.18 | -0.21 |
| Russian Fed | -0.28 | -0.16 | -0.36 | -0.68 | -0.31 | -0.42 | -0.48 | -0.52 |
| North Africa | -0.25 | -0.24 | -0.20 | -0.16 | -0.43 | -0.62 | -0.72 | -0.83 |
| Rest of Europe | -0.27 | -0.40 | -0.50 | -0.62 | -0.06 | -0.08 | -0.08 | -0.08 |
| USA | -0.59 | -0.63 | -0.64 | -0.67 | -0.47 | -0.48 | -0.46 | -0.47 |
| Canada | -0.07 | -0.01 | 0.00 | -0.03 | -0.17 | -0.26 | -0.35 | -0.43 |
| Mexico and Central America | -0.19 | -0.19 | -0.16 | -0.11 | -0.12 | -0.17 | -0.21 | -0.23 |
| South America | 0.27 | 0.27 | 0.24 | 0.17 | -0.61 | -0.83 | -0.94 | -1.04 |
| Australia and New Zealand | 0.39 | 0.40 | 0.51 | 0.54 | -0.85 | -1.37 | -1.51 | -1.63 |
| Rest of the World | -0.99 | -0.99 | -1.03 | -1.11 | -0.54 | -0.65 | -0.68 | -0.70 |

Source: MIRAGE.

China comes in third place with a 15% increase. Japan and Korea's low levels of exports increase only marginally.

Among other zones with very small gains (less than 1%) are Australia and New Zealand, Hong Kong Taiwan, South America. They benefit from the real exchange appreciation of ASEAN (see above).

Other zones lose market shares because of a diversion effect.

First, South Asian countries lose 10% in favour of ASEAN-10 and India[13] but not to China with which it has very limited trade relations. This is probably the most critical issue since South Asia covers one of the poorest regions of the world, highly dependent on agriculture.

The EU-25 loses 0.24% and the US 0.67%. These losses are not large, but they come for the EU on the top of an already relatively low market share in the fast growing ASEAN markets. Therefore, it is a lost opportunity for the EU. The EU and the US may want to get a slice of the market, but the EU-25's high level of discrimination against ASEAN will have to be alleviated to do so.

**Impact on Imports**

Except for China, whose late WTO adhesion in 2003 forces its tariffs down before our shock simulations, Asian imports increase very fast. The 24% increase in ASEAN-10 imports is large but less than its export gains. This reflects the rather low initial protection of that zone (inclusion of Singapore in ASEAN-10 tends to lower the average tariff rate) compared to the protection it is facing on foreign markets.

India registers a record 50% variation in its imports corresponding to a reduction to zero of its more than 50% tariff rate vis-à-vis its Asian partners, and 57% vis-à-vis ASEAN. ASEAN is the main benefactor: For example, Indian imports of fats from ASEAN grow more than four-fold, which corresponds to a nearly $9 billion increase. Other Asian countries are being ousted.

Japan and Korea register similar import increases of around 20%. In these three cases - India, Japan and Korea- out of four it means that their balance of trade is deteriorating.

For South Asia, the decline in imports (-1.03%) is very far from balancing its export decline (-10.3%).

The rest of the world — European countries excepted — generally reduces its imports more than it reduces its exports. In the US case (a 0.67% decline in imports compared to a 0.47% export decline) this was a consequence of a relative increase in Asian producer prices. Indeed, the decline in Asian consumer prices, due to the decline in tariffs, produces an increase in production volumes, and therefore an increase in producer prices, and, in the case of ASEAN, an exchange rate appreciation (see above).

In general, all European countries reduce their exports and their imports as well by small margins. Their losses in exports are the result of the diversion effect while their import decline is more a consequence of higher Asian prices. EU-25 countries reduce their imports less than their exports (-0.21% compared to –0.24%) therefore slightly deteriorating their trade balance.

[13] In the geographical breakdown used here, India is separated from South Asia which should be named as "Rest of South Asia".

## 4.3. Agro-food Production and Prices

Overall, agro-food production increases for ASEAN-10, while it decreases by 4.4% for India, reflecting initial differences in protection and competitiveness (Table 5). For the rest of the world, production decreases generally by less than 0.3%, except in China and Korea where it decreases by 0.6%, i.e. twice the decrease for Japan (-0.27%).

Price and production changes generally move in the same direction: where production increases, prices tend to increase. ASEAN production grows between 3.8% in 2010 to 8.3% in 2015; ASEAN prices grow by 2.8%. Indian prices decline by 2.6% and its production by 4.4%.

Some differences appear between Japanese and Korean trends: the decline in Korean production is twice as large as Japan's. So is the Korean price decline. This is a consequence of structural differences between the two countries. Although both maintain high protection in the agricultural sector, they are in different positions. South Asia combines a 0.24% decline in production with a 0.22% decline in prices.

The impact on the EU-25 is limited, being nil on prices, and weak on production (–0.05%). The USA is a little more affected with respectively –0.06% and 0.01%.

**Table 5: Impact on Production and Prices (in %)**

| | Agro-food production (vol) | | | | Agro-food production price | | | |
|---|---|---|---|---|---|---|---|---|
| | 2010 | 2015 | 2020 | 2025 | 2010 | 2015 | 2020 | 2025 |
| ASEAN-10 | 3.79 | 7.00 | 7.93 | 8.34 | 4.13 | 2.99 | 2.82 | 2.81 |
| Japan | 0.00 | -0.12 | -0.20 | -0.27 | -0.62 | -0.60 | -0.55 | -0.52 |
| Korea | 0.30 | -0.04 | -0.35 | -0.61 | -1.30 | -1.25 | -1.24 | -1.25 |
| China | -0.32 | -0.46 | -0.52 | -0.56 | -0.08 | -0.02 | -0.04 | -0.08 |
| India | -2.91 | -4.08 | -4.31 | -4.42 | -2.81 | -2.48 | -2.55 | -2.60 |
| Hong Kong, Taiwan, Rest of East Asia | 0.07 | -0.10 | -0.18 | -0.22 | -0.07 | -0.04 | -0.03 | -0.03 |
| South Asia | -0.05 | -0.15 | -0.20 | -0.24 | -0.13 | -0.14 | -0.17 | -0.22 |
| EU - 25 | 0.03 | -0.01 | -0.03 | -0.05 | 0.00 | 0.00 | 0.00 | 0.00 |
| EFTA | -0.02 | -0.07 | -0.10 | -0.12 | 0.01 | 0.00 | 0.00 | 0.00 |
| Russian Fed | -0.09 | -0.18 | -0.24 | -0.28 | -0.10 | -0.12 | -0.13 | -0.15 |
| North Africa | 0.01 | 0.01 | 0.01 | 0.01 | -0.07 | -0.12 | -0.16 | -0.19 |
| Rest of Europe | 0.00 | -0.04 | -0.06 | -0.07 | 0.00 | 0.00 | 0.00 | 0.00 |
| USA | 0.00 | -0.04 | -0.05 | -0.06 | -0.04 | -0.02 | -0.01 | -0.01 |
| Canada | -0.01 | -0.06 | -0.09 | -0.12 | -0.02 | -0.02 | -0.03 | -0.05 |
| Mexico and Central America | -0.01 | -0.02 | -0.04 | -0.05 | -0.04 | -0.04 | -0.04 | -0.05 |
| South America | -0.08 | -0.16 | -0.19 | -0.22 | -0.17 | -0.20 | -0.22 | -0.26 |
| Australia and New Zealand | 0.18 | 0.13 | 0.11 | 0.11 | 0.06 | -0.03 | -0.05 | -0.06 |
| Rest of the World | 0.01 | -0.04 | -0.07 | -0.09 | -0.02 | -0.06 | -0.08 | -0.10 |

Source: MIRAGE.

## 4.4. Trade in Industrial Goods

Two factors influence industrial trade: the elimination of tariffs between ASEAN-10 and its four partners, and the changes in agricultural goods trade, which have to be compensated to insure equilibrium (Table 6). Movements in the industrial goods trade balance generally compensate for the movements on agricultural goods. ASEAN-10 increases in imports are higher (+6.6%) than export increases (+5%). The same is true for China with 6.2% and 3.4% respectively.

For the same reason, Japan and Korea improve their position on industrial goods, compensating for their losses on agricultural goods with an increase of 3.5% and 3.4% respectively on the export side and 1.9% and 2.2% for their industrial imports.

India is the exception, seeing its industrial imports increasing (28%) more than its exports (20%). In the case of India an increase in other primary products exports compensate for this.

**Table 6: Trade in Industrial Goods (in %)**

| | Industrial exports (volume) | | | | Industrial imports (volume) | | | |
|---|---|---|---|---|---|---|---|---|
| | 2010 | 2015 | 2020 | 2025 | 2010 | 2015 | 2020 | 2025 |
| ASEAN-10 | 4.34 | 4.91 | 5.06 | 5.07 | 7.00 | 6.60 | 6.53 | 6.58 |
| Japan | 2.39 | 2.94 | 3.25 | 3.47 | 1.01 | 1.35 | 1.66 | 1.94 |
| Korea | 2.82 | 3.20 | 3.31 | 3.38 | 1.49 | 1.79 | 2.00 | 2.21 |
| China | 2.18 | 2.88 | 3.22 | 3.41 | 4.09 | 5.06 | 5.71 | 6.22 |
| India | 17.34 | 19.04 | 19.62 | 20.25 | 20.60 | 23.80 | 26.01 | 28.10 |
| Hong Kong, Taiwan, Rest of East Asia | -0.94 | -1.74 | -2.05 | -2.21 | -0.55 | -0.55 | -0.54 | -0.54 |
| South Asia | -0.17 | 0.08 | 0.15 | 0.17 | -0.29 | -0.13 | -0.07 | -0.06 |
| EU - 25 | -0.28 | -0.48 | -0.59 | -0.69 | -0.09 | -0.11 | -0.10 | -0.09 |
| EFTA | -0.23 | -0.49 | -0.66 | -0.81 | -0.08 | -0.13 | -0.15 | -0.15 |
| Russian Fed | -0.25 | -0.35 | -0.39 | -0.42 | -0.20 | -0.25 | -0.27 | -0.29 |
| North Africa | -0.69 | -0.97 | -1.17 | -1.37 | -0.33 | -0.42 | -0.51 | -0.59 |
| Rest of Europe | -0.27 | -0.34 | -0.38 | -0.42 | -0.04 | -0.02 | -0.01 | 0.00 |
| USA | -0.29 | -0.63 | -0.79 | -0.91 | -0.22 | -0.11 | -0.05 | -0.01 |
| Canada | -0.04 | -0.34 | -0.49 | -0.57 | -0.08 | -0.17 | -0.23 | -0.26 |
| Mexico and Central America | -0.17 | -0.25 | -0.32 | -0.38 | -0.15 | -0.20 | -0.24 | -0.26 |
| South America | -0.95 | -1.35 | -1.57 | -1.76 | -0.49 | -0.68 | -0.79 | -0.87 |
| Australia and New Zealand | -0.88 | -1.22 | -1.42 | -1.58 | -0.44 | -0.48 | -0.48 | -0.49 |
| Rest of the World | -0.09 | -0.20 | -0.23 | -0.24 | 0.03 | 0.03 | 0.05 | 0.08 |

Source: MIRAGE.

Generally speaking, industrial exports for the rest of the world decrease more than their imports; this is due for the most part, to a diversion effect, Japan and Korea benefiting from a better access to the ASEAN markets. In the EU-25 case, the reduction in exports is significant (-0.69%) while the reduction in imports is low (-0.09%). Consequently, equilibrium is achieved through higher service exports (see Section 4.9).

## 4.5. Terms of Trade

As a general rule, terms of trade tend to deteriorate when RER depreciates and vice versa (Table 7). This is true in all cases except for Korea where RER appreciation coincides with a deterioration of its terms of trade to be explained below.

**Table 7: Terms of Trade (in %)**

| | Terms of Trade | | | |
|---|---|---|---|---|
| | 2010 | 2015 | 2020 | 2025 |
| ASEAN-10 | 1,40 | 1,29 | 1,28 | 1,35 |
| Japan | 0,00 | 0,04 | 0,03 | 0,02 |
| Korea | -0,13 | -0,12 | -0,15 | -0,20 |
| China | -0,44 | -0,49 | -0,51 | -0,53 |
| India | -3,24 | -3,28 | -3,33 | -3,37 |
| Hong Kong, Taiwan, Rest of Asia | -0,25 | -0,19 | -0,19 | -0,20 |
| South Asia | -0,16 | -0,09 | -0,10 | -0,13 |
| EU-25 | -0,03 | -0,02 | -0,02 | -0,02 |
| EFTA | -0,03 | -0,04 | -0,04 | -0,03 |
| Russian Fed | -0,08 | -0,10 | -0,11 | -0,12 |
| North Africa | -0,21 | -0,25 | -0,28 | -0,33 |
| Rest of Europe | 0,00 | 0,02 | 0,02 | 0,03 |
| USA | -0,09 | -0,05 | -0,03 | -0,03 |
| Canada | -0,03 | -0,04 | -0,04 | -0,05 |
| Mexico, Central America | -0,06 | -0,07 | -0,07 | -0,08 |
| South America | -0,23 | -0,25 | -0,27 | -0,29 |
| Australia, New Zealand | -0,14 | -0,19 | -0,21 | -0,23 |
| Rest of the World | 0,01 | 0,00 | 0,00 | 0,00 |

Source: MIRAGE.

As previously mentioned, movements in real exchange rates are used in the MIRAGE model as a tool to balance current accounts. ASEAN-10, Japan and Korea show RER appreciation by 2.2%, 0.3% and 0.1% respectively. These movements explain a relative decline in export competitiveness vis-à-vis the rest of the world, in order to compensate for their gains within the region. But terms of trade changes are also the result of many price changes such as those affecting product prices. Table 8 shows that the most protected products such as rice or sugar get higher price rises.

On the other side of the spectrum industrial goods register a decline in prices, notably all the mechanical sector, from the steel industry to the automotive industry, reflecting the effect of scale economies.

Indian RER depreciates by 2.4% and China's by a minor 0.1%.

**Table 8: Impact on World Prices (in %)**

| | World Prices for Developing countries | | | |
|---|---|---|---|---|
| | 2010 | 2015 | 2020 | 2025 |
| Rice | 2,74 | 2,55 | 2,67 | 2,83 |
| Sugar | 3,41 | 1,82 | 1,58 | 1,45 |
| Fishing | 1,67 | 1,38 | 1,35 | 1,41 |
| ForWoodPap | 0,76 | 0,96 | 1,04 | 1,15 |
| Dairy | 2,89 | 1,42 | 1,15 | 1,02 |
| LiveAnMeat | 1,10 | 0,77 | 0,78 | 0,82 |
| VegFruits | 0,43 | 0,52 | 0,61 | 0,71 |
| CerealsOil | 1,05 | 0,95 | 0,83 | 0,70 |
| FoodFats | 1,38 | 0,78 | 0,68 | 0,69 |
| BevTabacco | 0,88 | 0,59 | 0,56 | 0,58 |
| BusinSer | 0,41 | 0,56 | 0,56 | 0,57 |
| FinanceIns | 0,42 | 0,42 | 0,44 | 0,47 |
| AnProdWool | 0,46 | 0,44 | 0,46 | 0,47 |
| OthSer | 0,49 | 0,39 | 0,40 | 0,43 |
| FibersCrop | 0,27 | 0,31 | 0,34 | 0,35 |
| TexClothLe | 0,03 | 0,13 | 0,18 | 0,25 |
| TrT | 0,23 | 0,21 | 0,20 | 0,20 |
| Com | 0,18 | 0,17 | 0,18 | 0,19 |
| Primary | 0,23 | 0,17 | 0,16 | 0,16 |
| Electronic | 0,27 | 0,18 | 0,16 | 0,15 |
| Machinery | 0,18 | 0,08 | 0,05 | 0,05 |
| Chemicals | 0,41 | 0,12 | 0,04 | 0,02 |
| TrspEqNec | 0,08 | 0,00 | -0,01 | -0,02 |
| MotorVeh | -0,39 | -0,12 | -0,08 | -0,06 |
| OthMetal | 0,05 | -0,01 | -0,04 | -0,08 |
| OthManuf | -0,01 | -0,08 | -0,13 | -0,17 |
| MetalProd | -0,13 | -0,15 | -0,21 | -0,27 |
| FerMetal | -0,19 | -0,19 | -0,24 | -0,30 |

Source: MIRAGE.

Note: developing countries have a different basket of imported goods and export prices are also different.

## 4.6. Major Changes in Bilateral Trade

As expected, the most important changes are registered in the trade within East Asia, and more precisely for ASEAN countries that are at the centre of the scenario (Table 9). On the ASEAN export side, India appears to be the major market for ASEAN for primary products (natural gas in the case of ASEAN) and food fats which are also among the main comparative advantage of ASEAN. In 2003 India remained with South Asia a closed market for primary goods (with a MFN tariff of 44%) contrasting with most other zones which have reduced their external tariffs on their imported inputs (but which may have imposed large domestic taxes).

The second market for ASEAN is China for chemicals, machinery, and electronic goods. The third market is Japan for sugar, textile-clothing, and dairy products. These results reveal a consolidation of the different comparative advantages of each partner.

For Japan, that is the second winner of the scenario, export gains towards ASEAN are concentrated in the motor vehicle industry and in the machinery industry.

For China the products benefiting most from regionalisation are first the electronic industry vis-à-vis ASEAN, Japan and Korea and then transport equipment other than cars.

**Table 9: Major Changes in Bilateral Trade ($Million)**

**Fivteen Major variations in millions dollars**

| Increases | | | | decreases | | | |
|---|---|---|---|---|---|---|---|
| Products | exporter | import country | Variation | Products | export country | import country | Variation |
| Primary | ASEAN | India | 22247.24 | Electronic | ASEAN | ASEAN | -8806.29 |
| Chemicals | ASEAN | China | 14139.07 | Machinery | ASEAN | ASEAN | -6564.74 |
| MotorVeh | Japan | ASEAN | 12310.15 | MotorVeh | ASEAN | ASEAN | -3600.79 |
| FoodFats | ASEAN | India | 11374.44 | Electronic | ASEAN | Japan | -2266.75 |
| Machinery | ASEAN | China | 9520.15 | TexClothLe | ASEAN | ASEAN | -1752.5 |
| TexClothLe | ASEAN | China | 7915.07 | Primary | ASEAN | Japan | -1729.32 |
| Electronic | China | ASEAN | 7003.43 | Chemicals | Korea | China | -1642.74 |
| Sugar | ASEAN | Japan | 6387.81 | Primary | ASEAN | ASEAN | -1513.47 |
| TexClothLe | ASEAN | Japan | 5830.71 | TexClothLe | Japan | China | -1509.65 |
| Electronic | ASEAN | China | 5745 | Machinery | Japan | China | -1475.58 |
| CerealsOil | ASEAN | Korea | 5293.68 | TexClothLe | China | Japan | -1400.3 |
| TrspEqNec | China | ASEAN | 5278.85 | TrspEqNec | ASEAN | ASEAN | -1055.03 |
| Machinery | Japan | ASEAN | 5220.82 | Chemicals | ASEAN | ASEAN | -1047.44 |
| Dairy | ASEAN | Japan | 5136.95 | Chemicals | Japan | China | -1000.34 |
| TexClothLe | ASEAN | India | 4520.61 | FerMetal | ASEAN | ASEAN | -951.3 |

Source: MIRAGE.

## 4.7. Impact on EU-25 Bilateral Trade

When comparing export and import impacts, the first remark to be made is that East Asia export gains and losses with the EU-25 are much more important than the EU-25 gains and losses vis-à-vis ASEAN (Table 10). Taking the most important changes in bilateral trade in both directions we see that China's export increase to the EU-25 is $7.5 billion of electronic goods, while the largest EU increase vis-à-vis ASEAN is only $1.4 billion of business services. The same remark is valid on the negative side: the largest decrease in exports is for ASEAN vis-à-vis the EU with a decrease of $5.2 billion in its electronic exports, while the largest decrease in EU exports is vis-à-vis India for less than $1 billion of primary products. This means that there is an intense substitution movement within East Asian countries in their access to the EU market. To illustrate this effect, consider the electronic sector: this is the main gain for China (+$7.6 billion) and also the largest loss for ASEAN (-$5.2 billion). India's major gains are made on machinery (+$3.3 billion) while they represent a major loss for ASEAN (-$2.5 billion).

In general, ASEAN loses market shares in the EU, while it is makes major inroads in the East Asian markets. For one part, this is due to the massive increase of ASEAN exports to all Asian markets. This increase is the direct result of tariff reduction and elimination within East Asia and it is compensated by a decline vis-à-vis the EU and a currency appreciation, which reduce ASEAN competitiveness.

Another remarkable evolution is the gains in EU exports to ASEAN and Japan in the service sector, first in business services, second in other services (electricity, gas, and water distribution), and third in international transport services. EU export losses are more diluted and concern first India then China and then ASEAN. These losses are due to the diversion effect and are made at the expenses of competitive European industries such as motor vehicles, machinery, and the chemical industry.

**Table 10: Major Changes in EU-25 Bilateral Trade ($millions)**

| **Main export changes** | | | | **Main import changes** | | | |
|---|---|---|---|---|---|---|---|
| BusinSer | EU25 | ASEAN | 1374,18 | Electronic | China | EU25 | 7554,12 |
| OthSer | EU25 | ASEAN | 1113,96 | Machinery | India | EU25 | 3344,74 |
| TrT | EU25 | ASEAN | 983,85 | Chemicals | India | EU25 | 1502,12 |
| Primary | EU25 | ASEAN | 530,91 | OthManuf | India | EU25 | 894,59 |
| Dairy | EU25 | ASEAN | 515,23 | MotorVeh | Japan | EU25 | 776,79 |
| FinanceIns | EU25 | ASEAN | 207,14 | TexClothLe | India | EU25 | 555,13 |
| TrT | EU25 | Japan | 164,05 | MetalProd | India | EU25 | 495,86 |
| OthSer | EU25 | Japan | 148,47 | TexClothLe | Korea | EU25 | 335,44 |
| LiveAnMeat | EU25 | ASEAN | 141,07 | MotorVeh | Korea | EU25 | 259,97 |
| BusinSer | EU25 | Japan | 117,27 | FerMetal | India | EU25 | 201,86 |
| ForWoodPap | EU25 | ASEAN | 109,71 | TrspEqNec | China | EU25 | 179,38 |
| Machinery | EU25 | Japan | 103,74 | FoodFats | ASEAN | EU25 | 165,7 |
| Chemicals | EU25 | Japan | 98,32 | MotorVeh | India | EU25 | 148,25 |
| BusinSer | EU25 | Korea | 72,16 | Primary | India | EU25 | 145,03 |
| AnProdWool | EU25 | ASEAN | 69,94 | OthSer | India | EU25 | 92,2 |
| | | | | | | | |
| Primary | EU25 | India | -967,02 | Electronic | ASEAN | EU25 | -5189,71 |
| OthManuf | EU25 | India | -807,47 | Machinery | ASEAN | EU25 | -2461,8 |
| MotorVeh | EU25 | ASEAN | -707,09 | TexClothLe | ASEAN | EU25 | -2317,1 |
| Machinery | EU25 | China | -705,1 | ForWoodPap | ASEAN | EU25 | -1154,64 |
| Chemicals | EU25 | China | -566,58 | Machinery | Japan | EU25 | -686,81 |
| TexClothLe | EU25 | Japan | -462,59 | MotorVeh | ASEAN | EU25 | -646,45 |
| Machinery | EU25 | India | -425,26 | Chemicals | ASEAN | EU25 | -575,28 |
| LiveAnMeat | EU25 | China | -414,17 | OthSer | ASEAN | EU25 | -564,18 |
| TrspEqNec | EU25 | ASEAN | -412,97 | BusinSer | ASEAN | EU25 | -544,94 |
| Dairy | EU25 | Japan | -410,85 | Electronic | Korea | EU25 | -501,33 |
| TrT | EU25 | India | -349,35 | OthManuf | ASEAN | EU25 | -480,01 |
| TexClothLe | EU25 | China | -326,9 | TrT | ASEAN | EU25 | -457,73 |
| TexClothLe | EU25 | India | -316,36 | Primary | ASEAN | EU25 | -301,25 |
| BusinSer | EU25 | India | -299,68 | Machinery | Korea | EU25 | -295,23 |
| TexClothLe | EU25 | Korea | -260,23 | Electronic | Japan | EU25 | -231,15 |

Source: MIRAGE.

# 5. SCENARIO 2: AN ASIAN SINGLE MARKET?

## 5.1. Main Results

This scenario assumes that there is a single global agreement between the ASEAN-10+4 countries (even if there are differing time patterns to achieve that goal, depending on the development level of the partners). Compared to SC1, SC2 hypothesis roughly increases the effects of the regionalisation process by 50% on average but with very large differences depending on the country or sector concerned (Table 11). For example, the gains of ASEAN-10 are reduced by around 40% compared to those of SC1 and those of its four partners are twice as high. The main factor behind ASEAN-10 weakening is that ASEAN has to face its partner's competition in third markets: Chinese competition in the Japanese market or Korean competition in the Chinese market etc. Therefore ASEAN-10 loses some market shares.

**Table 11: Macro-economic Results (% change)**

| | GDP (volume) | | | | Real effective exchange rate | | | | Welfare | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2010 | 2015 | 2020 | 2025 | 2010 | 2015 | 2020 | 2025 | 2010 | 2015 | 2020 | 2025 |
| ASEAN-10 | 2.62 | 3.03 | 3.33 | 3.50 | 1.80 | 1.54 | 1.53 | 1.60 | 0.99 | 1.43 | 1.75 | 1.98 |
| Japan | 1.99 | 2.28 | 2.40 | 2.46 | 1.20 | 1.41 | 1.53 | 1.61 | 0.37 | 0.41 | 0.43 | 0.45 |
| Korea | 4.22 | 3.92 | 3.65 | 3.47 | 1.82 | 1.65 | 1.68 | 1.73 | 1.91 | 1.64 | 1.31 | 1.04 |
| China | 2.13 | 2.18 | 2.07 | 1.94 | 0.16 | 0.15 | 0.06 | -0.03 | -0.35 | -0.27 | -0.23 | -0.21 |
| India | 3.87 | 4.12 | 4.07 | 4.04 | -3.16 | -2.88 | -2.80 | -2.73 | -0.44 | -0.37 | -0.31 | -0.23 |
| Hong Kong, Taiwan, Rest of East Asia | -0.58 | -0.79 | -0.84 | -0.83 | -0.37 | -0.38 | -0.40 | -0.43 | -0.28 | -0.42 | -0.47 | -0.49 |
| South Asia | -0.40 | -0.42 | -0.45 | -0.48 | -0.34 | -0.39 | -0.42 | -0.45 | -0.12 | -0.12 | -0.12 | -0.13 |
| EU - 25 | -0.10 | -0.11 | -0.11 | -0.11 | 0.00 | -0.01 | -0.01 | -0.01 | -0.01 | -0.02 | -0.02 | -0.02 |
| EFTA | -0.03 | -0.06 | -0.09 | -0.12 | 0.02 | 0.02 | 0.01 | 0.00 | -0.04 | -0.06 | -0.08 | -0.09 |
| Russian Fed | -0.23 | -0.24 | -0.27 | -0.32 | -0.24 | -0.25 | -0.28 | -0.32 | -0.12 | -0.16 | -0.19 | -0.22 |
| North Africa | -0.20 | -0.25 | -0.29 | -0.33 | -0.17 | -0.21 | -0.24 | -0.27 | -0.09 | -0.11 | -0.13 | -0.14 |
| Rest of Europe | -0.08 | -0.10 | -0.11 | -0.11 | 0.00 | -0.01 | -0.02 | -0.02 | -0.02 | -0.03 | -0.04 | -0.04 |
| USA | -0.08 | -0.06 | -0.06 | -0.06 | -0.03 | -0.01 | -0.02 | -0.03 | 0.00 | 0.00 | 0.00 | 0.01 |
| Canada | -0.03 | -0.03 | -0.05 | -0.07 | 0.01 | 0.03 | 0.02 | 0.00 | -0.03 | -0.03 | -0.04 | -0.04 |
| Mexico and Central America | -0.07 | -0.06 | -0.08 | -0.10 | -0.03 | 0.00 | 0.00 | 0.00 | -0.02 | -0.04 | -0.06 | -0.08 |
| South America | -0.29 | -0.33 | -0.37 | -0.41 | -0.29 | -0.32 | -0.36 | -0.40 | -0.07 | -0.09 | -0.10 | -0.11 |
| Australia and New Zealand | -0.26 | -0.30 | -0.33 | -0.37 | -0.19 | -0.22 | -0.25 | -0.28 | -0.10 | -0.13 | -0.15 | -0.16 |
| Rest of the World | -0.16 | -0.21 | -0.24 | -0.28 | -0.08 | -0.10 | -0.12 | -0.15 | -0.05 | -0.09 | -0.10 | -0.12 |

Source: MIRAGE.

All Asian FTA members are winners, but the gains are more equally shared than in SC1: India with a 4% increase (2.2% in SC1SC1), ASEAN and Korea both with 3.5% (4.4% and 0.5% respectively in SC1SC1), Japan with 2.46% (instead of 0.75%), and China with 1.9% (instead of 0.8% in SC1).

The rest of the world loses, with Hong Kong Taiwan as the main losing zone with –0.83% in GDP instead of –0.41%, followed by South Asia with 0.48% instead of 0.27%, South America with 0.41% compared to 0.31%, Australia New Zealand with 0.37% compared to 0.23%. EU-25 loses only 0.11% instead of 0.08%.

As mentioned earlier, real exchange rates tend to appreciate in Asia because GDP increases. In general a GDP rises partly because export increase more than imports and so the balance of trade needs to be re-established through RER appreciation. India is the sole exception to this rule here with an RER depreciation of 2.73% against 2.4% depreciation in SC1SC1. The same basic explanation as for SC1 results remains valid here.

RER major changes concern Japan and Korea. Their currencies appreciate by 1.61% and 1.73% respectively instead of 0.27% and 0.13% in SC1SC1. If we add volume and value change, we find an increase in GDP by 4.07% for Japan and 5.20% for Korea.

The Chinese currency remains almost stable.

For the rest of the world the decline in real gross product is compounded by currency depreciation. As a matter of fact, South Asia, Hong Kong Taiwan, South America and Australia New Zealand are the main losers in this scenario. Canada and the US countries minimise their losses while Europe EU-25, EFTA and Russia remain a little ahead of America.

As for welfare gains, ASEAN continues to improve its welfare more than Japan. It appears that ASEAN is able to improve its position on agricultural goods over time. China does worse in this scenario, probably because Japan and Korea benefit more from the reduction of industrial tariffs (see below section 5.5).

## 5.2. Trade in Agricultural Goods

Chinese agricultural exports are nearly tripled (Table 12)! Korea's exports increase by more than half and even Japanese exports grow by almost 20%, but needless to say, these increments in % do not mean much as their initial level was very low. Losses for the rest of the world are also twice as high, except for South Asia. Losses for the EU-25 go from –0.24% in SC1 to –0.99% in SC3, mostly the result of the diversion effect.

On the import side, the impacts are much less impressive compared to SC1SC1 as the only change is that there are more possible partners than in SC1. Where ASEAN-10 was in a position to take full advantage of the liberalisation process. The major difference is for Korean imports, which jump from a 23.7% increase in SC1 to a 72.8% increase in SC2. China becomes the main winner with a "cereals oil" gain of $13 billion and a $2 billion gain for rice.

**Table 12: Trade Impacts on Agricultural Goods (in %)**

| | Agricultural exports (volume) | | | | Agricultural imports (volume) | | | |
|---|---|---|---|---|---|---|---|---|
| | 2010 | 2015 | 2020 | 2025 | 2010 | 2015 | 2020 | 2025 |
| ASEAN-10 | 26.91 | 29.30 | 29.01 | 27.69 | 16.91 | 16.92 | 17.21 | 17.50 |
| Japan | 21.55 | 19.25 | 18.24 | 18.41 | 26.36 | 28.58 | 29.09 | 28.93 |
| Korea | 49.09 | 53.35 | 55.23 | 57.03 | 72.18 | 77.01 | 75.22 | 72.81 |
| China | 96.16 | 124.92 | 156.66 | 198.20 | 10.75 | 9.36 | 8.08 | 7.03 |
| India | 65.25 | 70.69 | 78.77 | 88.09 | 52.53 | 55.25 | 55.11 | 54.53 |
| Hong Kong, Taiwan, Rest of East Asia | 0.91 | 1.37 | 0.85 | 0.11 | -2.25 | -2.99 | -3.06 | -2.94 |
| South Asia | -6.55 | -7.78 | -9.30 | -11.12 | -1.70 | -1.82 | -1.87 | -1.90 |
| EU - 25 | -0.64 | -0.78 | -0.87 | -0.99 | -0.54 | -0.61 | -0.60 | -0.57 |
| EFTA | -0.71 | -0.86 | -0.95 | -1.03 | -0.53 | -0.60 | -0.62 | -0.62 |
| Russian Fed | -0.11 | -0.06 | -0.44 | -0.98 | -1.20 | -1.34 | -1.38 | -1.40 |
| North Africa | -1.09 | -1.10 | -1.08 | -1.09 | -0.81 | -1.02 | -1.11 | -1.17 |
| Rest of Europe | -1.08 | -1.17 | -1.29 | -1.48 | -0.41 | -0.51 | -0.51 | -0.47 |
| USA | -2.83 | -2.96 | -2.87 | -2.82 | -0.99 | -0.93 | -0.85 | -0.80 |
| Canada | -0.79 | -0.93 | -1.03 | -1.16 | -0.66 | -0.72 | -0.75 | -0.79 |
| Mexico and Central America | -1.07 | -1.08 | -1.03 | -1.01 | -0.42 | -0.40 | -0.40 | -0.38 |
| South America | -0.23 | -0.34 | -0.42 | -0.56 | -1.32 | -1.59 | -1.69 | -1.77 |
| Australia and New Zealand | -0.96 | -1.16 | -1.10 | -1.06 | -1.90 | -2.28 | -2.24 | -2.21 |
| Rest of the World | -1.87 | -1.94 | -2.05 | -2.21 | -0.94 | -1.07 | -1.10 | -1.13 |

Source: MIRAGE.

## 5.3. Agro-food Production and Prices

Apart from ASEAN-10, SC2 impacts on production and prices are more important than in SC1, being two to three times higher although the comparison between the two scenarios is based on small numbers in SC1 (Table 13).

In Korea's case, production increases by 12% while there was a decline in SC1 and prices decrease by 8%. In terms of prices, it seems that the decline in agricultural imported input prices translates into a decline in production prices for the food industry. These evolutions are impressive and result from the initial closed nature of the Korean market (as well as the Japanese market). A total removal of tariffs implies a very big shock where Korea switches to a net surplus in its bilateral trade with Japan.

For ASEAN-10, production still increases by 7.58% against 8.34%, when prices increase by 2.01% against 2.81% in SC1.

For the EU-25, the production decline is four times the decline registered in SC1 (–0.20% compared to -0.05%) with almost no impact on prices. This is one of the lowest declines in the world with the US at –0.15.

**Table 13: Impact on Production and Prices (in %)**

| | Agro-food Production (vol) | | | | Agro-food Production Prices | | | |
|---|---|---|---|---|---|---|---|---|
| | 2010 | 2015 | 2020 | 2025 | 2010 | 2015 | 2020 | 2025 |
| ASEAN | 3,02 | 5,92 | 6,98 | 7,58 | 3,08 | 2,15 | 2,01 | 2,01 |
| Japan | -0,62 | -0,92 | -0,99 | -0,99 | 0,06 | 0,31 | 0,49 | 0,58 |
| Korea | 12,94 | 14,59 | 13,19 | 11,64 | -7,68 | -8,79 | -8,41 | -7,92 |
| China | -0,28 | -0,45 | -0,59 | -0,69 | 0,71 | 0,52 | 0,32 | 0,13 |
| India | -2,96 | -3,92 | -4,05 | -4,10 | -3,41 | -2,92 | -2,85 | -2,79 |
| Hong Kong Taiwan Rest of Asia | -0,11 | -0,50 | -0,62 | -0,67 | -0,34 | -0,28 | -0,26 | -0,26 |
| South Asia | -0,15 | -0,28 | -0,33 | -0,36 | -0,39 | -0,41 | -0,43 | -0,46 |
| EU-25 | -0,06 | -0,13 | -0,17 | -0,20 | -0,03 | -0,02 | -0,01 | -0,01 |
| EFTA | -0,21 | -0,31 | -0,35 | -0,37 | -0,02 | 0,00 | 0,01 | 0,01 |
| Russian Federation | -0,58 | -0,85 | -0,89 | -0,90 | -0,33 | -0,26 | -0,25 | -0,28 |
| North Africa | -0,06 | -0,08 | -0,08 | -0,08 | -0,17 | -0,19 | -0,22 | -0,25 |
| Rest of Europe | -0,05 | -0,10 | -0,12 | -0,13 | -0,02 | -0,02 | -0,02 | -0,02 |
| USA | -0,08 | -0,14 | -0,15 | -0,15 | -0,07 | -0,02 | -0,01 | -0,02 |
| Canada | -0,22 | -0,43 | -0,51 | -0,57 | -0,08 | -0,01 | 0,00 | -0,01 |
| Mexico Central America | -0,08 | -0,15 | -0,17 | -0,19 | -0,09 | -0,01 | 0,00 | 0,00 |
| South America | -0,25 | -0,38 | -0,41 | -0,44 | -0,31 | -0,28 | -0,30 | -0,34 |
| Australia New-Zealand | -0,16 | -0,37 | -0,39 | -0,38 | -0,24 | -0,25 | -0,24 | -0,26 |
| Rest of the World | -0,09 | -0,19 | -0,23 | -0,27 | -0,12 | -0,12 | -0,13 | -0,16 |

Source: MIRAGE.

## 5.4. Trade of Industrial Goods

Percentage changes in the trade of industrial goods may seem modest compared to those seen for agriculture but they are significant nevertheless, notably because the volume of trade is much more important (Table 14). This is the case in particular for developed countries such as Japan or Korea where industrial products cover more than 95% of trade. In relative terms, Korea, Japan, and China multiply their gains respectively by less than five (from 3.4% to 15.1%), a little less than 3 and more than 2. India goes from a 20% increase in SC1 to a 29% increase in SC2.

ASEAN-10 sees its former gains reduced from 5.07% to 3.49%; these changes clearly reflect intense competition from the other four partners in the regional agreement.

Other countries tend to lose by 1 or 2 %, except Hong Kong & Taiwan, which are the main losers with a total loss of 4.8%. The impact on EU-25 exports is much more important than in SC1 with a decline of –1.32% compared to –0.69%; it is also higher than in the case of agriculture.

On the import side, changes are larger: Indian import changes are greatest with an increase of 43% instead of 28.10% in SC1, followed by China with almost 20% against 6.22%, and next is Korea with an 11.92% increase against 2.21% for SC1. For these countries opening the markets of Asian countries for industrial products appears to be more fruitful even than the opening of the market for agricultural goods. All non-ASEAN+4 countries reduce their imports less than their exports.

**Table 14: Impact on Industrial Trade (in %)**

| | Industrial exports (volume) | | | | Industrial imports (volume) | | | |
|---|---|---|---|---|---|---|---|---|
| | 2010 | 2015 | 2020 | 2025 | 2010 | 2015 | 2020 | 2025 |
| ASEAN-10 | 3.48 | 3.67 | 3.65 | 3.49 | 5.79 | 5.59 | 5.59 | 5.64 |
| Japan | 8.41 | 9.33 | 9.67 | 9.78 | 7.30 | 7.89 | 8.15 | 8.31 |
| Korea | 12.40 | 14.56 | 14.96 | 15.14 | 10.17 | 10.66 | 11.28 | 11.92 |
| China | 7.08 | 8.02 | 8.28 | 8.24 | 16.64 | 18.28 | 19.12 | 19.71 |
| India | 27.33 | 28.37 | 28.49 | 28.96 | 34.36 | 37.73 | 40.17 | 42.83 |
| Hong Kong, Taiwan, Rest of East Asia | -2.82 | -4.21 | -4.61 | -4.82 | -1.65 | -1.54 | -1.49 | -1.46 |
| South Asia | -1.29 | -1.25 | -1.12 | -0.98 | -1.09 | -1.04 | -0.96 | -0.89 |
| EU - 25 | -0.84 | -1.11 | -1.23 | -1.32 | -0.49 | -0.51 | -0.48 | -0.44 |
| EFTA | -0.77 | -1.08 | -1.27 | -1.43 | -0.45 | -0.51 | -0.52 | -0.52 |
| Russian Fed | -0.92 | -0.99 | -1.02 | -1.05 | -0.79 | -0.75 | -0.77 | -0.81 |
| North Africa | -1.47 | -1.83 | -2.00 | -2.16 | -0.86 | -0.98 | -1.05 | -1.11 |
| Rest of Europe | -0.95 | -1.22 | -1.28 | -1.29 | -0.47 | -0.49 | -0.48 | -0.44 |
| USA | -0.88 | -1.26 | -1.44 | -1.58 | -0.75 | -0.60 | -0.53 | -0.48 |
| Canada | -0.15 | -0.25 | -0.32 | -0.35 | -0.23 | -0.22 | -0.23 | -0.22 |
| Mexico and Central America | -0.45 | -0.50 | -0.55 | -0.57 | -0.48 | -0.52 | -0.53 | -0.53 |
| South America | -1.84 | -2.24 | -2.44 | -2.59 | -1.15 | -1.39 | -1.49 | -1.57 |
| Australia and New Zealand | -1.61 | -1.86 | -2.00 | -2.12 | -1.13 | -1.16 | -1.16 | -1.17 |
| Rest of the World | -0.76 | -0.90 | -0.93 | -0.94 | -0.49 | -0.50 | -0.48 | -0.45 |

Source: MIRAGE.

## 5.5. Terms of Trade

ASEAN-10, Japan, and Korea improve their terms of trade while China and India's terms of trade deteriorate (Table 15). However, ASEAN terms of trade increase less than in SC1, while in Japan and in Korea they increase more, in spite of a decrease in international industrial prices. With better access to new markets, Japan and Korea see their export prices increase relatively while they benefit from the decreases in international prices.

ASEAN loses ground to the benefit of its partners. On agricultural goods, this is due to two reasons: first, it appears that international prices are lower than in SC1; second, new competition reduces its capacity to increase its export prices.

India and China lose more with respect to their terms of trade than in SC1 due to intensification of competition.

**Table 15: Terms of Trade (% change)**

| | Terms of Trade | | | |
|---|---|---|---|---|
| | 2010 | 2015 | 2020 | 2025 |
| ASEAN | 0,90 | 0,82 | 0,82 | 0,87 |
| Japan | 1,39 | 1,51 | 1,50 | 1,48 |
| Korea | 0,67 | 0,61 | 0,81 | 0,97 |
| China | -0,71 | -0,84 | -0,91 | -0,94 |
| India | -3,99 | -3,92 | -3,85 | -3,82 |
| Hong Kong Taiwan Rest of Asia | -0,55 | -0,46 | -0,45 | -0,46 |
| South Asia | -0,32 | -0,28 | -0,28 | -0,29 |
| EU-25 | -0,05 | -0,04 | -0,03 | -0,02 |
| EFTA | -0,05 | -0,05 | -0,05 | -0,05 |
| Russian Federation | -0,16 | -0,15 | -0,17 | -0,20 |
| North Africa | -0,29 | -0,31 | -0,35 | -0,39 |
| Rest of Europe | -0,02 | -0,01 | 0,00 | 0,01 |
| USA | -0,17 | -0,11 | -0,09 | -0,08 |
| Canada | -0,05 | -0,04 | -0,04 | -0,04 |
| Mexico Central America | -0,10 | -0,10 | -0,11 | -0,10 |
| South America | -0,40 | -0,39 | -0,40 | -0,42 |
| Australia New-Zealand | -0,41 | -0,39 | -0,39 | -0,41 |
| Rest of the World | -0,10 | -0,09 | -0,09 | -0,09 |

Source: MIRAGE

More generally, it appears that for international prices (Table 16) there is a tendency to get lower prices than in SC1. Manufacturing prices in particular are declining, which tends to introduce a deflating trend in the world economy. These are the results of two main evolutions: reduced tariff brings lower prices for the consumer, higher production and trade tend to allow for more scale economies and therefore reduced prices.

**Table 16: World Prices for Developing Countries (% change)**

| | Impact on World Prices for Developing countries | | | |
|---|---|---|---|---|
| | 2010 | 2015 | 2020 | 2025 |
| MetalProd | - 0,29 | - 0,30 | - 0,40 | - 0,51 |
| FerMetal | - 0,33 | - 0,32 | - 0,38 | - 0,45 |
| OthManuf | - 0,13 | - 0,23 | - 0,32 | - 0,38 |
| Electronic | 0,05 | - 0,19 | - 0,25 | - 0,31 |
| Chemicals | 0,13 | - 0,15 | - 0,25 | - 0,28 |
| OthMetal | - 0,06 | - 0,13 | - 0,18 | - 0,24 |
| Machinery | 0,05 | - 0,04 | - 0,11 | - 0,17 |
| MotorVeh | - 0,48 | - 0,18 | - 0,15 | - 0,14 |
| TrspEqNec | 0,00 | - 0,08 | - 0,10 | - 0,14 |
| TexClothLe | - 0,15 | - 0,18 | - 0,13 | - 0,04 |
| Primary | 0,10 | 0,07 | 0,06 | 0,05 |
| Com | 0,09 | 0,08 | 0,08 | 0,07 |
| TrT | 0,15 | 0,10 | 0,08 | 0,08 |
| CerealsOil | 0,47 | 0,31 | 0,20 | 0,11 |
| FibersCrop | 0,13 | 0,17 | 0,18 | 0,17 |
| OthSer | 0,30 | 0,23 | 0,22 | 0,22 |
| FinanceIns | 0,25 | 0,25 | 0,26 | 0,26 |
| FoodFats | 0,76 | 0,40 | 0,31 | 0,30 |
| BusinSer | 0,21 | 0,31 | 0,32 | 0,32 |
| AnProdWool | 0,52 | 0,41 | 0,36 | 0,32 |
| BevTabacco | 0,67 | 0,45 | 0,40 | 0,39 |
| VegFruits | 0,28 | 0,35 | 0,42 | 0,49 |
| LiveAnMeat | 0,81 | 0,50 | 0,51 | 0,54 |
| ForWoodPap | 0,68 | 0,74 | 0,74 | 0,79 |
| Dairy | 2,54 | 1,17 | 0,92 | 0,80 |
| Fishing | 1,29 | 1,08 | 1,04 | 1,06 |
| Sugar | 2,96 | 1,51 | 1,32 | 1,20 |
| Rice | 1,83 | 1,61 | 1,69 | 1,81 |

Source: MIRAGE.

## 5.6. Major Changes in Bilateral Trade

One major interest of a multilateral[14] liberalisation is that every possible bilateral link benefits from accrued trade flows. This can be seen in Table 17 China Korea relations are noticeable as Korea increases by 19 $billions its textile exports to China while China increases its cereal oils exports by 14 $billions.

Among the declining flows, the story is even more clear cut as the EU-25 loses on both directions: as an exporter to China it loses in Machinery, Motor vehicles and textile clothing; as an importer EU-25 imports less from ASEAN in electronics and textiles.

[14] Multilateral is used here as opposed to bilateral as in SC1 which relates to a sum of 4 bilateral agreements centred on ASEAN, while here we talk of 24 bilateral agreements.

There are only three intra Asia cases where ASEAN loses: two cases are on the export side and are connected with Japan in primary goods and in electronics (to the benefit of China); one case is on the import side again in electronic to the detriment of Korea.

**Table 17: Major Changes in Trade ($million)**

**Bilateral Major Variations**

| Major Increases | | | | Major Decreases | | | |
|---|---|---|---|---|---|---|---|
| Primary | ASEAN | India | 21 074,4 | Electronic | ASEAN | EU25 | - 3 979,7 |
| TexClothLe | Korea | China | 18 913,3 | TexClothLe | ASEAN | EU25 | - 3 529,8 |
| CerealsOil | China | Korea | 13 555,6 | Machinery | Japan | EU25 | - 2 994,0 |
| Chemicals | ASEAN | China | 12 665,4 | Electronic | Korea | EU25 | - 2 505,0 |
| Machinery | Japan | China | 12 085,7 | Machinery | EU25 | China | - 2 421,6 |
| Electronic | China | EU25 | 11 699,1 | Machinery | Korea | EU25 | - 2 311,3 |
| MotorVeh | Japan | ASEAN | 11 474,2 | MotorVeh | EU25 | China | - 2 007,7 |
| FoodFats | ASEAN | India | 11 362,3 | TexClothLe | EU25 | China | - 1 465,7 |
| TexClothLe | China | Japan | 9 283,1 | TexClothLe | EU25 | Japan | - 1 449,2 |
| Electronic | China | ASEAN | 8 765,1 | Primary | ASEAN | Japan | - 1 431,7 |
| FoodFats | Korea | Japan | 7 773,3 | Machinery | ASEAN | EU25 | - 1 402,7 |
| Machinery | ASEAN | China | 7 511,1 | TrspEqNec | Korea | EU25 | - 1 391,6 |
| Electronic | China | Japan | 7 421,5 | Electronic | Korea | ASEAN | - 1 228,2 |
| TexClothLe | Japan | China | 7 292,8 | MotorVeh | Korea | EU25 | - 1 216,1 |
| MotorVeh | Japan | China | 7 257,1 | OthManuf | EU25 | India | - 1 204,0 |
| Sugar | ASEAN | Japan | 6 296,2 | Electronic | ASEAN | Japan | - 1 157,9 |

Source: MIRAGE.

Note: The Table shall be read as follow: ASEAN exports to India 21 $billions more in primary products.

## 5.7. Major Changes in EU-25 Bilateral Trade

The EU-25 still improves its position on services exports on the whole by 6 billions (partial sum of the gains shown in Table 18) while it loses on industrial products. The biggest losses are with China on machinery, motor vehicle, textile clothing, chemicals and live animals which represent a 7 $billion loss.

On the import side, the situation is less negative; it is much more a question of substitution between exporters than a real decline. An increase by $11.7 billion in Chinese exports of electronic goods to EU is almost balanced by a $4 billion decline in ASEAN exports, of $2.5 million in Korean exports, and of $1 billion for Japan.

It is the same for India: its gains in its exports of $4.4 billion in machinery are coupled with a decline of Japanese exports by $3.0 billion and Korean exports by $2.3 billion.

What is clear for the EU-25 is that it appears more marginal than ever in Asia. What is also clear is that China and India are making significant progress vis-à-vis the EU-25.

**Table 18: Major Changes in EU-25 Bilateral Trade ($million)**

**EU-25 Major Variations in Exports**

| Increases | | | | Decreases | | | |
|---|---|---|---|---|---|---|---|
| BusinSer | EU25 | ASEAN | 1 053,4 | Machinery | EU25 | China | - 2 421,6 |
| OthSer | EU25 | ASEAN | 825,9 | MotorVeh | EU25 | China | - 2 007,7 |
| TrT | EU25 | Japan | 769,5 | TexClothLe | EU25 | China | - 1 465,7 |
| TrT | EU25 | ASEAN | 765,1 | TexClothLe | EU25 | Japan | - 1 449,2 |
| TrT | EU25 | Korea | 693,8 | OthManuf | EU25 | India | - 1 204,0 |
| BusinSer | EU25 | Korea | 693,2 | Primary | EU25 | India | - 1 025,8 |
| OthSer | EU25 | Japan | 627,5 | Chemicals | EU25 | China | - 967,7 |
| BusinSer | EU25 | Japan | 517,5 | MotorVeh | EU25 | ASEAN | - 674,8 |
| Primary | EU25 | ASEAN | 483,7 | Machinery | EU25 | India | - 669,3 |
| Dairy | EU25 | ASEAN | 460,2 | LiveAnMeat | EU25 | China | - 579,7 |
| Chemicals | EU25 | Japan | 395,1 | TexClothLe | EU25 | Korea | - 485,8 |
| MotorVeh | EU25 | Japan | 315,6 | OthManuf | EU25 | China | - 450,9 |
| Machinery | EU25 | Japan | 302,4 | TrspEqNec | EU25 | ASEAN | - 414,3 |
| OthSer | EU25 | Korea | 279,4 | Dairy | EU25 | Japan | - 407,2 |
| FinanceIns | EU25 | ASEAN | 149,4 | TexClothLe | EU25 | India | - 382,2 |
| OthManuf | EU25 | Japan | 114,5 | TrT | EU25 | India | - 380,3 |

Source: MIRAGE.

**EU-25 Major Variations in Imports**

| Increases | | | | Decreases | | | |
|---|---|---|---|---|---|---|---|
| Electronic | China | EU25 | 11 699,1 | Electronic | ASEAN | EU25 | - 3 979,7 |
| Machinery | India | EU25 | 4 442,2 | TexClothLe | ASEAN | EU25 | - 3 529,8 |
| Chemicals | India | EU25 | 1 833,9 | Machinery | Japan | EU25 | - 2 994,0 |
| TexClothLe | China | EU25 | 1 262,6 | Electronic | Korea | EU25 | - 2 505,0 |
| TexClothLe | Korea | EU25 | 1 251,6 | Machinery | Korea | EU25 | - 2 311,3 |
| OthManuf | India | EU25 | 1 102,0 | Machinery | ASEAN | EU25 | - 1 402,7 |
| TexClothLe | India | EU25 | 635,2 | TrspEqNec | Korea | EU25 | - 1 391,6 |
| MetalProd | India | EU25 | 629,7 | MotorVeh | Korea | EU25 | - 1 216,1 |
| FoodFats | Korea | EU25 | 616,6 | Electronic | Japan | EU25 | - 1 020,9 |
| TrspEqNec | China | EU25 | 304,9 | MotorVeh | Japan | EU25 | - 675,3 |
| FerMetal | India | EU25 | 234,2 | ForWoodPa | ASEAN | EU25 | - 637,6 |
| FoodFats | ASEAN | EU25 | 206,4 | Chemicals | Japan | EU25 | - 561,2 |
| Machinery | China | EU25 | 182,2 | MotorVeh | ASEAN | EU25 | - 548,2 |
| Primary | India | EU25 | 159,2 | FerMetal | Korea | EU25 | - 488,2 |
| MotorVeh | India | EU25 | 141,9 | OthSer | Japan | EU25 | - 441,1 |

Source: MIRAGE.

## 6. SCENARIO 3: ASEAN-10 HUB, EXCLUDING SENSITIVE PRODUCTS

As describe before, this scenario is based on a limited liberalisation: most industrial goods are liberalised while many agricultural goods are not when classified as sensitive (or highly sensitive) products.

## 6.1. Main results

Except for surplus countries, Asian countries will very likely resist full liberalisation on agriculture products and in particular for some highly sensitive products such as rice and processed rice products, and sugar. For example, Japan, which is otherwise one of the most open countries, is expected to resist any change in these two areas. So this scenario of limited regional liberalisation is probably closer to reality than SC1 and SC2.

Limited liberalisation naturally reduces the impact of Asian integration on the world economy and notably for East Asian countries (Table 19). For ASEAN-10, which is at the centre of this scenario, the impact on GDP, RER and welfare is reduced by 46%-47% for the first year (2010) and 36-38% in the final year of the simulation, compare to SC1. Given the fact that in SC1, the impact on GDP and Welfare increases overtime, the diminishing gap between SC3 and SC1 for GDP implies that the long term impact of limited liberalisation remains quite important. One reason for such convergence is related to the declining part of agriculture in ASEAN economic activities. One may conclude that with the time passing and with the development of ASEAN countries, the resistance to agricultural liberalisation will diminish, but Japan and Korea (not to mention European countries) show how difficult it may be.

**Table 19: Macro-economic Results (in %)**

| | GDP (volume) | | | | Real effective exchange rate | | | | Welfare | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2010 | 2015 | 2020 | 2025 | 2010 | 2015 | 2020 | 2025 | 2010 | 2015 | 2020 | 2025 |
| ASEAN-10 | 1.78 | 2.33 | 2.63 | 2.77 | 1.26 | 1.28 | 1.32 | 1.39 | 0.79 | 1.28 | 1.59 | 1.78 |
| Japan | 0.20 | 0.20 | 0.20 | 0.19 | 0.25 | 0.24 | 0.23 | 0.22 | 0.02 | 0.03 | 0.04 | 0.04 |
| Korea | 0.33 | 0.38 | 0.38 | 0.39 | 0.33 | 0.37 | 0.35 | 0.33 | 0.07 | 0.07 | 0.06 | 0.04 |
| China | 0.43 | 0.47 | 0.47 | 0.45 | 0.00 | 0.00 | -0.03 | -0.06 | -0.08 | -0.08 | -0.08 | -0.07 |
| India | 2.70 | 2.60 | 2.46 | 2.37 | -2.02 | -1.98 | -2.05 | -2.09 | -0.11 | -0.22 | -0.26 | -0.25 |
| Hong Kong, Taiwan, Rest of East Asia | -0.19 | -0.27 | -0.30 | -0.31 | -0.10 | -0.11 | -0.14 | -0.16 | -0.09 | -0.11 | -0.12 | -0.13 |
| South Asia | -0.14 | -0.08 | -0.08 | -0.11 | -0.15 | -0.10 | -0.10 | -0.12 | -0.04 | -0.03 | -0.02 | -0.03 |
| EU - 25 | -0.05 | -0.05 | -0.05 | -0.05 | 0.00 | 0.00 | 0.00 | 0.00 | -0.01 | -0.01 | 0.00 | 0.00 |
| EFTA | -0.02 | -0.04 | -0.06 | -0.06 | 0.01 | 0.00 | -0.01 | -0.01 | 0.00 | -0.01 | -0.01 | -0.01 |
| Russian Fed | -0.06 | -0.07 | -0.09 | -0.10 | -0.04 | -0.05 | -0.06 | -0.08 | -0.02 | -0.03 | -0.04 | -0.05 |
| North Africa | -0.05 | -0.05 | -0.05 | -0.05 | -0.04 | -0.03 | -0.03 | -0.04 | -0.02 | -0.02 | -0.02 | -0.02 |
| Rest of Europe | -0.03 | -0.03 | -0.02 | -0.01 | 0.00 | 0.01 | 0.02 | 0.03 | -0.01 | -0.01 | -0.01 | -0.01 |
| USA | -0.04 | -0.04 | -0.03 | -0.03 | -0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 |
| Canada | -0.02 | -0.03 | -0.03 | -0.04 | 0.01 | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Mexico and Central America | -0.03 | -0.04 | -0.04 | -0.05 | 0.00 | 0.00 | 0.00 | 0.00 | -0.01 | -0.01 | -0.01 | -0.01 |
| South America | -0.10 | -0.11 | -0.13 | -0.15 | -0.09 | -0.09 | -0.11 | -0.13 | -0.02 | -0.03 | -0.03 | -0.04 |
| Australia and New Zealand | -0.07 | -0.10 | -0.12 | -0.13 | -0.02 | -0.04 | -0.06 | -0.08 | -0.03 | -0.03 | -0.03 | -0.04 |
| Rest of the World | -0.06 | -0.08 | -0.09 | -0.10 | -0.04 | -0.04 | -0.05 | -0.06 | -0.01 | -0.02 | -0.02 | -0.03 |

Source: MIRAGE.

More generally, it is easy to distinguish countries which “lose” more than 50% of the SC1 impact (Japan, South Asia, North Africa, USA, Canada, Mexico and Central America, South America) from the other countries (Table 20). Japan is a special case in this group as it is part of the liberalised region and therefore it is a “winner”. But for Japan, the GDP gain is only 0.19% compared to 0.75% in SC1, and the impact on the RER is reduced from 0.27% to only 0.22%. Japan benefits from easier access to ASEAN markets but continues to pay a very high price for its protected agricultural imports, which reduces its welfare gains to a very low level.

Other members of the group of most affected countries by exclusion are countries that are considered as important primary product exporters. Their losses in the initial scenario due to trade diversion are highly reduced in that SC3.

Among the less affected countries are Korea, Hong Kong Taiwan, European countries, EU-25 as well as EFTA and Russia. All were small exporters of primary products to Asia.

**Table 20: Difference in GDP variations between SC3 and SC1**

| | Gap between SC3 and SC1 GDP (%) | |
|---|---|---|
| | 2010 | 2025 |
| ASEAN-10 | 54.5 | 62.5 |
| Japan | 39.3 | 25.6 |
| Korea | 70.0 | 80.1 |
| China | 61.2 | 53.0 |
| India | 120.0 | 108.0 |
| Hong Kong, Taiwan, Rest of Asia | 70.9 | 74.3 |
| South Asia | 54.9 | 39.0 |
| EU-25 | 61.6 | 62.9 |
| EFTA | 67.9 | 62.4 |
| Russian Fed | 49.0 | 52.7 |
| North Africa | 40.2 | 22.6 |
| Rest of Europe | 70.9 | 19.4 |
| USA | 41.3 | 36.4 |
| Canada | 41.8 | 34.1 |
| Mexico, Central America | 41.8 | 34.1 |
| South America | 54.1 | 48.0 |
| Australia, New Zealand | 71.6 | 58.0 |
| Rest of the World | 78.2 | 68.2 |

Source: MIRAGE.

Note: this is the ratio SC3/SC1*100 so the reduction of impact is equal to (1-SC3/SC1)*100 that is to say 45.5 and 37.5% for ASEAN-10.

## 6.2. Agro-food trade

Excluding sensitive products mostly impacts on agricultural exports since it is mostly for these products that the liberalisation restrictions are introduced. The impact of trade liberalisation, compared to SC1, is almost halved for ASEAN, India, Japan and Korea exports. China is the only exception among the Asian partners, as its exports are not made up of sensitive products such as rice or sugar. South Asia, which is a rice exporter, still loses 10%, as it suffers from de facto reduced access to the Indian market.

Export losses for the rest of the world become almost negligible. For the EU-25 the export decline is now only –0.07%, compared to –0.24% in SC1.

The positive impact of trade liberalisation on agricultural import almost disappears for Japan and Korea (respectively from 21% and 24% to 0.9% and 2.1%), Asean-10 imports are also reduced by 2.4 times, while they remain very high for India (45.71% instead of 50.06%), a consequence of our definition of Indian sensitive products. In the case of India, one of the most affected trade flows is trade in fats with ASEAN (see Table 21) which is not classified as sensitive. In the end, India still imports a lot while its export gains are very limited so the Indian balance of food deteriorates.

**Table 21: Impact on Agricultural Trade (in %)**

| | **Agricultural exports (volume)** | | | | **Agricultural imports (volume)** | | | |
|---|---|---|---|---|---|---|---|---|
| | 2010 | 2015 | 2020 | 2025 | 2010 | 2015 | 2020 | 2025 |
| ASEAN-10 | 7.88 | 8.15 | 8.57 | 8.70 | 9.01 | 9.99 | 10.44 | 10.86 |
| Japan | 3.49 | 3.02 | 2.37 | 1.85 | 0.97 | 0.89 | 0.92 | 0.93 |
| Korea | 2.49 | 2.00 | 1.50 | 1.02 | 1.87 | 2.18 | 2.22 | 2.14 |
| China | 7.30 | 8.72 | 10.32 | 12.17 | 1.87 | 1.78 | 1.63 | 1.48 |
| India | 24.65 | 24.00 | 24.74 | 25.41 | 44.99 | 46.77 | 46.46 | 45.71 |
| Hong Kong, Taiwan, Rest of East Asia | 0.46 | 0.96 | 1.02 | 0.98 | -0.66 | -0.95 | -1.05 | -1.11 |
| South Asia | -5.76 | -7.02 | -8.54 | -10.27 | -0.51 | -0.35 | -0.33 | -0.41 |
| EU - 25 | -0.07 | -0.05 | -0.05 | -0.07 | -0.11 | -0.14 | -0.14 | -0.14 |
| EFTA | -0.08 | -0.03 | 0.00 | 0.01 | -0.08 | -0.12 | -0.12 | -0.13 |
| Russian Fed | -0.11 | 0.05 | 0.05 | 0.01 | -0.17 | -0.20 | -0.22 | -0.23 |
| North Africa | -0.47 | -0.45 | -0.45 | -0.46 | -0.19 | -0.22 | -0.22 | -0.22 |
| Rest of Europe | -0.24 | -0.26 | -0.33 | -0.41 | -0.10 | -0.09 | -0.04 | 0.01 |
| USA | -0.17 | -0.07 | -0.06 | -0.08 | -0.26 | -0.31 | -0.30 | -0.32 |
| Canada | -0.13 | -0.09 | -0.10 | -0.13 | -0.11 | -0.12 | -0.14 | -0.18 |
| Mexico and Central America | -0.12 | -0.08 | -0.05 | -0.01 | -0.08 | -0.08 | -0.07 | -0.06 |
| South America | 0.07 | 0.11 | 0.09 | 0.03 | -0.43 | -0.53 | -0.57 | -0.62 |
| Australia and New Zealand | -0.08 | 0.09 | 0.16 | 0.19 | -0.58 | -0.86 | -1.02 | -1.18 |
| Rest of the World | -0.58 | -0.48 | -0.44 | -0.41 | -0.28 | -0.37 | -0.40 | -0.42 |

Source: MIRAGE.

China registers a small increase in its imports not very different from SC1. Being a late comer in the WTO, China has had to comply with stricter rules than the former developing members of GATT. For example, its initial tariffs on agricultural goods were half those of India and Japan and less than a third of those of Korea.

The balance of agriculture trade improves for most countries out of Asia (except Rest of Europe and North Africa) as imports decline more than exports due in most cases to a RER depreciation.

## 6.3. Agro-food Production and Prices

Production and price changes in the agricultural sector are in general reduced compared to SC1. They fall almost by half for ASEAN-10. Changes in production are larger than those in prices.

Two important differences need to be explained: the first, prices in Japan and Korea increase respectively by 0.20% and 0.22%, instead of being reduced by 0.52% and 1.25% as in SC1. The reason is that Japan and Korea maintain very high tariffs on rice in SC3. The second difference is for India whose results are almost as negative on production and prices as in SC1. This is, as we stated previously, due to the classification of fats as a non-sensitive product.

For the other countries, the effects are almost negligible (-0.01% for EU-25 production and 0 % for prices) except for South Asia and South America which are still negatively affected by some diversion effects.

**Table 22: Agro-food Production and Prices (in %)**

| | Agro-food production (vol) | | | | Agro-food production price | | | |
|---|---|---|---|---|---|---|---|---|
| | 2010 | 2015 | 2020 | 2025 | 2010 | 2015 | 2020 | 2025 |
| ASEAN-10 | 1.59 | 3.42 | 4.09 | 4.46 | 1.81 | 1.49 | 1.47 | 1.52 |
| Japan | -0.02 | -0.03 | -0.04 | -0.05 | 0.24 | 0.23 | 0.21 | 0.20 |
| Korea | -0.10 | -0.15 | -0.19 | -0.24 | 0.21 | 0.25 | 0.24 | 0.22 |
| China | -0.10 | -0.14 | -0.16 | -0.17 | 0.02 | 0.01 | -0.03 | -0.06 |
| India | -2.94 | -4.01 | -4.20 | -4.28 | -2.76 | -2.39 | -2.43 | -2.47 |
| Hong Kong, Taiwan, Rest of East Asia | 0.09 | 0.03 | 0.00 | -0.01 | -0.04 | -0.04 | -0.06 | -0.07 |
| South Asia | -0.10 | -0.16 | -0.20 | -0.22 | -0.19 | -0.12 | -0.12 | -0.14 |
| EU - 25 | 0.01 | 0.00 | -0.01 | -0.01 | 0.00 | 0.00 | 0.00 | 0.00 |
| EFTA | 0.00 | -0.02 | -0.03 | -0.04 | 0.01 | 0.00 | 0.00 | 0.00 |
| Russian Fed | 0.00 | -0.02 | -0.05 | -0.07 | -0.04 | -0.05 | -0.06 | -0.07 |
| North Africa | 0.00 | -0.01 | -0.01 | -0.01 | -0.04 | -0.03 | -0.03 | -0.03 |
| Rest of Europe | 0.00 | -0.02 | -0.04 | -0.05 | 0.00 | 0.01 | 0.02 | 0.03 |
| USA | 0.01 | -0.01 | -0.01 | -0.02 | 0.00 | 0.00 | 0.01 | 0.01 |
| Canada | 0.00 | -0.04 | -0.07 | -0.09 | 0.01 | 0.01 | 0.01 | 0.01 |
| Mexico and Central America | 0.00 | -0.01 | -0.02 | -0.02 | 0.00 | 0.00 | 0.00 | 0.00 |
| South America | -0.10 | -0.17 | -0.20 | -0.23 | -0.10 | -0.08 | -0.09 | -0.11 |
| Australia and New Zealand | 0.09 | 0.07 | 0.07 | 0.08 | 0.00 | -0.02 | -0.03 | -0.04 |
| Rest of the World | 0.00 | -0.02 | -0.03 | -0.03 | -0.04 | -0.05 | -0.06 | -0.07 |

Source: MIRAGE.

## 6.4. Trade in Industrial Goods

The impact on the trade in industrial goods is not very different qualitatively from SC1, since the changes in tariffs do not directly affect industrial tariffs (Table 23). The effects are only indirect: first, the changes in the agricultural trade balance are smaller than in SC1 as are the changes in RER; second, the impact in terms of growth are also smaller as is demand for imported goods in general and for industrial goods in particular.

This is the case for Japan and Korea where the need to balance changes in agricultural trade is insignificant, so the increase of industrial exports is only 0.58%, 1.64% and 1.99% compared to 3.47%, 3.38% and 3.41% in SC1.

India remains the most affected for both exports and imports, first because of the initial tariffs on industrial products on the import side, and second because of the strong negative impact of trade liberalisation on agricultural trade that remains.

For non-Asian countries, EU-25 included, the balance of trade in industrial goods deteriorates as their exports decrease more than their imports, a symmetric evolution to trade in agricultural goods.

**Table 23: Trade in Industrial Goods (% change)**

| | Industrial exports (volume) | | | | Industrial imports (volume) | | | |
|---|---|---|---|---|---|---|---|---|
| | 2010 | 2015 | 2020 | 2025 | 2010 | 2015 | 2020 | 2025 |
| ASEAN-10 | 3,61 | 4,80 | 5,09 | 5,04 | 4,10 | 4,76 | 4,96 | 4,95 |
| Japan | 0,65 | 0,65 | 0,62 | 0,58 | 0,64 | 0,75 | 0,81 | 0,84 |
| Korea | 1,29 | 1,46 | 1,56 | 1,64 | 1,42 | 1,66 | 1,88 | 2,09 |
| China | 1,38 | 1,78 | 1,94 | 1,99 | 2,71 | 3,28 | 3,65 | 3,94 |
| India | 12,27 | 13,56 | 13,99 | 14,48 | 13,21 | 15,57 | 17,12 | 18,61 |
| Hong Kong, Taiwan, Rest of East Asia | -0,79 | -1,48 | -1,80 | -1,99 | -0,48 | -0,52 | -0,55 | -0,57 |
| South Asia | -0,08 | 0,25 | 0,42 | 0,51 | -0,33 | -0,12 | -0,01 | 0,04 |
| EU - 25 | -0,23 | -0,33 | -0,38 | -0,42 | -0,10 | -0,09 | -0,06 | -0,03 |
| EFTA | -0,22 | -0,36 | -0,45 | -0,51 | -0,10 | -0,12 | -0,11 | -0,10 |
| Russian Fed | -0,17 | -0,20 | -0,21 | -0,22 | -0,13 | -0,13 | -0,12 | -0,12 |
| North Africa | -0,33 | -0,34 | -0,33 | -0,33 | -0,17 | -0,13 | -0,10 | -0,09 |
| Rest of Europe | -0,25 | -0,24 | -0,17 | -0,11 | -0,08 | -0,03 | 0,02 | 0,07 |
| USA | -0,25 | -0,42 | -0,49 | -0,54 | -0,15 | -0,08 | -0,03 | 0,00 |
| Canada | -0,03 | -0,11 | -0,13 | -0,13 | -0,05 | -0,04 | -0,03 | -0,01 |
| Mexico and Central America | -0,10 | -0,12 | -0,12 | -0,12 | -0,09 | -0,09 | -0,08 | -0,07 |
| South America | -0,53 | -0,64 | -0,70 | -0,76 | -0,27 | -0,30 | -0,32 | -0,34 |
| Australia and New Zealand | -0,43 | -0,66 | -0,78 | -0,87 | -0,27 | -0,25 | -0,24 | -0,23 |
| Rest of the World | -0,20 | -0,22 | -0,22 | -0,23 | -0,10 | -0,04 | -0,01 | 0,02 |

Source: MIRAGE.

## 6.5. Terms of Trade

Although sensitive products are excluded from the liberalisation process, the pattern of price changes is not fundamentally different from SC1 (table 24). It is just smaller. Rice price still comes first (+1.11% against +2.83%); ferrous metals come last (-0.22 % against – 0.30%).

As mentioned in the SC1 comments, when a currency tends to appreciate, the terms of trade tend to improve; this is the case here for ASEAN, Japan and Korea (Table 25). On the other hand, countries with a depreciating currency tend to lose on their terms of trade: this is the case for the other countries. Net exporters of agricultural goods tend also to improve their

terms of trade as their prices grow more than the prices of industrial goods. This is why ASEAN has two positive pushes to improve of its terms of trade.

EU-25 as well as most non-Asian countries register a small deterioration in its terms of trade, resulting from the decrease in industrial prices.

**Table 24: World Prices for Developing Countries (% change)**

| | World Prices for Developing Countries | | | |
|---|---|---|---|---|
| | **2010** | **2015** | **2020** | **2025** |
| Rice | 0,57 | 0,83 | 0,98 | 1,11 |
| Fishing | 1,01 | 0,90 | 0,88 | 0,92 |
| ForWoodPap | 0,38 | 0,55 | 0,63 | 0,71 |
| LiveAnMeat | 0,50 | 0,37 | 0,43 | 0,49 |
| VegFruits | 0,20 | 0,28 | 0,35 | 0,42 |
| BusinSer | 0,19 | 0,37 | 0,40 | 0,40 |
| BevTabacco | 0,37 | 0,37 | 0,36 | 0,36 |
| FinanceIns | 0,24 | 0,30 | 0,32 | 0,33 |
| OthSer | 0,26 | 0,27 | 0,28 | 0,29 |
| AnProdWool | 0,19 | 0,22 | 0,25 | 0,28 |
| FoodFats | 0,69 | 0,35 | 0,29 | 0,28 |
| FibersCrop | 0,15 | 0,21 | 0,23 | 0,25 |
| TexClothLe | -0,06 | 0,07 | 0,15 | 0,23 |
| TrT | 0,14 | 0,17 | 0,17 | 0,17 |
| Sugar | 0,11 | 0,14 | 0,14 | 0,14 |
| Com | 0,11 | 0,13 | 0,14 | 0,14 |
| Chemicals | 0,11 | 0,11 | 0,09 | 0,09 |
| Primary | 0,05 | 0,06 | 0,06 | 0,05 |
| Dairy | 0,09 | 0,05 | 0,04 | 0,04 |
| TrspEqNec | 0,04 | 0,04 | 0,04 | 0,03 |
| MotorVeh | -0,02 | 0,02 | 0,02 | 0,02 |
| OthMetal | 0,04 | 0,00 | -0,03 | -0,06 |
| Machinery | 0,09 | -0,08 | -0,13 | -0,15 |
| CerealsOil | -0,16 | -0,14 | -0,15 | -0,15 |
| OthManuf | -0,03 | -0,08 | -0,13 | -0,17 |
| Electronic | 0,11 | -0,09 | -0,15 | -0,17 |
| FerMetal | -0,12 | -0,13 | -0,17 | -0,22 |
| MetalProd | -0,10 | -0,16 | -0,23 | -0,29 |

Source: MIRAGE.

As mentioned in the SC1 comments, when a currency tends to appreciate, the terms of trade tend to improve; this is the case here for ASEAN, Japan and Korea (Table 25). On the other hand, countries with a depreciating currency tend to lose on their terms of trade: this is the case for the other countries. Net exporters of agricultural goods tend also to improve their terms of trade as their prices grow more than the prices of industrial goods. This is why ASEAN has two positive pushes to improve of its terms of trade.

EU-25 as well as most non-Asian countries register a small deterioration in its terms of trade, resulting from the decrease in industrial prices.

**Table 25: Terms of Trade (% change)**

| | Terms of trade | | | |
|---|---|---|---|---|
| | 2010 | 2015 | 2020 | 2025 |
| ASEAN-10 | 0.68 | 0.67 | 0.68 | 0.73 |
| Japan | 0,16 | 0.15 | 0.14 | 0.13 |
| Korea | 0,16 | 0.15 | 0.13 | 0.10 |
| China | -0.28 | -0.35 | -0.38 | -0.39 |
| India | -2.33 | -2.36 | -2.39 | -2.41 |
| Hong Kong, Taiwan, Rest of Asia | -0.18 | -0.15 | -0.15 | -0.17 |
| South Asia | -0.09 | -0.02 | -0.01 | -0.01 |
| EU-25 | -0.02 | -0.02 | -0.01 | -0.01 |
| EFTA | -0.02 | -0.02 | -0.02 | -0.02 |
| Russian Fed | -0.02 | -0.02 | -0.03 | -0.03 |
| North Africa | -0.06 | -0.05 | -0.05 | -0.06 |
| Rest of Europe | -0.01 | 0.01 | 0.02 | 0.03 |
| USA | -0.04 | -0.02 | -0.01 | 0.00 |
| Canada | -0.01 | 0.00 | 0.00 | -0.01 |
| Mexico, Central America | -0.03 | -0.03 | -0.02 | -0.01 |
| South America | -0.10 | -0.10 | -0.10 | -0.11 |
| Australia, New Zealand | -0.11 | -0.09 | -0.10 | -0.12 |
| Rest of the World | -0.02 | -0.01 | 0.00 | 0.00 |

Source: MIRAGE.

## 6.6. Major Changes in Bilateral Trade in East Asia

In SC1, exports by ASEAN-10 to other Asian countries dominate export increases. This time, in SC3, it is a more diversified picture (Table 26): China and Japan share with ASEAN some of the first places among the leading changes in trade. China electronics exports to ASEAN and to EU-25 and Japan machinery export to ASEAN-10 are among the hits.

For export reductions, ASEAN-EU-25 comes first in textile, wood paper and chemical industries; second comes trade between ASEAN partners, such as Japan to China trade flows in machinery, or between Korea and China in machinery and electronics. The first changes are due to a diversion effect: exporting more to other Asian countries, ASEAN have to balance this progress by an appreciation of its currency which in the end reduces its export to the rest of the world and notably to the EU-25.

**Table 26: Major Changes in Bilateral Trade ($million)**

**Major Changes in bilateral trade scenario 3**

| increases | | | | decreases | | | | |
|---|---|---|---|---|---|---|---|---|
| FoodFats | ASEAN | India | 11 478,0 | TexClothLe | ASEAN | EU25 | - | 3 324,4 |
| Machinery | ASEAN | China | 10 608,2 | Machinery | Japan | China | - | 1 518,9 |
| Electronic | ASEAN | China | 7 149,3 | TexClothLe | Japan | China | - | 1 046,2 |
| Electronic | China | ASEAN | 5 642,6 | Machinery | Korea | China | - | 1 040,1 |
| TexClothLe | ASEAN | China | 5 418,3 | Machinery | EU25 | China | - | 850,3 |
| LiveAnMeat | ASEAN | India | 4 105,4 | Electronic | Korea | China | - | 840,6 |
| Electronic | China | EU25 | 3 934,7 | ForWoodPap | ASEAN | EU25 | - | 833,0 |
| Machinery | Japan | ASEAN | 3 890,5 | Primary | ASEAN | Japan | - | 751,4 |
| Chemicals | ASEAN | China | 3 765,4 | Chemicals | ASEAN | EU25 | - | 734,2 |
| Primary | ASEAN | India | 3 543,5 | OthManuf | EU25 | India | - | 691,4 |
| TexClothLe | Korea | ASEAN | 3 233,9 | Electronic | ASEAN | EU25 | - | 658,9 |
| LiveAnMeat | ASEAN | China | 3 068,1 | Chemicals | Korea | China | - | 613,4 |
| TexClothLe | ASEAN | India | 3 049,5 | Electronic | Japan | China | - | 577,9 |
| Machinery | ASEAN | India | 2 694,9 | Electronic | Korea | EU25 | - | 525,2 |
| Machinery | India | EU25 | 2 645,1 | Machinery | Japan | EU25 | - | 457,9 |
| TexClothLe | ASEAN | Korea | 2 450,1 | Machinery | EU25 | ASEAN | - | 451,6 |
| Machinery | Korea | ASEAN | 2 362,1 | Machinery | EU25 | India | - | 427,7 |

Source: MIRAGE.

## 6.7. Impact on EU-25 Trade

For the EU-25, as in SC1, the dominant changes are to be found on the import side. This is a consequence of the shock originating outside the EU-25. So the EU-25 is only reacting to the impact of an external shock.

On the ”import increase side” of the EU-25 (table 27), India comes first in machinery, chemicals, jewels (and other manufactures), and textiles, China comes second in electronics and textiles. Japan and Korea almost disappear from the list, compared to SC1. In particular, the rise of motor vehicles import from Japan and Korea vanishes. Because they protect their agricultural activities, these two countries do not need to export more industrial goods and in particular their most important ones as the motor industry.

On the “EU-25 imports decrease“ side, ASEAN is losing market shares (corresponding to 8 $ billion) to the benefit of India and China. So this is again more a question of substitution among Asian exporters than one of EU performance.

On the EU-25 export side, service exports (Business services, Other services, Transportation and Financial services) to ASEAN clearly come first and Japan for similar services comes second on the positive side. On the negative side, the EU-25 loses market share in machinery, chemicals etc. to China and even more to India.

On the whole the EU-25 balance of trade is strongly deteriorating vis-à-vis the two major emerging countries both by losing on the export side and by importing more from these two countries. A contrario the balance is improving vis-à-vis ASEAN on the export side through increasing services exports and on the import side decreasing imports.

**Table 27: EU-25 Major Changes in Bilateral Trade ($million)**

**EU-25 Major increases**

| In EU Exports | | | | In EU Imports | | | |
|---|---|---|---|---|---|---|---|
| BusinSer | EU25 | ASEAN | 923,4 | Electronic | China | EU25 | 3934,7 |
| OthSer | EU25 | ASEAN | 762,0 | Machinery | India | EU25 | 2645,1 |
| TrT | EU25 | ASEAN | 663,8 | Chemicals | India | EU25 | 947,9 |
| Primary | EU25 | ASEAN | 148,1 | OthManuf | India | EU25 | 658,0 |
| FinanceIns | EU25 | ASEAN | 143,5 | TexClothLe | India | EU25 | 528,4 |
| TrT | EU25 | Japan | 113,8 | MetalProd | India | EU25 | 385,2 |
| TrT | EU25 | Korea | 108,2 | TexClothLe | China | EU25 | 363,6 |
| BusinSer | EU25 | Korea | 92,0 | TexClothLe | Korea | EU25 | 291,9 |
| OthSer | EU25 | Japan | 84,3 | FoodFats | ASEAN | EU25 | 224,7 |
| Dairy | EU25 | ASEAN | 77,8 | FerMetal | India | EU25 | 143,3 |
| LiveAnMeat | EU25 | ASEAN | 77,1 | MotorVeh | India | EU25 | 130,6 |
| BusinSer | EU25 | Japan | 73,0 | OthSer | India | EU25 | 85,0 |
| Chemicals | EU25 | Japan | 69,9 | BusinSer | India | EU25 | 77,8 |
| ForWoodPap | EU25 | ASEAN | 69,8 | FibersCrop | India | EU25 | 68,7 |
| MotorVeh | EU25 | Japan | 53,4 | TrspEqNec | China | EU25 | 60,1 |

**EU-25 Major decreases**

| In EU Exports | | | | In EU Imports | | | |
|---|---|---|---|---|---|---|---|
| OthSer | EU25 | India | - 151,0 | FibersCrop | ASEAN | EU25 | - 142,1 |
| OthMetal | EU25 | India | - 155,4 | TrspEqNec | Korea | EU25 | - 181,3 |
| Chemicals | EU25 | India | - 158,7 | MotorVeh | Japan | EU25 | - 214,4 |
| Chemicals | EU25 | China | - 176,8 | Electronic | Japan | EU25 | - 216,6 |
| Electronic | EU25 | China | - 193,3 | MotorVeh | ASEAN | EU25 | - 267,7 |
| Primary | EU25 | India | - 221,5 | OthManuf | ASEAN | EU25 | - 286,5 |
| TexClothLe | EU25 | Korea | - 230,7 | Machinery | Korea | EU25 | - 294,4 |
| TexClothLe | EU25 | China | - 242,2 | TrT | ASEAN | EU25 | - 324,2 |
| TexClothLe | EU25 | India | - 251,4 | OthSer | ASEAN | EU25 | - 402,6 |
| BusinSer | EU25 | India | - 272,1 | BusinSer | ASEAN | EU25 | - 407,8 |
| TrT | EU25 | India | - 287,0 | Machinery | Japan | EU25 | - 457,9 |
| LiveAnMeat | EU25 | China | - 425,7 | Electronic | Korea | EU25 | - 525,2 |
| Machinery | EU25 | India | - 427,7 | Electronic | ASEAN | EU25 | - 658,9 |
| Machinery | EU25 | ASEAN | - 451,6 | Chemicals | ASEAN | EU25 | - 734,2 |
| OthManuf | EU25 | India | - 691,4 | ForWoodPap | ASEAN | EU25 | - 833,0 |
| Machinery | EU25 | China | - 850,3 | TexClothLe | ASEAN | EU25 | - 3 324,4 |

Source: MIRAGE.

## 7. GENERAL CONCLUSIONS

Up to 2001, date of China entering the WTO, there have been many words and discussions about regional integration within the Asia-Pacific region, but up to that event very few real progress have been made. On the one hand, the USA promoted a large “open regionalism” such as the APEC forum including the notion of Pacific Basin Community. This project failed to make progress five years ago when discussion entered sensitive issues such as the will of the USA to include agricultural goods liberalisation in the project and get firm commitments. On the other hand, Asian countries failed to create what Malaysia called an

"Asian caucus" limited to Asian countries, because the US and its allies Korea and Japan refused to support such initiative. As a kind of compensation, ASEAN enlarged to the four countries of Indochina and started to implement a limited but effective FTA between its members. Then came the financial crisis in 1997-98, the SARS issue as well as the tsunami or now the avian flu crisis. All these events have revealed the weakness of regional co-operation. China as an emerging trading power will in the long term challenge the US in Asia and therefore is looking for more regional integration. On the trade issue, its arguments are clear: it is one of the less protected economy in Asia, even more open than Japan on agriculture; its trade balance is negative with almost all its regional partners, access to China is vital for them, and China brings monetary stability and dynamism to the region.

There are naturally a lot of problems to be resolved before we can talk of a regional FTA in the region, and several road maps can be followed. We have explored two of them: creation of a fully multilateral and global (including agriculture) East Asian FTA, or creation of an ASEAN hub with a number of bilateral agreement with every member of the region. A weak version of these two projects with limitation for so called "highly sensitive " products has also been studied.

Agriculture is a central problem, but there is an almost general consensus within the region that agriculture should be treated apart. In many ASEAN countries, notably for the new members, agriculture still represents a major source of employment for many poor people. It is also true for China and even more so for India. Even in Japan and Korea, the rice question has become a kind of cultural and social identity matter more than an economic problem. Singapore and Hong Kong are the exceptions.

However, we show that it would be in the clear interest of ASEAN-10 to include agriculture, so we cannot exclude that there would be strong pressure within East Asian countries to include part of agriculture in any FTA agreement.

The main results of each scenario can be synthesised according to two macroeconomic measures which indicate what are the benefits for each country or zone in terms of its GDP value (summing GDP growth in volume with RER changes), see Table 28.

It is clearly in ASEAN-10 interest to have separate bilateral negotiations within the region and to include agricultural products as in SC1: this would give ASEAN easier access to its main natural partners and -as it is not directly in competition with them- this would bring the largest benefits to ASEAN. South-East Asia is specialised in agricultural and food production, which are in short supply elsewhere, and ASEAN is potentially very competitive. The main problem would be the lagging countries such as Vietnam or even worse Myanmar.

By contrast, Korea has the largest interest to negotiate a global agreement (this is also the Korean President's position), but excluding sensitive products SC4. This would give Korea a larger access to the Chinese and Japanese markets for its industrial products. A bilateral agreement with ASEAN including sensitive products would have hard consequences on

agriculture, surpassing the gains on industrial products, and would therefore be unacceptable; the worst scenario for Korea is SC2.

Japan in any case is a winner, even and especially if, the FTA includes a liberalisation of agriculture. The most advantageous scenario by far is SC2. Japan, which used -up to the late nineties- to be a strong advocate of multilateral agreement negotiated under the auspices of the GATT, has changed its policy towards regionalisation for two reasons: first, the world trend towards regionalisation as exemplified by NAFTA and the EU-25, second Chinese extremely active economic diplomacy within Asia raises the risk for Japan to be isolated. But Japan still has a serious handicap with its inability to come to terms to its Second World War legacies. Therefore it cannot promote a multilateral agreement within the region. Its farmers seem able to resist any change in its agriculture policy. So it is more likely that Japan will continue its strategy to negotiate bilateral agreements within the region which, in the end, is the worst scenario for Japan from a strictly economic point of view.

**Table 28: Preferred scenarios**

| | **Preferred scenario** | | | |
|---|---|---|---|---|
| | **SC1** | **SC2** | **SC3** | **SC4** |
| ASEAN-10 | 1 | 2 | 3 | 4 |
| Japan | 3 | 1 | 4 | 2 |
| Korea | 4 | 2 | 3 | 1 |
| China | 2 | 1 | 4 | 3 |
| India | 4 | 1 | 3 | 2 |
| **ASEAN-10 +4** | **14** | **7** | **17** | **12** |
| Hong Kong, Taiwan, Rest of East Asia | 2 | 4 | 1 | 3 |
| South Asia | 2 | 4 | 1 | 3 |
| **Rest of Asia** | 4 | 8 | 2 | 6 |
| EU - 25 | 3 | 4 | 1 | 2 |
| EFTA | 3 | 4 | 1 | 2 |
| Russian Fed | 2 | 4 | 1 | 3 |
| North Africa | 3 | 4 | 1 | 2 |
| Rest of Europe | 2 | 4 | 1 | 3 |
| **Europe** | **13** | **20** | **5** | **12** |
| USA | 4 | 3 | 2 | 1 |
| Canada | 4 | 3 | 2 | 1 |
| Mexico and Central America | 4 | 3 | 2 | 1 |
| South America | 3 | 4 | 2 | 2 |
| **America** | **15** | **13** | **8** | **5** |
| Australia and NewZeland | 2 | 4 | 1 | 3 |
| Rest of the World | 2 | 4 | 1 | 3 |
| ROW | **4** | **8** | **2** | **6** |
| **Total (average)** | 2.78 | 3.11 | 1.89 | 2.28 |

China is leading the regionalisation process for political reasons as well as for economic reasons. For political reasons: it wants to become a leader of Emerging Asia. For economic and strategic reasons, China needs to secure its vital supplies of raw materials. The USA assumes Japanese security, whereas China has to do it by itself. Being a late comer in WTO, it has had to engage in a radical reshuffling of its customs as well as of its tariffs which are the lowest among Asian developing countries, so this grants China with large room for manoeuvre. The best scenario for China is SC1.

But in this case it appears that China would become the focal point of the zone as its weight makes it the first partner to be dealt with. This may be diplomatically difficult to accept for the other partners.

For India, the major problem is to leave its traditional protectionist policy, which is one of the most restrictive in the world. So the shock could be devastating in social terms. Therefore it is probably reasonable to think of a much more gradual involvement of India in a process of liberalisation. And probably to define a more restrictive list of products to be more or less excluded from the liberalisation process. A global agreement with limitations for sensitive products SC4 would be the best from an economic and social point of view but from a purely economical point of view SC2 is better.

In the end, we see that ASEAN-10+4 countries have diverging interests. If only economic factors were taken into account, a simple average of their preferred scenarios would give SC2 as number one scenario for the region, and SC4 as number two, i.e. a multilateral agreement excluding sensitive products would be the second preferred scenario. But this result does not mean that these are the more plausible scenarios, as political factors are not taken into account.

For the EU-25, the consequences are limited: almost nil in terms of welfare. But considering the EU-25 position as already very weak in terms of market shares, it will even become weaker in Asia. Needless to say, Asia is the largest economic zone of the world and the most dynamic zone; it makes it more worrisome for the EU and calls for engaging negotiation with ASEAN 10. The most difficult part of a deal for the EU-25 would be the agricultural issue with ASEAN. Progress made at the multilateral level would greatly improve the EU's position. The preferred scenario for EU-25 would be the SC3: a bilateral agreement within Asia excluding sensitive products. The worst would be SC2. If bilateral agreement is possible within ASEAN+4 then it may also be easier for EU-25 to try to negotiate bilateral agreements with these countries or zones.

The United States has different interests: their favourite scenario would be SC4 (a multilateral East Asian scenario but excluding sensitive products). As the US is a producer of primary products, it would prefer to keep its market access on equal footing with Asian producers.

The rest of the world is rather close to European positions on SC3.

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