MUTRAP
EU - VIETNAM MUTRAP III
DỰ ÁN HỖ TRỢ THƯƠNG MẠI ĐA BIÊN

# REPORT

## IMPACT ASESSMENT OF FREE TRADE AGREEMENT ON VIET NAM'S ECONOMY

**ACTIVITY CODE: FTA-HOR**

**Final Report**

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## Acronyms and abbreviations

| | |
|---|---|
| ADB | Asian Development Bank |
| AANZFTA | ASEAN – Australia – New Zealand Free Trade Area |
| ACFTA | ASEAN-China Free Trade Agreement |
| AFTA | ASEAN Free Trade Agreement |
| AJCEP | ASEAN Japan Closer Economic Partnership |
| AKFTA | ASEAN – Korea Free Trade Agreement |
| AIFTA | ASEAN – India Free Trade Agreement |
| ASEAN | Association of South East Asian Nations |
| CGE | Computable general equilibrium |
| EU | European Union |
| FDI | Foreign Direct Investment |
| GATT | General Agreement on Tariffs and Trade |
| GDP | Gross Domestic Product |
| HS | Harmonized System |
| MFN | Most favoured nation treatment |
| RoO | Rules of origin |
| SITC | Standard International Trade Classification |
| SMEs | Small and Medium-sized Enterprises |
| SOE | State Owned Enterprise |
| SPS | Sanitary and Phyto-Sanitary |
| TBT | Technical Barriers to Trade |
| UN | United Nations |
| UNCTAD | United Nations Conference on Trade and Development |
| UNIDO | United Nations Industrial Development Organisation |
| WTO | World Trade Organization |

# Executive summary

### Introduction and methodology

For several decades now, since the introduction of the Doi Moi process in 1986, the Government of Vietnam has successfully pursued a policy of market price liberalisation, better exchange rate management, modernisation of the financial system, tax reforms and private competition for monopoly state-owned enterprises. In response, the economy has experienced rapid GDP growth, macroeconomic stability, trade and investment expansion, and substantial poverty alleviation.

Part of the continuing impressive performance of Vietnam's economy over the last decade has been attributed to improved trade policies centred on trade liberalisation in conjunction with greater international economic integration. Vietnam became a member of ASEAN in 1995 and acceded to the WTO in 2007, following substantial unilateral trade reform. Currently the focus of Vietnam's trade strategy, in the context of ASEAN, has been the negotiation of a number of bilateral and regional trade agreements.

While economic theory and empirical studies indicate that freer trade is associated with economic growth and development, the evidence on regional trade agreements is mixed. Granting trade preferences to some, but not all, trading partners might create more beneficial trade, but it could also divert imports to higher cost trading partners who are allowed to export to Vietnam duty free or at a concessional rate. Thus there is a tension between trade creation and trade diversion. And, of course, as trade incentives are altered, some industries will prosper while others will be challenged by the very import competition so welcomed by Vietnamese importers of inputs and their consumers, including exporters. Naturally, for these reasons, trade negotiators, policy-makers and businesses generally need to be informed in advance as to the likely consequences of Vietnam's trade negotiations.

This study therefore aims to assist Vietnam to identify the impact and efficiency of several Free Trade Agreements – especially, ASEAN-Korea, ASEAN-India, ASEAN-Australia New Zealand and AFTA -- through both *ex-ante* (before the event) and *ex-post* (after the event) of the main economic and social effects for Vietnam of these preferential trade agreements. The study also examines negotiated agreements with Japan and China and proposed agreements with the European Union, Turkey and Chile. An important by-product of the study is to draw out specific lessons for future trade negotiations.

Methodologically, the problem arises that while some of the Free Trade Agreements have certainly impacted the economy, so have many other things such as population growth, technological change, domestic policy and even the weather. Furthermore, while most of the components of Free Trade Agreements like AFTA have been implemented, other agreements, like AIFTA, remain largely only on paper and incomplete. Finally, what happens in one part of the economy directly due to changes in tariffs will affect what happens in other parts of the economy, very distant and difficult to know. So the challenge for researchers is to somehow identify how much of Vietnam's prosperity can or will in the future be attributable to the Free Trade Agreements, some that have yet to be implemented, and how much to other forces.

The methodological approach of this study is three-fold:

- Based on negotiated bilateral tariff reductions, use a Computable General Equilibrium (CGE) model of the global economy, including Vietnam separately, to estimate the potential or "outer envelope" effects of current and future FTAs.[1] The potential impacts may not be realised if the scenarios aren't implemented as modelled.
- Based on Vietnamese (and world) historical data over time, develop and implement econometrically a Gravity Model which relates bilateral trade to the size of the economies, their distance apart, FTAs, and various other stimulating and restraining variables to estimate the impact of the existing and largely implemented AFTA.
- Based on highly disaggregated Vietnamese (and partner countries) data and personal interviews with relevant parties, identify the industries and products most impacted, or likely to be impacted, by current and future FTAs.

The three approaches are complementary, reinforcing each other, and aim to identify the impact of FTAs from different viewpoints while controlling for the effects of outside forces (see table 1). The CGE model has the advantage that, using Vietnamese and other data, it can evaluate the impact of both current and future tariff changes, taking account of complicated interactions between markets economy-wide and even world-wide. The model explicitly incorporates international real capital flows (FDI) and recognises the underemployment of unskilled labour. The Gravity Model has the advantage that it can evaluate econometrically, using historical data, the impact on trade flows of an FTA that has been largely implemented, AFTA. The more disaggregated sectoral approach has the advantage that it more finely matches products with tariff lines and seeks to reveal through interviews, industry potential and problems not obvious in the data. The methodology was implemented in conjunction with data and research assistance from the Ministry of Industry and Trade and the Central Institute for Economic Management.

**Table 1 Complimentary methodologies**

| **Objective** | **Methodology** | | |
|---|---|---|---|
| | **Description** | **How it works** | **Results** |
| LOOKING BACK | Econometric analysis based on a gravity model | Gravity models explain and measure the effect on trade flows of a policy that has already been implemented. | Estimate the impact of the existing and already implemented FTAs (AFTA). Past policy impact may serve to understand the implications of a change in future policy. |

[1] PC (2010) found that most feasibility studies of FTAs estimated the maximum possible gains and therefore were "outer envelope" estimates of the actual gains. They listed various reasons for this, including: full coverage of all sectors; full pass on of tariff reductions; full utilisation of concessions (liberal ROOs); ignoring duty buyback; over estimating the benefits and under estimating the costs of some provisions. Furthermore, the models make some simplifying assumptions such as no growth in Vietnam from other sources like technical change or continued domestic policy reform.

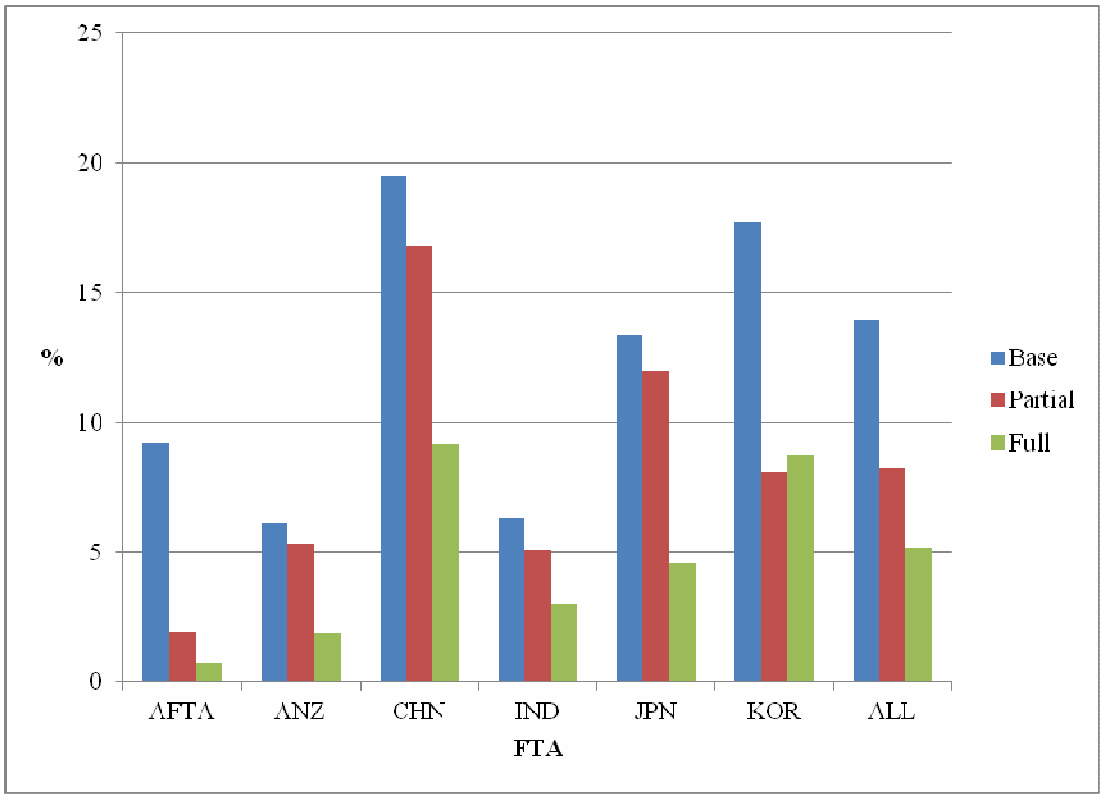
| | | | |
|---|---|---|---|
| LOOKING AHEAD | Computable General Equilibrium model (CGE) | Impact of current and future tariff changes, taking account the complicated interactions between different markets.<br>International real capital flows (FDI) and underemployment of unskilled labour considered. | Estimate the potential effects of current and future FTAs for the next years for future policies and negotiations |
| LOOKING DEEP | Qualitative analysis based on partial equilibrium model, and interviews | Identification of the industries and products most impacted at high disaggregated level. Identification of the products that potentially will benefit more from liberalisation. | Estimate the impact of FTAs on disaggregated industries and products and the potential for future negotiations |

**Implementation and findings**

The economic impacts of the FTAs were evaluated both for each FTA individually and in total. The core data was collected at the 6-digit level and used at various levels of aggregation (on an import weighted basis). The interviews with knowledgeable sources were conducted between April and August, 2010.

Vietnam's negotiated bilateral tariffs are shown in figure 1. Vietnam imposes import weighted tariffs as high as 20 per cent against some countries (China). The import weighted tariffs in 2012 and 2018 are shown in the second and third columns. The tariff reductions tend to be back-loaded into the implementation period, with the more significant reduction occurring after 2012.

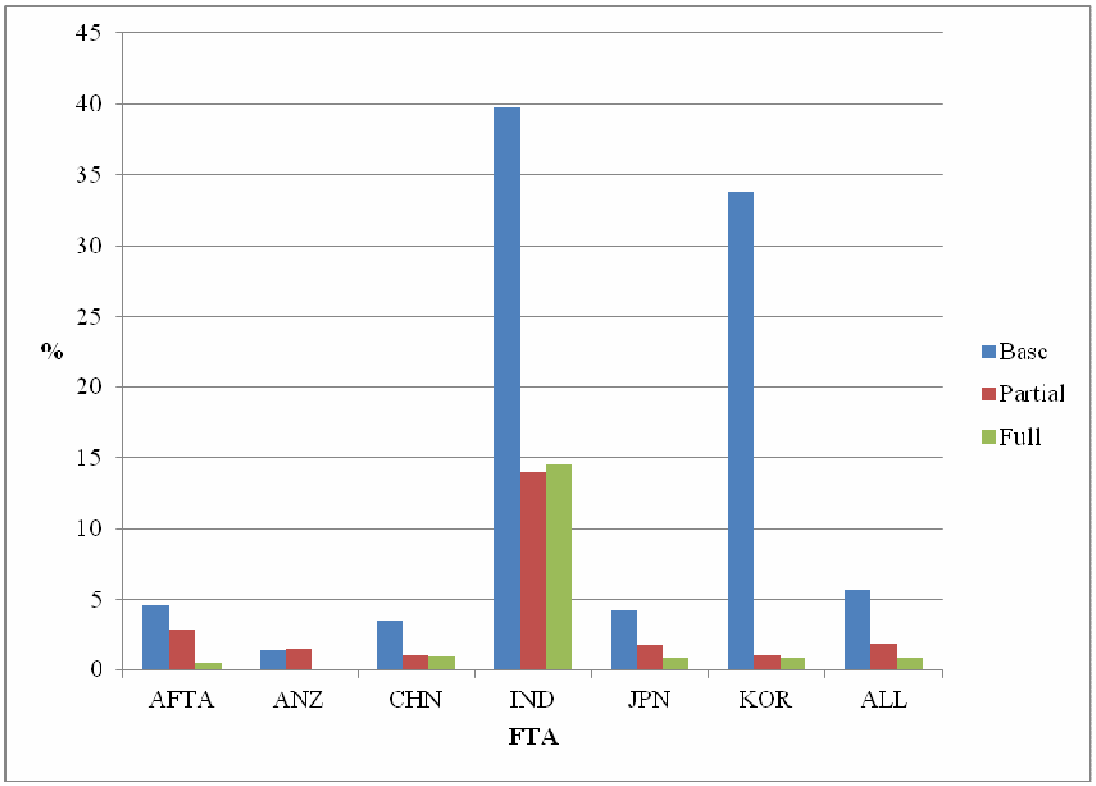
**Figure 1 Vietnam's base and simulated bilateral import tariffs**




Source: GTAP and authors' calculations. Tariffs are import weighted.

Tariffs on Vietnam's exports are much lower, around five per cent (see figure 2). China, Japan and Korea are the countries of major interest. Imported weighted tariffs can hide very high peaks, and the remaining exemptions after full implementation significantly reduce trade and welfare.

**Figure 2 Vietnam's base and simulated bilateral tariffs on exports**

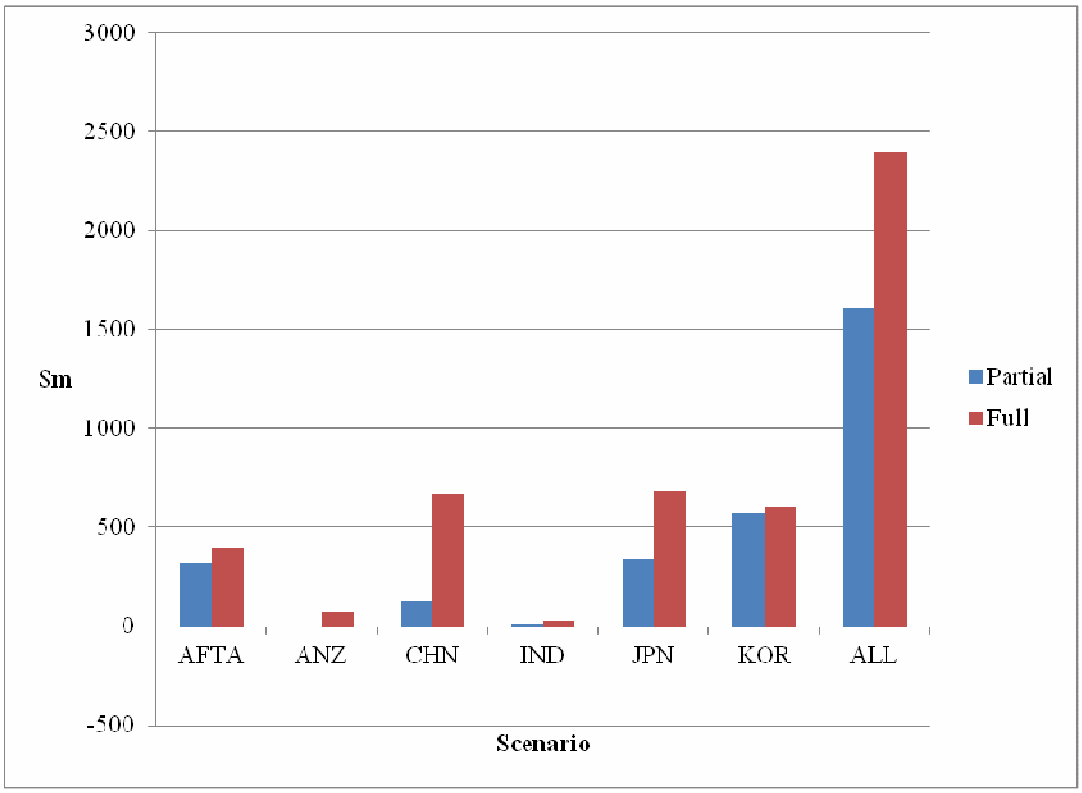



Source: GTAP and authors' calculations. Tariffs are export weighted.

The main quantitative findings for the Vietnamese economy include:

- The estimated "outer envelope" impact on economic welfare (a measure of national income) of all current FTAs by 2012 when partially implemented is $1600 million per year, about 3 per cent of base period national income (figure 3). This rises to $2400 million per year when the negotiated agreements are fully implemented. Full implementation of the agreements varies from 2015 to 2021. For both the partial and full implementation, estimated gains are largest for the FTAs with Korea and Japan, and AFTA. The China FTA contributes significantly in the long term. Gains from the FTA with India, Australia and New Zealand are negligible, consistent with the relatively low current levels of trade. The bulk of the gains between 2012 and 2018 results from increased trade with China and Japan.

**Figure 3 Vietnam's annual welfare impacts**




- Exports and imports increase by about 9 per cent with all FTAs partially implemented. The increase is largest for AFTA and Korea. This rises to 16 per cent with full implementation.
- Looking back, based on historical data following its inception, the Gravity Model estimates show that AFTA has been trade creating and is an open or non-diverting agreement in the sense that the robust estimated ratio of trade with non-members is high relative to that between members. In answering the important question of why it has been successful in creating trade, apart from its openness, other policy variables were found to be significant, such as ease of doing business and stability of the exchange rate.
- Tariff revenue from all sources is estimated to increase with full implementation of the FTAs. The increase is due to the existence of lower, but still positive tariffs, coupled with increased imports.
- Unilateral free trade liberalisation by Vietnam is estimated to bring large welfare gains of $1,738 million relative to the base year. That is, the gains for Vietnam from following an open port strategy like Singapore or Hong Kong are almost as large as pursuing the current regional liberalisation approach when fully implemented, $2,400 million.
- In three counter-factual potential FTA applications of interest, complete trade liberalisation with the EU would generate large estimated gains in welfare ($1,437 million), employment, wages, and FDI. However, this is an overestimate of the potential gains as the European Union is unlikely to fully liberalise its agricultural trade. Gains to Vietnam from an agreement with Chile or Turkey are estimated to be negligible.

The main findings for individual sectors of the economy include:

- The output of nearly all sectors is expected to increase with regional integration. This is due to the increase in labour utilisation and investment following implementation of the FTAs. Of course, some sectors grow relatively much faster than others, and some industries within sectors presumably contract.
- The overall increase in output and exports is comprised of significant increases for industries in the sectors of wearing apparel, textiles, manufactures, metal manufactures, electronics and leather products. There are also increases in the outputs of complementary inputs in the transport and communications services sectors. However, anti-dumping, technical barriers to trade and other non-tariff barriers may be used to stifle the growth in exports in these sectors.
- The changes in textiles, leather and apparel exports are particularly driven by liberalisation in Japan and Korea.
- Based on interviews, some industries within sectors were optimistic about their potential gains from trade liberalisation (footwear, leather, seafood, garments and textiles, vegetables and fruits, rubber, and coffee), while others were wary but resigned to adjusting to more import competition (autos, paper and pulp).
- More detailed sectoral analysis in the report details what products would expand in an FTA with specific partners, what products might be seen as being more challenged in such FTAs, and what sensitive products would benefit from greater liberalisation. The expected employment effects by sector are also shown for the individual FTAs.
- A number of industries reported common, cross-cutting problems, or constraints on taking advantage of negotiated FTA market access. These concerns related to:
    - Access to finance.
    - Labour retention and training.
    - Regulatory requirements and hindrances within Vietnam.
    - Non-tariff barriers related to SPS, TBT, and anti-dumping investigations abroad.

**Table 2 Potential impacts on individual products**

| **Agreement** | **Export Opportunities Example**<br>**Products** | **Import Challenges Example**<br>**Products** | **Liberalisation Opportunities Worth Pursuing Further** |
|---|---|---|---|
| ASEAN Free Trade Area | Rice, footwear, resource products, certain manufactured products | Resource products, certain processed agricultural products, motor vehicles | |
| China-ASEAN | Coffee, not roasted, footwear, rubber uppers, small motors, articles of glass, apparel | Vehicles, paper products, light and medium oils/preparations, certain iron products, woven fabrics, | Rice products, certain vegetables, starches, pepper |

| | | | |
|---|---|---|---|
| | | electrical machinery | |
| KOREA - ASEAN | Edible vegetables, coffee, fish and aquaculture, nuts and fruits | Vehicles, paper products, plastics, tobacco | Rice products, certain aqua-culture and fish, starches, certain vegetables |
| ASEAN – INDIA | Rubber, footwear, edible fruit and nuts, certain residues | Plastics, certain aquaculture, tobacco, paper products, iron and steel | Coffee, pepper |
| ASEAN – AU - NZ | Footwear, apparel, furniture | Certain fruit juices, dairy, bakery and sweet biscuits | Certain footwear and apparel |
| VNM – JAPAN | Textiles, footwear and apparel, meat products | Textiles, certain manufactured products | Rice products, certain vegetables |

Some implications from the analysis for issues of current concern in Vietnam include:

- Regional integration provides competition for importers but opportunities for exporters. Domestic producers who compete with importers need to look for niches for their products.
- The advantages of preferential market access tend to be temporary. Preferences will erode over time as countries join in other FTAs or liberalise multilaterally or unilaterally.
- The trade balance is a macroeconomic issue that is better addressed more directly than through bilateral trade policies.
- Unemployment, or redeployment based on specialisation and trade, requires a flexible economy that facilitates structural adjustment through expanding sectors drawing resources from other sectors. Governments can play a role in assisting adjustment.
- Rules of origin should be consistent between FTAs as well as simple, flexible and liberal.
- Countries might consider multilateralising tariff preferences, or reducing MFN tariffs to all countries. In this case, the tariff revenue that is lost to foreign exporters under preferential FTAs goes to domestic consumers and contributes to value added or similar broad-based taxes that exist or could be developed and would grow with the economy-wide impacts of trade liberalisation.

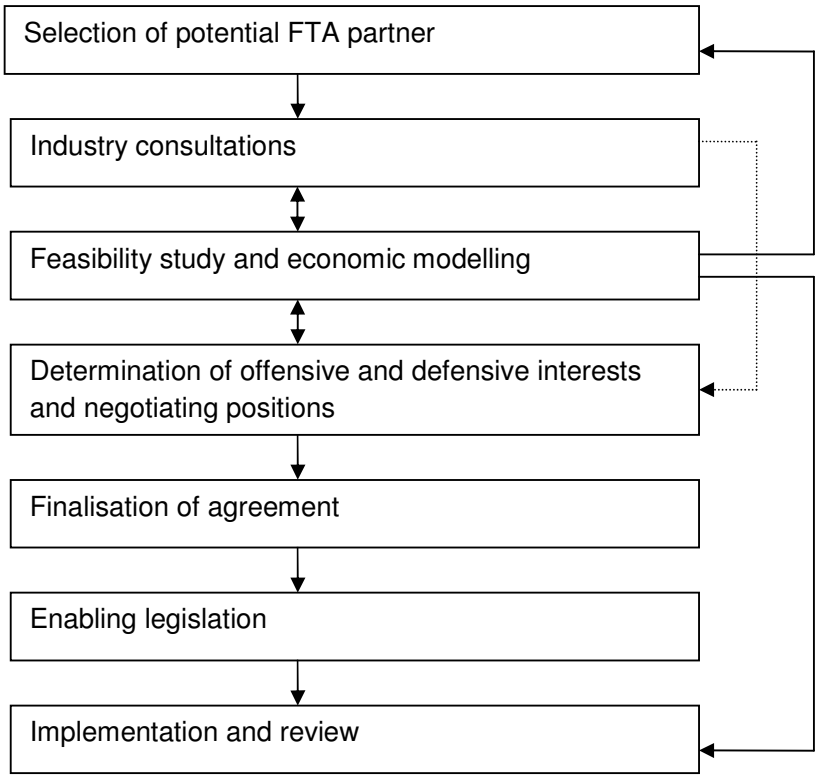
**Implications for trade negotiations and complementary domestic policy**

The role of the current study, focusing on feasibility studies and economic modelling, fits into the much broader overall strategy for FTA negotiation as outlined in box 1. The box shows the various stages involved in negotiating an FTA from the selection of partners to implementation and review. Economic modelling plays a role in selection of partners, industry consultation, determination of interests and negotiating positions and, finally, review.

While the focus of this study is on the implications of current and future FTA involvement, we note that the regional based liberalisation strategy is only one of several. For example, our calculations suggest that from the standpoint of economic welfare alone, unilateral and complete trade liberalisation dominates the current strategy. Nonetheless, a regional based approach negotiated and

implemented in the right way can be beneficial, and indeed may carry positive dynamic or political benefits within the region that are hard to quantify. So, we restrict ourselves here to the lessons that flow from our more focused analysis.

**Box 1 Strategy for FTA negotiations**




Based on the empirical research and interviews, several implications emerge for trade negotiations and policy formation. There are both general and specific lessons. Generally:

- In identifying potential FTA partners, size can matter. The agreements with Japan, Korea, China and potentially the EU seem to generate the most gains for Vietnam. The Trans-Pacific Partnership (TPP), not analysed here, could also generate significant gains.
- For trade negotiators, ambition should be important. The estimated gains from the constrained liberalisation of the current FTAs fall well short of the gains that would accrue from broader, deeper tariff cuts. In addition, unilateral free trade could secure substantially more benefits

than will flow from the current strategy. Exemptions are expensive in terms of economic welfare.

- The quantitative analysis is further supportive of a more ambitious liberalisation strategy in that most industries in most sectors are projected to expand, although some faster than others. This is because much of the adjustment to the freer trade environment is accommodated by an increase in the utilisation of currently underemployed labour with an increase in capital investment. Furthermore, the models unrealistically assume no growth in Vietnam from other sources like technical change or continued domestic policy reform. In fact, such growth is occurring in Vietnam and so adjustment for trade will be even less disruptive to factor markets.
- Also in support of more ambitious trade negotiations, interviews indicate that the private business sector is generally favourably disposed to freer trade and already in the process of formulating strategies to compete with more foreign competition both abroad and domestically.
- Tariff revenue under the current agreements will remain positive and is estimated to rise with partial liberalisation. However, it is noteworthy that while broader, deeper cuts (like unilateral free trade) will eliminate tariff revenue, the lower import prices will raise the real incomes of the general population and justify replacing lost tariff revenue with more economically efficient taxes.
- The estimates rely on reasonably efficient labour and capital markets so that export sectors can expand and prosper. This means that domestic policies which facilitate hiring and training of labour are warranted. Also, capital is scarce and for many industries finance is difficult to secure. So, policy-makers may want to be cautious in rationing capital to SOEs or specific sectors in a non-market way that crowds out private access to finance.
- FDI plays an important role in the economy as indicated by some of the quantitative modelling and the qualitative interviews. Again, domestic policy which creates an attractive investment environment is complementary to the open trade strategy. In contrast, encouraging FDI to jump over high trade barriers into protected markets is probably misplaced in that it encourages other scarce resources like skilled labour to move into high cost, less competitive, comparative disadvantage sectors.

More specifically, the research results generated here and the experience of other countries involved in regional trade agreements suggests some lessons for how Vietnam might want to negotiate future trade agreements. Any FTA can be harmful to Vietnam in theory, but incorporating some important rules of <u>design</u> and <u>implementation</u> will maximise any benefits. In particular:

- The FTA should be comprehensive. Current FTAs are too narrow in scope with too many exemptions.
- The FTA should incorporate open regionalism. For example, MFN tariffs should be lowered aggressively by the trading block in order to minimise the costs of trade diversion. Or, Vietnam could reduce MFN tariffs unilaterally. Current agreements, except for AFTA, neglect this.
- Another aspect of open regionalism is that Rules of origin should be minimal and simple. Cumulation and double cumulation should be easily available.
- The implementation of an FTA must insure against non-tariff measures substituting for reduced tariffs.
- It should be explicitly recognised that preference erosion will reduce the gains from any FTA.

- FTAs can be used to diminish the impacts anti-dumping actions, say through recognising Vietnam as a market economy, or as in ANZCERTA by dealing with these through competition policy.
- FTAs could facilitate trade by offering technical assistance on trade-related constraints.

# Chapter 1 The State of Play on Vietnam and ASEAN integration[2]

## 1.1 Introduction

Vietnam has become increasingly involved in free trade agreements in recent years after joining the ASEAN Free Trade Area (AFTA) in 1995. This has mainly been through its ASEAN membership. Apart from AFTA, Vietnam is now involved in FTAs of varying complexity with Australia-New Zealand, China, India, Japan and Korea. Other FTAs are being considered with Chile, the EU and Turkey.

This study is aimed at assisting Vietnam to identify the efficiency of specific FTAs in AANZFTA, AFTA, AIFTA, and AKFTA through assessments, before and after their full implementation, of the main economic impacts on Vietnam of these agreements. Others of the above listed FTAs are also assessed for comparative and other purposes. What is mainly addressed is the impact of negotiated and propose tariff reductions on trade in goods. The study is not aimed at examining services trade or investment.

More specifically (see the Terms of Reference in the appendices for more details), the study will help Vietnam's government and business community to:

(i) identify the sectors that have been and will be positively and negatively affected by the various trade agreements;

(ii) provide guidelines on how to support the full exploitation of positive effects and to cope with negative effects of these FTAs;

(iii) identify the commitments that should, or should not, have been made as related to the efficiency of these FTAs; and

(iv) advise the Government on a possible new strategy for future free trade agreement negotiations.

Three integrated and complementary approaches to assess actual and potential impacts of FTAs on Vietnam are applied. These are a general equilibrium analysis to determine the likely future impact of policy changes in tariffs; econometric gravity modelling linking past bilateral trade since the implementation of AFTA with the size of the economies, their "distance" apart and other stimulating and constraining factors, as well as an AFTA membership dummy variable; and sectoral level analysis to examine potential impacts at a highly disaggregated level.

Before describing and applying these methodologies in more detail it is useful to examine the state of play of Vietnam's involvement in trading arrangements and economic integration, and this is dealt with next.

## 1.2 Historical developments

After its reunification in 1975, Vietnam traded almost exclusively with the Council of Mutual Economic Assistance (CMEA), especially the Soviet Union, importing oil and low priced foods, and

[2] This chapter was prepared primarily by Federico Lupo Pasini of MUTRAP.

exporting rubber and consumer products. There were also preferential loans from the Soviet Union. In a sense, CMEA was like a not very open preferential trade agreement. By the late 1980s this situation had resulted in high inflation, imports much greater than exports, and shortages of food and other essentials (Do 2006).

The introduction of the "Doi Moi" process in 1986 involved market price liberalisation, better exchange rate management, modernisation of financial systems, tax reforms and private competition for monopoly state-owned enterprises in trade activities. Vietnam responded by achieving strong GDP growth, macroeconomic stabilisation (low inflation), trade and inward FDI expansion, and poverty alleviation. The continuing impressive performance of Vietnam's trade sector over the last decade has been attributed to improved trade policies based around liberalisation in conjunction with greater international economic integration (CIEM 2007).

After applying for membership in 1995, Vietnam became the 150$^{th}$ member of the WTO in November 2006, following substantial unilateral trade reform under "Doi Moi" and various bilateral and regional trade agreements that are discussed in detail next. Liberalisation was so significant in Vietnam leading up to WTO membership that additional liberalisation required for goods tariffs was limited to just a move from an average of 17.4 per cent to 13.4 per cent in 2019.

Beginning in 1995 with its accession to the ASEAN, Vietnam undertook a strategy of preferential economic integration with selected partners and has entered into a number of FTAs, mainly at the regional level and as part of ASEAN (including AFTA itself). In this respect, Vietnam has entered into five other free trade agreements as part of ASEAN, namely with China, India, Japan, Korea and Australia/New Zealand. Besides this, Vietnam has signed in 1995 a co-operation agreement with the European Communities (MUTRAP 2010) and a more significant Bilateral Trade Agreement with United States in 2000 that granted MFN treatment to Vietnamese products exported to United States. Vietnam has received GSP benefits but these are voluntary unlike concessions in FTAs and are due to expire in the United States at the end of 2010.

## 1.3 ASEAN Integration

The economic ambitions of ASEAN are reflected in the creation of the ASEAN Economic Community to make ASEAN a region with free movement of goods, services, including investment, skilled labour and freer flows of capital by 2015. In this respect, the key instruments of integration so far in ASEAN are the removal of tariffs, the progressive liberalisation in the services sector, and a more open and transparent investment climate.

In 1995 Vietnam joined the **ASEAN Free Trade Area (AFTA),** which was established in 1992. The AFTA was based on the Agreement on the Common Effective Preferential Tariff Scheme (CEPT) for the ASEAN FTA, which was the trade instrument for the scheduling of tariff reductions. The agreement divides products on different tracks based on the sensitivity of the single products in order to grant policy space to the governments. The CEPT divides products between those in the general exclusion list, the temporary exclusion list and the sensitive list. From 2010 all the applied tariffs for the ASEAN-6 are reduced to 0, while Cambodia, Lao PDR, Myanmar and Vietnam are expected to reach that target by 2015.

PC (2010), states that "given the importance of non-member trade, AFTA has features that lead it to be considered open or preferential light such as:

(i) low Regional Value of Content (RVC) Rules of Origin of 40 per cent;

(ii) the ability of members to offer tariff reduction on an MFN basis and still qualify for preferential access to other member markets; and

(iii) exclusion of (sensitive) agricultural products.

The process of integration in goods received a further acceleration at the 14th ASEAN Summit in 2009 when the ASEAN leaders signed a new ASEAN Trade in Goods Agreement (ATIGA). ATIGA integrates all existing ASEAN initiatives related to trade in goods into one comprehensive framework. It contains a number of key features that are expected to enhance transparency, certainty and predictability within the ASEAN legal framework (e.g. dispute settlement), and enhance ASEAN Free Trade Area's rules-based system, which is of importance to the ASEAN business community. After having reduced substantially all the tariff barriers, in the ATIGA the focus of the attention shifted towards all the other impediments to free flows of goods, such as non-tariff barriers, trade facilitation and other barriers to the broadening and deepening of the economic integration. In this respect, in addition to Chapter on tariff liberalisation (Chapter 2 with related Rules of Origin in Chapter 3 and associated annexes), ATIGA contains chapters on Non-tariff measures, (Chapter 4), Trade Facilitation (Chapter 5), Customs (Chapter 7), Standards, technical regulations and conformity assessment procedures and Trade remedy measures (Chapter 8). PC (2010) point out that unlike CEPT, ATIGA includes agriculture and runs the risk of becoming more closed than the CEPT. It does still contain the other openness features of CEPT plus a choice of ROOs (the original 40 per cent RVC or a Change of Tariff (CTC) classification at the 4-digit level).

**Table 1.2 ASEAN FTA exemptions**

| **Lists** | **Countries** | **Tariffs and deadlines** | |
|---|---|---|---|
| General Exclusion List: This list of products is permanently excluded from CEPT scheme due to national security, public moral and health reasons. | VN (example): Poppy seeds, opium powder, tobacco and cigarettes, petroleum and derivates, waste pharmaceuticals, explosives and fireworks, residual of chemical wastes, ASEAN6 (99,4%) military weapons, 1998: 20%; | | |
| Inclusion list (IL): all non-tariff and quantitative restrictions elimination. | | 2003: 0-5% | |
| | | 2010: 0% | |
| A "temporary exclusion" list existed: however, all the products have been moved to IL | CMLV (98,6%) | VN: 0-5% (2006)<br>L/M: 0-5% (2008)<br>C: 0-5% (2010) | All: 0% (2015) or 2018 |
| Sensitive and highly sensitive (unprocessed agricultural products which will be phased into Inclusion List according to the following schedule) | ASEAN6 (28 products in total, 0, 0005% of products) | 0% - 2010 (Rice and Sugar, Indonesia and Rice, Philippines) | |
| | VN (0 products) | 0% 1.1.2013 | |
| | L/M (0 Laos, 11 Myanmar) | 0% within 1.1.2015 (Oats, Sugar, M) | |
| | Cambodia (54 products) | 0% within 1.1.2017 (Race Horses, Live Swine, Some poultries, some meats) | |

ASEAN countries signed in 1995 the ASEAN Framework Agreement of Services (AFAS) and created the ASEAN Investment Area (AIA) in 1998, but services and investment are outside the Terms of Reference of this project set out in an appendix (for more details on ASEAN services liberalisation see MUTRAP 2010).

## 1.4 ASEAN + Free Trade Agreements

The "ASEAN plus free trade area" (ASEAN +) is an economic zone of variable geometry with different levels of economic integration created by separate FTAs concluded by ASEAN with strategic economic partners in the Asia-Pacific region. With ASEAN at the centre, playing the pivotal role in the trade liberalisation of the region and the only Member that benefits at the fullest scale from this large area of trade and investment liberalisation, the ASEAN + places itself as the largest economic zone in terms of population[3].

The ASEAN FTAs are five, and they total up to three billion consumers. The FTAs have been selectively negotiated with the most important economic partners in the region: China, India, Korea, Japan and Australia-New Zealand. Not all the agreements live up to a comprehensive economic liberalisation. Indeed, in a few cases the trade in goods represent the only significant part of the liberalisation strategy, while in others the degree of openness is such to embody also IPRs and Competition. These differences produce a substantial asymmetry of economic integration between the various agreements which undermines the economic benefits of a larger ASEAN + area.

The ASEAN Economic Community places itself as the hub of these preferential economic arrangements being the common denominator of all the agreements and arguably the sub-area with the deepest level of economic and political integration, which goes well beyond pure tariff reduction. In fact in some of the 6 agreements that compose the area, the liberalisation in goods is only one of the various components of a wider strategy of economic integration that relies also on services, investment and in few cases, also competition and dispute settlement.

**Table 1.2 Regulatory Integration in the various FTAs**

| | **ASEAN Economic Integration** | **ASEAN - China** | **ASEAN - Korea** | **ASEAN - India** | **ASEAN - Japan** | **ASEAN – Aus/New Zealand** |
|---|---|---|---|---|---|---|
| **Tariff Reduction and Quantitative Restrictions** | Yes | Yes | Yes | Yes | Yes | Yes |

[3] For an overview of the business and economic implications of the various ASEAN Free Trade Agreements see M. Kawai and G. Wignaraja (2009) and, M. Kawai and G. Wignaraja (2009). For an alternative perspective see R. Sally (2010).

| | | | | | | |
|---|---|---|---|---|---|---|
| **Rules of Origin** | Yes | Yes | Yes | Yes | Yes | Yes |
| **Sanitary and Phytosanitary** | | | | | Yes | Yes |
| **TBT** | | | | | Yes | Yes |
| **Safeguards** | | Yes | Yes | Yes | Yes | Yes |
| **Antidumping** | | | | | | Yes |
| **Services** | Yes | Yes | Yes | To be neg. | To be neg. | Yes |
| **Investment** | Yes | Yes | Yes | To be neg. | To be neg. | Yes |
| **Competition** | | | | | | Yes |
| **Intellectual Property** | | | | | | Yes |
| **Dispute Settlement** | Yes | Yes | Yes | Yes | Yes | Yes |
| **Customs** | | | | Yes | | Yes |

**The ASEAN – China Free Trade Agreement (ACFTA)** is the result of a multistep process that begun in 2002 when the Chinese and ASEAN leaders signed the Framework Agreement on Comprehensive Economic Cooperation between ASEAN and China. The framework agreement, which promotes liberalisation on trade in goods, laid down the basis for further negotiations (Wang 2007), which ultimately resulted in the signing of the Agreement on Trade in Goods and the Agreement on Dispute Settlement Mechanism of the Framework Agreement. The ACFTA goes further and contains also the Agreement on Trade in Services and the Agreement on Investment. The Agreement on Trade in Goods was signed in 2004 and implemented in 1 July 2005 by the ASEAN countries and 20 July 2005 by China. The Trade in Services Agreement entered into force in July 2007. Under this agreement, services and services suppliers/providers in the region will enjoy improved market access and national treatment in sectors/subsectors where commitments have been made. The Investment Agreement was implemented on 15 February 2010. The Agreement will help to create a more transparent and facilitative environment, and give companies from ASEAN a competitive edge to tap in on thriving opportunities in China.

**Key Structural Elements**

Under the Trade in Goods agreement, participating countries committed to reduce and/or eliminate tariff under five different schedules. These products are organised into five different lists:

1) Early Harvest Program
2) Normal Track
    A. Normal Track 1
    B. Normal Track 2
3) Sensitive Track

A. Sensitive List
B. Highly Sensitive List

Part of the Framework Agreement was negotiated as an early harvest program. This program allowed for the accelerated reduction of tariffs on certain products before the onset of the FTA. The program reduced tariffs on these products over 3 years: to 10 per cent by 2004, to 5 per cent by 2005 and zero tariffs by 2006. China did not list any products as sensitive under the early harvest program.

**Table 1.3 ASEAN and China FTA**

| **Track** | | **Products** | | **Tariffs and deadlines** |
|---|---|---|---|---|
| Early Harvest | | Agriculture (HS 01-08) | | 0% since 1.1.2006 |
| Normal (I and II) | ASEAN-6 + China (0% 1.1.2012) | All listed in "normal track" | NT I | 0% since 1.1.2010 except NT II |
| | | | NT II | 150 tariff lines (0% 1.1.2012) |
| | CMLV (0% 1.1.2018) | 50% of Tariff lines | | 0-5% since 2009 (Vn), 2010 (My, L), 2012 (C) |
| | | 40% of Tariff lines | | 0% within 1.1.2013 |
| | | All the product listed | | 0% since 2015 except 250 TL (0%in 2018) |
| Sensitive Track | ASEAN-6 + China (max 400 TL and 10% of imports) | Products listed in the ST | | 20% not later than 1.1.2012<br>0-5% not later than 1.1.2018 |
| | CMLV (max 500 Tariff lines - TL) | Products listed in the ST | | 20% not later than 1.1.2015<br>0-5% not later than 1.1.2020 |
| Highly sensitive | ASEAN-6 + China (max 40% of ST TL or 100 TL max) | Products listed in HST | | 50% not later than 1.1.2015 |
| | CMLV (max 40% of ST TL or 150 TL max) | Products listed in HST | | 50% not later than 1.1.2018 |

Under the Trade in Goods Agreement, the 6 original ASEAN members and China had to eliminate tariffs on 90 per cent of their products by 2010. The remaining ASEAN countries, Cambodia, Lao PDR, Myanmar and Vietnam, have until 2015 to do so. The remaining 10 per cent of tariff line items are deemed sensitive by parties and will be reduced at a slower pace. There is no physical list for products under Normal Track 1, in other words, for products that are not found in Normal Track 2, Sensitive List, and Highly Sensitive List, it will automatically fall under Normal Track 1.

- If a country lists a product in the normal track, automatically it benefits from a Normal Track treatment from all the other Members (even though other Members inserted the same product in the ST or HST).
- If a country list a product in the ST or HST, it cannot benefit from the NT treatment even if the other Members listed the same product in the NT.
- In case a product listed in the ST is subject to a tariffs of 10 per cent or lower, the country benefit from the NT treatment by other Members.

Similar to the ACFTA, **the ASEAN – Korea Free Trade Agreement (AKFTA)** is structured through three layers of liberalisation. The most important part is the Agreement on Trade in Goods with the Annexes on the Modalities of Tariff Reduction and the one on Rules of Origin. The Agreement contains also the Agreement of Trade in Services with the Annex on Financial Services and the Agreement on Investment.

The ASEAN Korea Free Trade Agreement (AKFTA) was proposed in October 2003 at the ASEAN-Republic of Korea Summit held in Bali, Indonesia. Negotiations begun in 2005 and the Trade in Goods chapter of the AKFTA entered into force in June 2007. It was agreed that ASEAN-6 and Korea should eliminate tariffs for 90 per cent of all products by 2010. Thailand signed the Accession Protocols to the Trade in Goods and the Trade in Services Agreements under the AKFTA on 27 February 2009.

**Key Structural Elements**

The product list for concession is classified under:
1) Normal Track
   A. Normal Track 1
   B. Normal Track 2
2) Sensitive List
3) Highly Sensitive List.

ASEAN-Korea, similar to ASEAN-China adopts the tariff band reduction approach. Gradual tariff elimination is contingent upon the applied MFN rate. The tariff elimination schedule is different for ASEAN 6 & Korea, Vietnam, and the rest of the CLMV countries, Cambodia, Laos and Myanmar. The modality for tariff reduction and elimination can be found in Annex 1 of the Legal Text.

The Normal Track covers approximately 90 per cent of all goods. For Normal Track 1, the tariffs will be eliminated by 1 January 2010 for ASEAN 6 and Korea. For Normal Track 2, the timeline involving the ASEAN 6 is 1 January 2012. Korea does not have any products under Normal Track 2. Within the Sensitive track, the products are subdivided into two lists: Sensitive List and Highly Sensitive List.

For products placed in the Sensitive List, the ASEAN 6 and Korea are committed to reduce the tariff to not more than 20 per cent by 1 Jan 2012 and subsequently reduce from 0 per cent to 5 per cent by 1 Jan 2016.
For Products placed in Highly Sensitive List, the ASEAN 6 and Korea are committed to reduce the tariff according to the different Group:

**Table 1.4 ASEAN and Korea FTA**

| Track | Products | Tariffs and deadlines |
|---|---|---|

| | | | |
|---|---|---|---|
| Normal | ASEAN-6 + Korea<br>(0% 1.1.2010) | 90% of TL and more than 90% of import value | Korea: 70% of products 0% since 1.1.2007. 0% since 2010 |
| | | | ASEAN 6:<br>2009: 90% of products listed 0%<br>2010: 0% for all the products (flexibility: 2012 for 5% of the products listed) |
| | CMLV<br>(0% 1.1.2018 Vietnam)<br>(0% 1.1.2020 CML) | 75% of TL | 2013 for VN (2014 for CML): 0-5%<br>2015 for VN (2017 for CML): 90% of the product listed 0%<br>2016 for VN (2018 for CML): 0% for all the products (flexibility: 2018 VN and 2020 Cambodia for 5% of products listed) |
| Sensitive Track | ASEAN-6 + Korea<br>(Max 10% of TL and 10% import value) | 20% not later than 1.1.2012<br>0-5% not later than 1.1.2016 | |
| | VN: 10% of TL and 25% of import value<br>CML: 10% of TL | VN: 20% not later than 1.1.2017 (CMLV 2020)<br>0-5% not later than 1.1.2021 (CMLV 2024) | |
| Highly sensitive<br>(max 200 TL or 3% of TL and 3 of Import value (not for CMLV) | Group 1 | ASEAN 6+Korea: tariff not more than 50% by 1.1.2016 (VN 2021, CMLV 2024) | |
| | Group 2 | ASEAN 6+Korea: tariff to be reduced by 20% by 1.1.2016 (VN 2012, CMLV 2024) | |
| | Group 3 | ASEAN 6+Korea: tariff to be reduced by 50% by 1.1.2016 (VN 2012, CMLV 2024) | |
| | Group 4 | Products subjected to Tariff Rate Quotas | |
| | Group 5 | Exempted from tariff reductions. Max 40 TL at six digit level | |

The devil is in the detail of such aspects of FTAs and in the case of the AKFTA there is in the agreement that "The Parties shall identify non-tariff barriers other than quantitative restrictions for elimination as soon as possible after entry into force of this Agreement" which means Korea's quotas on rice are off limits and constrains the benefits to Vietnam through growth in its competitive rice exports. Vietnam's sensitive sectors are basically the same as under ACFTA even though the trade flows are quite different, suggesting the approach to a sensitive classification is not well based.

The **ASEAN – India Free Trade Agreement (AIFTA)** so far has only covered the issue of trade in goods, although the services and the investment chapters are currently still under negotiations after a number of years of meetings. The AIFTA at present consists of the Agreement on trade in Goods, one Understanding on Dispute Settlement Mechanism and one Understanding on Rules of Origin.

**Table 1.5 ASEAN and India FTA**

| Category | | India versus CLMV & ASEAN 5 and ASEAN 5 versus India | Philippines - India | CLMV versus India |
|---|---|---|---|---|
| NORMAL TRACK | NORMAL TRACK 1 | 0% by 2013 | 0% by the end of 2018 | 0% by the end of 2018 |
| | NORMAL TRACK 2 | 0% by the end of 2016 | 0% by the end of 2019 | 0% by the end of 2021 |
| SENSITIVE TRACK | TARIFF + 5% | 0% by the end of 2016 | 0% by the end of 2019 | 0% by the end of 2021 |
| | 5% TARIFF | Reduced to 4% by the end of 2016 | Reduced to 4% by the end of 2019 | Reduced to 4% by the end of 2021 |
| | 4% of the TARIFF LINES in the ST | 0% by the end of 2019 | 0% by the end of 2022 | 0% by the end of 2024 |
| HIGHLY SENSITIVE TRACK | | Reduced to 25% or 50% by the end of 2019 | Reduced to 25% or 50% by the end of 2022 | Reduced to 25% or 50% by the end of 2024 |
| SPECIAL PRODUCTS | | Reduced to 37.5% for crude palm oil, 50% for pepper & 45% for the rest by the end of 2019 | | |

**The Japan – ASEAN Closer Economic Partnership (AJCEP)** is a comprehensive FTA that goes to a quite deep level of economic regulations. The AJCEP began with talks starting in April 2005. Later, the agreement was signed between the ASEAN countries and Japan in March and April of 2008 respectively and was put into effect in December of the same year. As of June 2010, Japan, Singapore, Laos, Vietnam, Myanmar, Brunei and Malaysia have ratified the agreement. Vietnam and Japan signed a separate economic partnership agreement in 2009 as is the approach of Japan to advance bilaterals even in regional settings. Agriculture has basically been omitted from these bilaterals, including even with Singapore.

The AJCEP is largely still in the negotiation phase for many of its chapters. When it will be completed the Agreement will cover many of the most important issues concerning economic

integration. In fact, the AJCEP contains one chapter on tariff reduction, one on Trade in Goods, Rules of Origin, Sanitary and Phytosanitary Measures, Technical Barriers to Trade, Dispute Settlement, Trade in Services, Investment as well as Intellectual Property Rights.

**Trade in goods**: Tariff elimination or reduction (adoption of a common concession system in which tariff elimination and reduction (concessions) between Japan and ASEAN nations are applied equally to each of the signatory nations), safeguards, customs procedure, etc. Tariffs on 93 per cent of imports from ASEAN into Japan will be removed within 10 years, while 50 per cent imports from Japan into ASEAN will be reduced by six ASEAN Members (Brunei, Indonesia, Malaysia, the Philippines, Singapore and Thailand) within 10 years.

**Rule of origin**: Certification of origin of products (adopting a common rule of origin to be applied equally among the signatory nations and also regulating the aggregate of rules of origin in Japan and ASEAN region (allowing parts and semi-finished goods, etc., manufacture and other signatory nations to be deemed manufactured internally), issue of certificates of origin, etc.

**Sanitary and phytosanitary (SPS) measures**: The rights and obligations related to sanitary and phytosanitary measures based on the agreement on application of SPS measures concluded between the signatory countries are reaffirmed, and a subcommittee is to be established for exchanging information, facilitating cooperation, etc.

**Standards and conformity assessment procedure**: Voluntary standards, compulsory standards and conformity assessment procedures are not to cause unnecessary barriers in trade.

The **ASEAN – Australia – New Zealand Free Trade Area (AANZFTA)** is the most comprehensive trade agreement ever negotiated by ASEAN and by far it is the most sophisticated in terms of economic regulations. Indeed, the AANZFTA regulates all the most important aspects of international economic relations, going well beyond even the WTO Agreements, as do most Australian and New Zealand FTAs. In fact, this FTA is not limited to liberalisation of trade in goods and services (including financial and telecommunications services) but also covers rules of origin, SPS, electronic commerce; movement of natural persons; investments; standards, technical regulations and conformity assessment procedures, Custom Procedures, Safeguards, Dispute Settlement, competition and intellectual property rights, together with some commitments on economic co-operation. The AANZFTA Agreement is the first comprehensive free trade agreement that ASEAN has signed with a Dialogue Partner. It is also the only one that has commitments in all three pillars of goods, services and investments.
The ASEAN-Australia-New Zealand Free Trade Area (AANZFTA) Agreement was concluded and announced by Ministers in August 2008 in Singapore. It was signed on 27 February 2009. The AANZFTA Agreement came into force on 1 January 2010. Countries that have implemented AANZFTA are Australia, New Zealand, Brunei, Malaysia, Myanmar, Philippines, Singapore, Thailand and Vietnam.

**Table 1.6 AANZFTA Percentage of tariff lines with duties between 0-5%**

| | **2005** | **2011** | **2013** | **2017** | **2020** | **2025** |
|---|---|---|---|---|---|---|
| | % | % | % | % | % | % |
| Australia | 86.2 | 96.7 | 96.8 | 97.6 | 100 | 100 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Brunei | 76.2 | 77 | 93.2 | 95.8 | 99 | 99 |
| Burma | 68.6 | 68.1 | 68.1 | 89 | 89.1 | 96.9 |
| Cambodia | 4.7 | 4.7 | 4.7 | 35.4 | 71.4 | 95 |
| Indonesia | 59.4 | 85 | 92.4 | 95.6 | 96.2 | 96.7 |
| Laos | 49.6 | 49.4 | 49.4 | 84.8 | 88.3 | 95.8 |
| Malaysia | 66.2 | 83.8 | 91 | 97 | 97.2 | 97.2 |
| New Zealand | 65.4 | 91.3 | 94.6 | 98.3 | 100 | 100 |
| Philippines | 57.2 | 91.3 | 94.5 | 95.7 | 96.5 | 96.5 |
| Singapore | 99.9 | 100 | 100 | 100 | 100 | 100 |
| Thailand | 56.5 | 96.8 | 91.1 | 92.3 | 99 | 99 |
| Vietnam | 46,7 | 46.3 | 55 | 90.8 | 90.8 | 95 |

**Source: Australian Government, 2010**

**Other bilateral initiatives.**

On July 13, 2000, U.S. and Vietnam signed a bilateral trade agreement (BTA), which entered into force on December 10, 2001. Under this agreement the U.S. extended temporary most-favoured nation (MFN) status to Vietnam, a step that reduced significantly U.S. tariffs on most imports from Vietnam. In return, Vietnam agreed to undertake a wide range of market-liberalisation measures, including extending MFN treatment to U.S. exports, reducing tariffs on goods, reducing some barriers to U.S. services (such as banking and telecommunications), committing to protect certain intellectual property rights, and providing additional protections for inward foreign direct investment. The BTA served as a stepping-stone for Vietnam's accession to the WTO, and it also served as a major catalyst for even broader systematic reforms in the Vietnamese legal and governance systems. Over these five years, as a result, Vietnam transformed and modernised its legal and administrative systems from one based on an often confusing mix of the Napoleonic and Soviet legal systems to one much more in line with international best practice and its major trading countries. This is an example of "open regionalism" where concessions are given on an MFN or non-preferential basis, rules of origin are not very restrictive, etc (PC 2010). The agreement also drove domestic reform by reducing domestic concerns through the trade-off of better market access through normalised trade relations.

In 1995 Vietnam also signed a co-operation agreement with the European Communities. Following this agreement, Vietnam was granted MFN treatment to its exports. Vietnam also benefitted from the Generalised System of Preferences (GSP) though being a voluntary arrangement unlike those in FTAs, these preferences can be removed as it has in the case of Vietnam footwear which has been subjected to anti-dumping action by the European Communities.

Other negotiations in which Vietnam is involved include: the Trans Pacific Strategic Economic Partnerships (TPP) with Australia, Brunei, Chile, New Zealand, Peru, Singapore and the United States; the European Free Trade Association (Norway, Switzerland, Iceland and Lichtenstein); and the

European Union. Turkey, Chile and Russia are also interested in negotiating a free trade agreement with Vietnam.

## 1.5 Vietnam's trade

Vietnam's current global merchandise export trade is around $62 billion with imports $80 billion (WTO country profiles). Although a member of ASEAN, only a relatively small share of trade is within the region. Trade with FTA members other than ASEAN is about half total imports, whereas exports to these countries amount to a quarter. China is the single largest source of imports, whereas the United States and the European Union are the major destination for exports.

**Table 1.7 Vietnam's current merchandise trade, 2009**

| | **Imports** | **Exports** |
|---|---|---|
| | $m | $m |
| ASEAN | 13,813 | 8,591 |
| China | 16,440 | 4,909 |
| India | 1,634 | 0.419 |
| Japan | 7,468 | 6,291 |
| Korea | 6,976 | 2,064 |
| Australia | 1,050 | 2,276 |

Source: GSO

***Vietnam's tariffs on imports and exports***

Much unilateral liberalisation has already occurred in Vietnam following its accession to the WTO, and average applied tariffs are a relatively modest 13 per cent. Agricultural tariffs are much higher, averaging 24 per cent. The difference between simple and trade weighted tariffs suggests there are some peak tariffs with low levels of imports. Average bound and applied tariffs are relatively close together which might suggest Vietnam has only limited scope to raise applied tariffs, although this limitation doesn't apply to some individual tariff lines.

**Table 1.7 Vietnam's average tariffs, 2007**

| | **Bound** | | **Applied** | |
|---|---|---|---|---|
| | **Simple** | **Trade weighted** | **Simple** | **Trade weighted** |
| | % | % | % | % |
| Agriculture | 24.15 | 14.53 | 21.58 | 9.93 |
| Non-agriculture | 15.70 | 12.60 | 10.88 | 10.61 |
| Total | 16.81 | 12.73 | 11.68 | 10.57 |

Source: WITS (2010)

Vietnam's tariffs as applied to imports from ASEAN's more recent FTA partners are shown in table 1.8. The trade weighted tariffs are particularly low on imports from Australia and India. The high tariffs for the other countries suggest their imports are facing relatively high tariffs (e.g. milk from New Zealand) and there could be large potential benefits from liberalisation.

**Table 1.8 Vietnam's average tariffs by source of imports**

| | Simple | Trade weighted |
|---|---|---|
| | % | % |
| Australia | 16.00 | 4.47 |
| China | 11.97 | 12.25 |
| India | 12.34 | 4.96 |
| Japan | 14.53 | 12.48 |
| Korea, Rep. | 14.63 | 14.81 |
| New Zealand | 16.39 | 10.38 |

Source: GTAP, last version 2007.

Perhaps of greater interest are the tariffs facing Vietnam's exports with its FTA partners. These are shown in table 1.9. Tariffs on its exports to the world are generally low, but very high on exports to Korea and India. By contrast, trade weighted tariffs on exports to Japan are very low, but this hides a huge tariff on rice of several hundred per cent as imports are very low.

**Table 1.9 Vietnam's average tariffs on its exports**

| | Trade weighted |
|---|---|
| | % |
| Australia | 1.47 |
| China | 3.48 |
| India | 39.85 |
| Japan | 4.25 |
| Korea, Rep. | 33.75 |
| New Zealand | 4.81 |
| World | 7.09 |

Source: GTAP, last version 2007.

Tariffs are not by any means the whole story on constraints to trade and a number of specific non-tariff barriers are mentioned in the following chapters in relation to assessing the impacts of FTAs on the Vietnam economy.

# Chapter 2 Methodology

In this report, three integrated and complementary approaches are used to gauge the actual and potential impact of FTAs on Vietnam. These include general equilibrium analysis to determine the likely future impact of policy changes in tariff levels, a gravity approach to assess the impact on trade of FTAs in the past, and sectoral level analysis to examine the impacts at a highly disaggregated level.

A simple conceptual framework to explain the effects of tariff reductions upon forming or joining an FTA is described in Box 1. Important concepts explained in this box are trade creation (in general where low cost FTA members' exports replace higher cost domestic producers) and trade diversion (where trade involving low cost non-FTA countries are replaced by that of higher cost members due to preferences given).

**Box 1 Simple analytics of FTAs**

The main effects of an FTA are trade creation, trade diversion, tariff revenue losses, terms of trade effects (the relative price of exports to the price of imports) and dead weight losses (a loss of economic efficiency). The effects can be shown with two simple diagrams. The first shows the perspective of a non-member exporting to an FTA member. The exporter faces MFN tariffs, as do other non-members. The second diagram shows the situation when the exporter joins the FTA. The first diagram shows quantities of exports (Q1), imports (M1) and tariff revenues (a+b+c+d) captured by the importer when tariffs are t and domestic prices are Pw*(1+t).

**Figure 2.1a Impacts of joining an FTA**

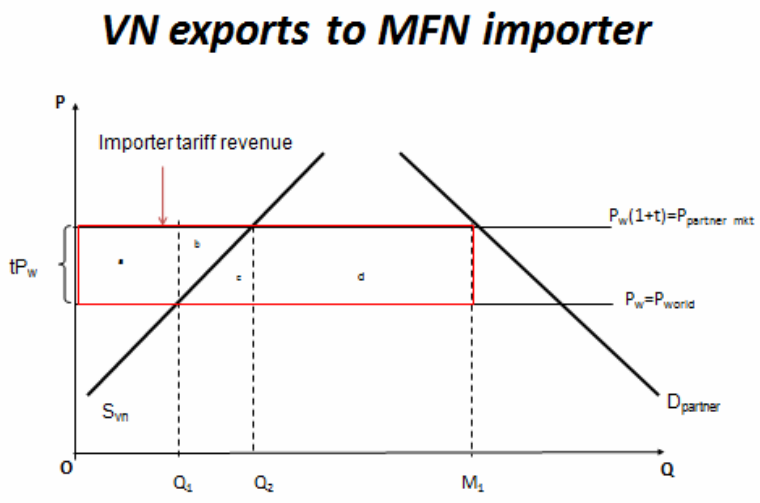


**Figure 2.1b Impacts of joining an FTA**

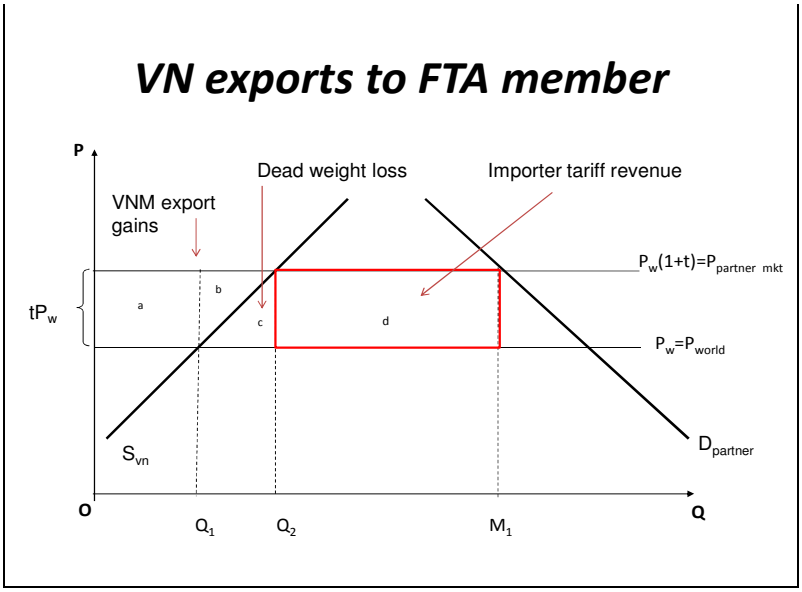



Figure 2.1b shows the impact on the exporter and importer of the exporter joining an FTA with preferential tariffs. A new FTA member as an exporter increases exports to Q2 and gains export revenue represented by area a+b+c at the expense of non-members' trade. This is trade diversion. It is also at the expense of importer tariff revenue which is reduced by area a+b+c. Part of this loss (a+b) is a transfer to the exporter but part c is a "dead weight" loss because the exporter bears an additional cost of producing the extra export over the costs of competitive world exports. The additional cost makes the exporter a high cost supplier who can only supply the additional exports at the expense of its world competitors because the tariff it faces is reduced on a preferential basis.

From this diagram, with some elaboration, it is possible to demonstrate:

- Trade diversion
- Loss of tariff revenue for importers
- Dead weight losses
- Preference erosion

The diagram can also be used to illustrate:

- Terms of trade effects (negative for exporters; positive for importers)
- Trade creation (positive for importers).

As shown, the world price remains unchanged and so the domestic price does not change for the importing country. This assumes that non-FTA exporters' prices are not related to the quantity that they try to export. However, more realistically, when non-FTA exporters lose market share, they now have an excess supply of the good and so their price (the world price) will fall as they try to sell the excess. In Figure 2.1b, this would be shown as $P_w$ falling – terms of trade effect – and so the domestic price (inclusive of tariff) $P_w(1+t)$ would also fall. This lower price will induce more imports and so create more trade.

The importer would be better off reducing its MFN tariff to all exporters. In this way its consumers would capture some of the tariff revenue that is going to exporters or lost as a dead weight.

The simple conceptual model outlined here can apply quite well to single sectors, or even multiple sectors, but necessary refinements include the need to capture the whole economy to reflect resource constraints, such as land, labour and capital, and to reflect that many goods are not perfect substitutes for each other. General equilibrium modelling, explained next, fills in some of these gaps. Gravity modelling is used to determine whether the predictions of an econometrically estimated simple model held true when applied to past FTAs.

## 2.1 CGE modelling

General equilibrium models capture the interactions in the whole economy by linking all the sectors through input-output tables and by linking all countries through trade flows. They also capture the use of factors of production such as capital, labour and land. General equilibrium results are often lower than those obtained from partial modelling because not all sectors can expand at once. The expansion of one sector in response to increased export opportunities requires that resources are drawn away from other sectors, diminishing their output. Land, labour and capital are in limited supply, and using more in one sector requires using less in another, hence raising the costs in other sectors. Partial analysis, while useful where a detailed analysis of a small sector is required, does not capture this effect.

By examining tariff changes at an industry or tariff line level, it is possible to make a reasonable estimate as to their likely effects on the industry's prices and production, consumption, and, imports and exports if they occur. However, looking at tariffs alone is insufficient. Because many firms sell their output to other firms as intermediate inputs, lower prices in one sector are beneficial to downstream sectors. For example, the removal of tariffs on textiles makes a country's apparel sector more competitive. Such interactions should be taken into consideration in assessing a policy change. Where a large number of variables are involved, computational models are necessary to take account of the interactions. Trade models are used to make estimates of the possible effects of changes in trade policy on a number of economic variables, such as exports, imports, tariff revenues, production, employment, wages and national income. The value of such models is in providing an understanding of the interplay of different economic forces, and in enabling comparisons of the relative impact of different policies. They can often help to highlight unexpected or counter-intuitive outcomes, which can assist policy-makers in their choice of policy options and/or development of support measures.

A second important feature captured by general equilibrium models relates to the incidence of tax. A tax on production is passed along the processing chain to be shared by consumers, just as a productivity improvement has the opposite effect of lowering costs to producers and prices to consumers. This pass-through of costs implies that a tariff on imports acts a tax on exports, particularly if imports taxes apply to intermediate goods that are used in the production of exports. For example, tariffs on textile imports raise the costs of production of apparel.[4]

[4] This is related in trade theory to the Lerner symmetry condition, which states that assuming no change in the trade balance, a tariff is equivalent to an export tax.

The general equilibrium model used here is GTAP[5], a well-documented, static, multiregional, multisector model that assumes perfect competition[6] and constant returns to scale and imperfect substitution between foreign and domestic goods and between imports from different sources. This last feature is the so-called Armington assumption. The standard model assumes, for simplicity, no change in population, technology or use of factors of production – land, labour and capital. Thus dynamic effects due to increased investment, competition, technology or economies of scale are ignored.[7] GTAP models bilateral trade and tariffs and thus is ideally suited for analysis of free trade agreements, where countries remove tariffs on imports from some trading partner but not others.

Changes in sectoral output are driven by several factors:

(i) the level of ambition of the proposed reform;

(ii) the change in demand for the good; and

(iii) the cost structure, which determines the ability to switch resources from one activity to another.

The change in demand for the good reflects the change in consumer prices. This in turn is driven by the change in tariffs. When domestic prices fall following tariff reductions there will be an increase in demand. However, consumption is constrained by the consumers' income, so falling prices for one good may also lead to an increase in demand for other goods.

On the demand side, the consumers' willingness to switch the source of the product determines the location of output. A fall in tariffs will induce some additional consumers to switch from domestic to foreign goods, and between foreign goods from different sources if relative prices (tariffs) change. These changes are governed by two sets of (Armington) elasticities, which specify the responsiveness between prices and quantities. The elasticities between domestic and foreign goods are generally rather low, whereas the elasticity between foreign sources is generally assumed to be double the first. This means consumers are assumed to have a strong preference between domestic and imported products but are not so particular in choosing between alternative imported products.

Compared with standard trade models, Armington-type models such as GTAP tend to show large terms of trade effects, larger shifts in consumption between domestic and imported goods, and smaller resource re-allocation effects. Because each source of supply is in some way unique, and not perfectly substitutable, an increase in exports may lead to a fall in export prices. For example, Vietnamese leather goods might be poor substitutes for Chinese exports, so an increase in Vietnamese exports of leather goods may need to be at lower export prices to the benefit of the importer. Terms of trade effects such as this can sometimes lead to negative welfare effects. Because lower export prices for an exporter imply lower prices for an importer, changes in terms of trade must sum to zero. The terms of trade, determined by the Armington elasticities, merely divide up between countries, the gains from improved resource allocation.

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[5] For information on GTAP, see https://www.gtap.agecon.purdue.edu/.

[6] This implies the absence of excess profits because firms can readily enter or exit the industry.

[7] The assumptions imply the impacts, both positive and negative, are underestimated. The assumptions can be modified if users have knowledge of how these factors affect production, but this information is difficult to obtain.

On the supply side, the change in output is constrained by the availability of the factors, labour and capital, and intermediate goods. Where labour and capital are assumed to be in fixed supply in developed countries, the use of these in each sector depends on their substitutability. Labour is assumed to be mobile between sectors, although not between countries. This implies that workers can, at the margin, move for example from agriculture to textiles or services. In this application, a long run closure is used in which capital is assumed to flow between countries according to changes in demand for capital goods.[8] Suppose tariffs on Vietnamese exports of non-metallic minerals are reduced. These are capital-intensive. Increased demand for these goods will drive up the demand for capital within Vietnam. With global capital fixed, use of capital will fall in another country. Under the long run closure, the movement of capital across countries leads to a better allocation of resources and hence global incomes rise compared with the short run closure where labour and capital is fixed in each region.

In another important variation from the standard assumption, unskilled labour is assumed to be underemployed in developing countries so employment of this factor can vary according to the demand for unskilled labour-intensive goods. This contrasts to the standard assumption, that applies to skilled labour that the quantity is fixed and all the adjustment occurs in wages. For unskilled labour in developing countries, the demand for labour is reflected in both wages and employment levels. This leads a significant improvement in the national income results.

In the production of goods, capital and labour are imperfect substitutes, but the elasticity of substitution does not have a large impact on sectoral output.[9] There is no substitution between the bundle of factors and intermediate goods. In the production of beef, once the capital/labour ratio is determined, there is no substitution between the live cattle input and the capital-labour bundle. Live cattle, capital and labour are used in fixed proportions irrespective of prices.

Finally, relative changes in sectoral output depend on the level of aggregation. If textiles and apparel were one sector rather than two, the estimated change is likely to be lower than those for the sub-sectors because the average will be less than the most extreme value. A switch from textile to apparel production might show up as negative and positive output effects when there are two distinct sectors, but there will be only one more modest effect when there is only one sector.

The methodology involves specifying a data set that represents a specific year, postulating a counter factual change in tariffs or other policy variables, and comparing the simulated outcome with the base data over the short, medium or long-term depending on the closure. By comparing the simulated outcome with the base data, impacts of the removal of trade barriers on prices, production, consumption, imports and exports, government revenues and national income within countries can

[8] The term 'closure' refers to the selection of exogenous and endogenous variables. Exogenous variables are fixed, whereas endogenous variables are determined by the model.

[9] In GTAP, the elasticity of substitution determines the movement between factors in response to price changes. The parameter is specific to the sector but common across all regions. Doubling this parameter increases the change in output by around 10 per cent.

then be ascertained. The simulated output is not a forecast of the future, but a comparison at a point in time with and without a policy change.

It is important to note that no dynamic elements are assumed here, although in reality the policy changes are implemented over time and there are, in addition, time lags for their effects to work through. There are also one-off adjustment costs that are ignored along with the ongoing beneficial dynamic effects that competition can introduce. However, policy changes are phased in over a number of years, and, in practice, the output changes would take place in a growing world economy. This facilitates the adjustment process.

## 2.2 Gravity modelling

Gravity models can be used to determine the impact on trade of FTAs implemented in the past. The approach involves econometric estimation to determine *ex post*, after the fact, the factors influencing trade, including the implementation of an FTA. The underlying assumption, that is the basis for more elaborate models capturing the implementation of an FTA, etc, is that trade patterns follow Newton's gravity law, namely the force of trade between two countries is positively related to their "size" and inversely related to their "distance". The standard equation is:

$$Xij = G(Mi*Mj/Dij)$$

Where Xij is trade flows between countries *i* and *j*, M is a measure of mass (size), D is "distance" between the countries (more than physical distance such as transport costs or different languages that can "distance" one country from another) and G is a constant.

More broadly such trade (and investment on occasions (De Rosa 2008)) is specified as being determined by supply at the origin and demand at the destination (e.g. size), plus stimulating and restraining forces (e.g. distance), and this specification has been derived from economic theories in recent years (Anderson and Wincoop 2003, PC 2003 and PC 2010). A gravity model augmented by non-size and non-distance variables that drop out of theoretical underpinnings, such as price and policy variables including dummy variables reflecting membership of an FTA, is used in analysis of the impact of FTAs. Trade impacts can be trade creating (low cost members replacing higher cost domestic producers) as well as trade diverting (from low cost non-members to higher cost members). It is generally specified as a linear relationship of the logarithms of the variables, the gravity law being in a multiplicative form, but this form also tends to fit the data better, especially when there is exponential growth.

This specification can cause some estimation difficulties if there are zero data points as can occur, especially when there are a large number of countries or sub-industry components of bilateral trade being considered over time in the modelling (see Cheong 2008, Cragg 1971, PC 2010, and Ruzitta et al. 2009 on application of this last aspect). In the past, this difficulty has been addressed by dropping data but more recently different unbiased estimation procedures (e.g. Poisson) have been used as outlined later.

## 2.3 Sectoral analysis

It is of interest to have a sense in advance as to where a market economy, which tends to lead to the efficient allocation of a nation's resources, might end up after policy intervention. While this cannot be precise, given the complexity of Vietnam's economy, nonetheless it would be useful for policy-makers or trade negotiators to be alerted to what general trends in the economy might flow from various FTAs relative to efficient resource allocation. Such information could help to identify which sectors merit special attention in negotiating market access in an FTA, or, in the case of import-

competing sectors, which industries can be expected to grow more slowly or even contract over time and so represent adjustment challenges. The quantitative analysis based on general equilibrium modelling does this at a fairly aggregated level but a more detailed level is desired. Roughly, since the gains from international trade and specialisation reside in relative differences between industries in economies, our search is for measures or indicators of such overall beneficial differences.

At the sectoral level, we pursue two suggestive, but inherently partial equilibrium methodologies, aimed to complement the general equilibrium analysis. One is more quantitative, relying on summary measures of industry performance and trade compatibility, while the other is manifestly qualitative, relying on actual interviews with stakeholders. Additionally, we rely on secondary sources such as government and industry studies and reports.

The quantitative approaches include:

- Summary Indicators of Potential
- Tariff Revenue Approach
- SMART partial equilibrium simulations

Summary indicators include a variety of aggregate trade flow measures based on highly disaggregated data. The Tariff Revenue Approach focuses on a combination of trade flows and tariffs, and so is particularly useful to trade negotiators in identifying which sectors or products might deserve the most attention in terms of trade liberalisation and market access. The SMART simulations rely on partial equilibrium simulation exercises at the six digit level of aggregation. They are based on parameters specified by the modeller. While useful, these simulations are meant as more of a check for robustness of the general equilibrium modelling rather than as a quantitative analysis per se. Still, the results have proven useful in other studies and seem consistent with our early findings in this study.

### 2.3.1 Summary indicators of potential

The conditions more or less favourable to a successful FTA can be measured with some aggregate trade flow indexes summarised below. These indicators are also discussed in World Bank (2002) and elsewhere (See Mikic, 2005, and the references therein). Additionally, some of the more disaggregated measures such as Revealed Comparative Advantage are commonly used as indicators of sector potential or challenge in the presence of trade liberalisation (Balassa, 1965; Iapadre, 2001). We use such indicators to suggest where a more detailed qualitative analysis might be most telling.

***Relative Growth Rates (GR) of Merchandise Exports and Imports***

***Indicator:*** $GR_i = [(X_{tB}/X_{tE})^{(1/n)} - 1]*100$ where $X_{tB}$ and $X_{tE}$ are the trade values of product i in the beginning period and the end period; n is the number of years.

***Data Sources:*** UN Comtrade and ITC Trademap.

***Interpretation:*** Indicates which industries are growing fastest in trade. The indicator is suggestive of comparative advantage (more positive) or comparative disadvantage (less positive or negative) industries. The indicator can be calculated and compared with the world growth rates or with various

individual potential partners. More favourable would be faster growth rates both overall and specifically to the potential partner countries with slower or negative growth in the partner countries.

***Revealed Comparative Advantage (RCA)***

***Indicator:*** $RCA_{ij} = (x_{ij}/X_{it})/(x_{wj}/X_{wt})$ where $x_{ij}$ and $x_{wj}$ are the values of country i's exports of product j and of world exports of product j; $X_{it}$ and $X_{wt}$ are the country's total exports and world total exports.

***Data Sources:*** UN Comtrade and ITC Trademap.

***Interpretation:*** The RCA index is used to assess a country's export potential in particular products. An RCA greater than unity suggests a revealed comparative advantage and less than unity a revealed comparative disadvantage. The RCA can also provide useful information about potential trade prospects with new partners. If countries have similar RCA profiles, it is unlikely that trade will be much affected by any FTA. Thus, the RCA should be computed for Vietnam and any potential partner and then compared.

***Export Specialisation (ES) Index***

***Indicator:*** $ES = (x_{ij}/X_{it})/(m_{kj}/M_{kt})$ where $x_{ij}$ and $X_{it}$ are export values of country i in product j and total exports of country i; $m_{kj}$ and $M_{kt}$ are the import values of product j in market k and total imports in market k.

***Data Sources:*** UN Comtrade and ITC Trademap.

***Interpretation:*** The ES is similar to the RCA but with reference to a particular market. This makes it especially useful for identifying potential FTA partners. In particular, the indicator shows the ratio of country i's export potential to country k's import needs. If the ES is greater than unity it indicates favourable specialisation opportunities in market k. A value less than unity indicates a revealed comparative disadvantage in market k.

***Export Similarity (XS) Index***

***Indicator:*** $XS(j,k) = \text{sum } [\min (X_{ij},X_{ik})*100]$ where $X_{ij}$ and $X_{ik}$ are industry i's export shares in country j's and country k's exports.

***Data Sources:*** UN Comtrade and ITC Trademap.

***Interpretation:*** The XS indicator varies between 0 and 100. Zero indicates complete dissimilarity between export destination markets and 100 complete similarity. Thus, 100 might be taken as more compatible to a non-trade diverting FTA. But, of course, trade would be lower. So, a plausible

interpretation of the measure is that a lower value is more favourable so long as any FTA is mixed with "open regionalism" in order to dissipate potential trade diversion. Also, the index could be taken to indicate countries that would be rivals in an FTA or the potential for trade diversion if only one of the countries were to join the FTA.

***Trade Complementarity (TC) Index***

***Indicator:*** $TC_{kj} = 100 - \sum abs(m_{ik} - x_{ij})/2$ where $m_{ik}$ is the share (%) of good i in country k's imports and $x_{ij}$ is the share (%) of good i in the exports of country j.

***Data Sources:*** UN Comtrade

***Interpretation***: The TC Index aims to reveal the prospects for intraregional trade by showing how well the structures of a country's imports and exports match. It is useful to calculate this index for prospective FTAs and then compare it with other FTAs and their performance. A value of zero indicates no goods that are exported by one country are imported by the other and a value of 100 indicates the export and import shares exactly match. Higher values are more favourable to a proposed FTA.

***Trade Intensity (TI) Index***

***Indicator:*** $TI_{ij} = (x_{ij}/X_{iT})/(x_{wj}/X_{wT})$. The numerator is the share of country i's total exports to country j and the denominator is the share of world exports to country j.

***Data Sources:*** Comtrade and ITC Trademap.

***Interpretation:*** The TI index measures if the value of trade between two countries is larger or smaller than expected based on their importance in world trade. A value greater than unity indicates larger trade flows than might be expected. In this sense, higher values are more favourable to an FTA.

***Index of Intra-industry Trade (IIT)***

***Indicator:*** $IIT_{jk} = 1 - \sum abs(X_{ijk} - M_{ijk})/(X_{jk} + M_{jk})$ where $X_{ijk}$ is the value of exports of industry i from country j to country k. $M_{ijk}$ is the value of imports of industry i in country j from country k.

The World Bank (2002) notes that the computation is generally confined to manufactured goods defined at the Standard Industrial Trade Classification (SITC) three-digit level. Or, it is common to apply the measure using HS 2-digit level data for chapters (sectors) of HS 79 and above, i.e., "manufactured goods."

***Data Sources:*** Trademap.org for HS. SITC data available from World Development Indicators (WDI).

***Interpretation:*** This is used as a measure of potential trade growth within a particular industry due to the exchange of a wide range of varieties of similar products. It is meant to complement the usual measures of comparative advantage which give rise to inter-industry trade. The index ranges from zero – no intra-industry trade – to unity – complete intra-industry trade. An index number closer to unity might indicate the potential for taking advantage of a larger market.

### 2.3.2 The tariff revenue approach

Tariff revenue is simply the value of imports times the tariff:

$$TR = P_w.M.t$$

where Pw is the world price, M is imports and t the tariff. It is useful to rank imports according to tariff revenue, as high values indicate large import flows, high tariffs or some combination. This measure is essentially an import weighted tariff at a sectoral level. If tariffs are low, a tariff reduction will have little effect on domestic price. However, if import volume is already high, even a small change could have important effects. Conversely, if tariffs are high, tariff reductions could again produce large effects from a small base.

The measure is subject to the flaw, of course, that a prohibitive tariff, which prevents any imports, will result in low tariff revenue, and the product will not receive a high ranking whereas a tariff reduction may have a large effect.

Note also that a reduction in the tariff may lead to an increase in tariff revenue if the rise in imports outweighs the reduction in the tariff. World prices may also change.

### 2.3.3 The SMART partial equilibrium approach

The SMART model is a simple means of measuring trade creation, trade diversion, tariff revenue and welfare effects of a tariff change for a single product. These are the variables illustrated in Figures 2.1a and 2.1b. The method is suitable for analysing FTAs because it takes account of bilateral trade and tariffs. The change in bilateral trade is simply:

$$m_{ij} = \eta(t_{ij}+p_{ij})$$

Where m, t and p are percentage changes and $\eta$ is the import demand elasticity in the importing country. This determines trade creation. Where relative bilateral tariffs change, as in a preferential trade agreement, elasticity specifies the substitution from one source of supply to another. The elasticity of substitution can be expressed as the percentage change in relative shares of imports from two different sources due to a one per cent change in the relative prices of the same product from the two sources. The assumption here is that imports from different sources are imperfect substitutes – e.g., different varieties of motorbikes or qualities of vegetables. The switch from one supplier to another determines trade diversion. The SMART model requires the researcher to specify these two elasticities plus the elasticity of supply. With bilateral trade and tariff data and the three parameter values, it is straight forward to perform a number of counterfactual experiments aimed to suggest the impact of an FTA on trade flows.

The simulation is best suited for removing only a single tariff or multiple tariffs in very unrelated markets. This maintains the credibility of the result in the partial equilibrium paradigm wherein spillover effects and market interactions can be safely assumed to be minimal. In the simulations here, we let the entire tariff structure change radically, and so certainly violate the assumption that most of the economy can be ignored. However, the exercise has some use as a first pass look at which sectors might benefit most from each FTA relative to other sectors. It is really the absolute magnitudes of the changes that lack precision.

# Chapter 3 A quantitative assessment of FTAs using a general equilibrium model

## 3.1 The need for a CGE approach

Free trade agreements can have negative or positive effects. The purpose of this chapter is to look at free trade agreements already signed by Vietnam and attempt to make an assessment of the likely impact. Two prospective agreements not yet negotiated, with the European Union and Turkey and one not yet concluded, with Chile, are also modelled to gauge the potential gains, although at this stage it is not possible to determine which sectors will be exempt from reductions. It is possible, however, to identify which sectors contribute to increased trade and welfare. This would be useful in determining where any exemptions might be negotiated.

Trade flows, tariff levels and scheduled reductions provide some guide as to the likely impacts, but by themselves are unable to account for resource constraints, such as limited amounts of land, labour and capital. As explained in Chapter 2, expansion in any one sector requires that resources be diverted from other sectors. Conversely, a reduction in output in any sector, perhaps in response to increased imports, releases labour and capital that can be employed elsewhere. Furthermore, tariffs on imported intermediate inputs, such as on textiles to make garments, have effects up and down the production chain. The CGE model captures these effects.

## 3.2 Model characteristics, data, aggregation and closure

In this report, a global computable general equilibrium model, GTAP, is used to model the effects of a range of current FTAs in trade in goods. The model has its own database, which includes intersectoral flows, trade flows, parameters and policy variables such as tariffs.

*Data*

The GTAP 7 database is used here. The value (of output and trade flows) data relate to 2004 and the behavioural parameters, specifying the responses of consumers and producers to price changes for example, are taken from the literature rather than econometrically estimated.[10] Input-output data are taken from national accounts and vary from year to year, depending on their availability in particular countries. Applied tariff data are from 2007. Preferential tariffs are included in the tariff database. The tariffs are trade weighted.[11]

*Regions and sectors*

The major focus of this study is the impact on the Vietnamese economy, rather than the partner countries or other members of ASEAN. Nevertheless, six members of ASEAN are singled out, while

[10] To the extent that the Vietnamese and other economies have grown since 2004, the estimated changes in values are underestimates. Most of the variables are reported in percentage changes, which are largely unaffected by a growing economy.

[11] Trade weighted tariff suffer from an endogeneity problem. In the extreme, prohibitive tariffs have zero trade, and thus zero weights. For this reason trade weighted tariffs may be biased downwards. However, simple average tariffs also can be misleading.

Cambodia, Laos and Myanmar are treated as a single region. Other single countries include Japan, China, India, Korea, Australia and New Zealand, with whom Vietnam has an FTA, and Turkey and Chile, prospective FTA members. The EU27, another prospective member, is treated as one region, as are members of the European Free Trade Agreement, other developed countries, Africa and Latin America. Remaining countries are included in a 'Rest of World' region.

**Table 3.1 Regions and sectors**

| Regions | | Sectors | |
|---|---|---|---|
| EU25 | European Union | RCE | Rice |
| USA | United States | VFN | Vegetables, fruit and nuts |
| JPN | Japan | XCR | Other crops |
| KOR | Korea | LVS | Livestock |
| AUS | Australia | FRS | Forestry |
| NZL | New Zealand | FSH | Fishing |
| EFT | EFTA | RES | Petroleum and coal products |
| ODV | Other developed | MT | Meats |
| CHINA | China | XPA | Other processed agriculture |
| CHL | Chile | TXT | Textiles |
| IND | India | LEA | Leather |
| RUS | Russian Federation | WAP | Wearing apparel |
| TUR | Turkey | CRP | Chemicals |
| IDN | Indonesia | MET | Metal manufactures |
| MYS | Malaysia | WPP | Wood & paper products |
| PHL | Philippines | MVT | Motor vehicles and other transport equipment |
| THA | Thailand | NMM | Mineral products nes |
| VNM | Vietnam | MAN | Manufactures |
| SGP | Singapore | ELE | Electronics |
| XAS | Rest of ASEAN | TCN | Transport & communications |
| LAM | Central and South America | BSV | Business services |

| | | | |
|---|---|---|---|
| AFR | Africa | SVC | Services and activities nes |
| ROW | Rest of World | | |

In each country or region the economy is divided into 22 sectors, including six agricultural sectors, three resource sectors, ten industrial sectors and three service sectors. This aggregation reflects areas where protection is greatest, namely agriculture, textiles and automobiles.

*The model closure*

Model closure refers specifying variables to be either exogenous (fixed) or endogenous (determined by the model). The choice of closure reflects economic behaviour, and often reflects the presence of quantitative restrictions, such as a fixed exchange rate. In the GTAP model the standard labour market closure specifies that the amount of skilled and unskilled labour is fixed and cannot move between regions, although workers can readily move between sectors. Wage rates are assumed flexible. This closure is somewhat at odds with reality, especially in developing countries, given that unemployment varies with the business cycle. In addition, in developing countries in particular, there appears to be a pool of unemployed or members of the labour force that work with low intensity. Changes in the amount of labour employed have a far greater effect on output and welfare than merely reallocating resources in response to changes in relative prices. An alternative to the standard closure is to assume fixed wages and allow unskilled labour use to vary. This is based on the intuition that the informal sector in developing countries is characterized by significant unemployment and underemployment. Because the demand for labour is indirectly derived from the demand for labour-intensive goods, liberalisation tends to increase employment in developing countries and reduce it in developed countries. Furthermore, because real wages of unskilled labour are fixed, the costs of production remain lower than otherwise. This helps the country remain competitive in export markets. Thus, with this more realistic closure, developing countries are estimated to gain more from liberalisation at the expense of developed countries.

Neither of these closures seems fully realistic. It seems more sensible to expect some movement in both the price and quantity side of the labour market. In this application we assume half the response goes into wages and half into employment. We also assume that the amount of surplus unskilled labour cannot exceed three per cent. To simulate this we run a scenario with the standard closure, observe the changes in the wage rate, then run a second scenario that includes an exogenous shock to unskilled employment that equals half the change observed in the first scenario. Skilled labour remains fixed. The choice of response, half in this case, is somewhat arbitrary but more realistic than either of the alternative closures. The justification is that industry groups in Vietnam have remarked that unskilled labour is no longer as abundant as it once was, and higher wages and vocational training are necessary to attract workers. This is discussed in chapter 5.[12]

It could be argued that some developed country economies that are characterized by rigid wages, such as those of Japan and some EU members, should also be treated in a similar way. However, these economies also have regulations governing the shedding of labour, which restrict downward changes in labour use. In these simulations, the standard labour market closure is applied to these economies.

[12] A chart on welfare decomposition, shown later, identifies the contribution to welfare of additional labour.

The second modification to the standard GTAP closure relates to capital, which is normally a fixed amount in each region. In each case we use a long run closure by allowing the movement of capital between regions.[13] There is a fixed amount of global capital, but it flows to where it can receive the greatest returns. This means that where there is an increased demand for capital intensive goods, there will be inflows of capital. This helps expand the productive capacity of those countries attracting the capital. This assumption can make a significant difference to the welfare effects of trade liberalisation. However, individual countries can be worse off under this assumption because they now need to compete for a fixed amount of global capital.

## 3.3 Scenarios

Judging by negotiated outcomes, the approach taken within FTAs appears to be to obtain market access in other countries' markets while giving up little in one's own market. From an economist's perspective, this mercantilist approach is misguided. Exports are only of value as a means of paying for imports. Keeping out imports with high tariffs merely favours some domestic producers at the expense of other product producers and consumers, including exporters. Nonetheless, the key trade-off in FTA negotiations is improved market access versus the necessary flexibility to protect politically sensitive industries. Rather than sticking to an agreed formula with no exemptions, history has shown that some flexibility is necessary to obtain a negotiated outcome. However, too many exemptions may undermine the level of ambition and the level of benefits from liberalisation. This appears to be the case in FTAs involving the ASEAN region. The term 'free trade area' is a misnomer, because the agreements fall well short of free trade after the exemptions are taken into account. Preferential trade agreements may be a more accurate term. Negotiators have attempted to protect the same commodities in each FTA, regardless of the export capabilities of the trading partner. Although China and Korea export different products, Vietnam's scheduled tariff reductions tend to protect the same commodities in each FTA. This approach has the advantage of simplicity but is most likely sub-optimal.

To examine this shortfall in ambition two sets of scenarios are examined. These portray the six FTA agreements as negotiated in the medium term (2012), when partially implemented, and in 2018 when fully implemented.[14] Full implementation does not mean free trade between members. Hundreds of exemptions remain. The six agreements are listed in table 3.2.

**Table 3.2 Scenarios**

| No | Label | Description |
|---|---|---|
| 1 | AFTA | ASEAN Free Trade Agreement |
| 2 | ANZ | AFTA Australia New Zealand agreement |

[13] In GTAP, this is done by endogenising (determining within the model) the variable 'capital' in each region in the closure. Normally, capital is assumed fixed.

[14] The date of full implementation differs between agreements, from 2015 to 2021. The FTAs may also be renegotiated as implementation proceeds.

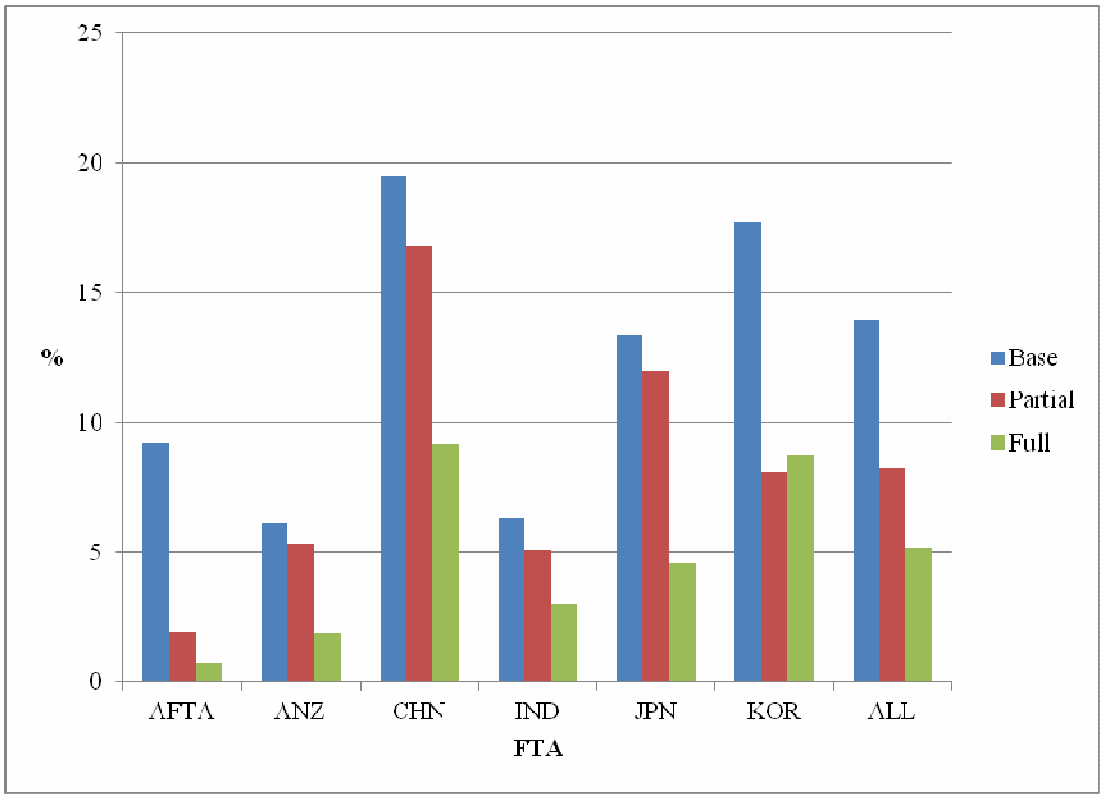
| | | |
|---|---|---|
| 3 | CHN | ASEAN China agreement |
| 4 | IND | ASEAN India agreement |
| 5 | JPN | Vietnam Japan agreement |
| 6 | KOR | AFTA Korea agreement |
| 7 | ALL | All six agreements together |
| 8 | EU | VNM – EU agreement |
| 9 | CHL | VNM – Chile agreement |
| 10 | TUR | VNM – Turkey agreement |
| 11 | UNI | VNM – unilateral liberalisation |

As mentioned earlier, there is evidence that in practice AFTA is an open agreement with a relative small share of trade between countries within the agreement, due to a number of reasons such as the ability to reduce tariffs on an MFN basis to non-members without losing the benefits of membership and not very restrictive ROOs (World Bank 2005, PC 2010, Hill and Menon 2010). This is the open-regionalism concept popular when the Asia Pacific Economic Cooperation forum was devised two decades ago. However, Scenario 1, AFTA, involves reducing the remaining tariffs within the AFTA region according to the scheduled commitments.

The scenarios 1-7 are modelled according to tariff reductions by 2012 and 2018. The exemptions are specified in the tariff reductions schedules that are part of the annexes to the agreements.[15] These tariffs are compared with the 2007 tariff data base. Vietnam's trade weighted average import tariffs against the relevant partner countries are shown in figure 3.1. Tariffs on Vietnam's exports are shown in figure 3.2. There are numerous exemptions, even after full implementation by 2018, most notably on imports from China and Korea. The average tariff against all the partners is five per cent. On the export side tariffs are very much reduced by 2018, with the exception of India.

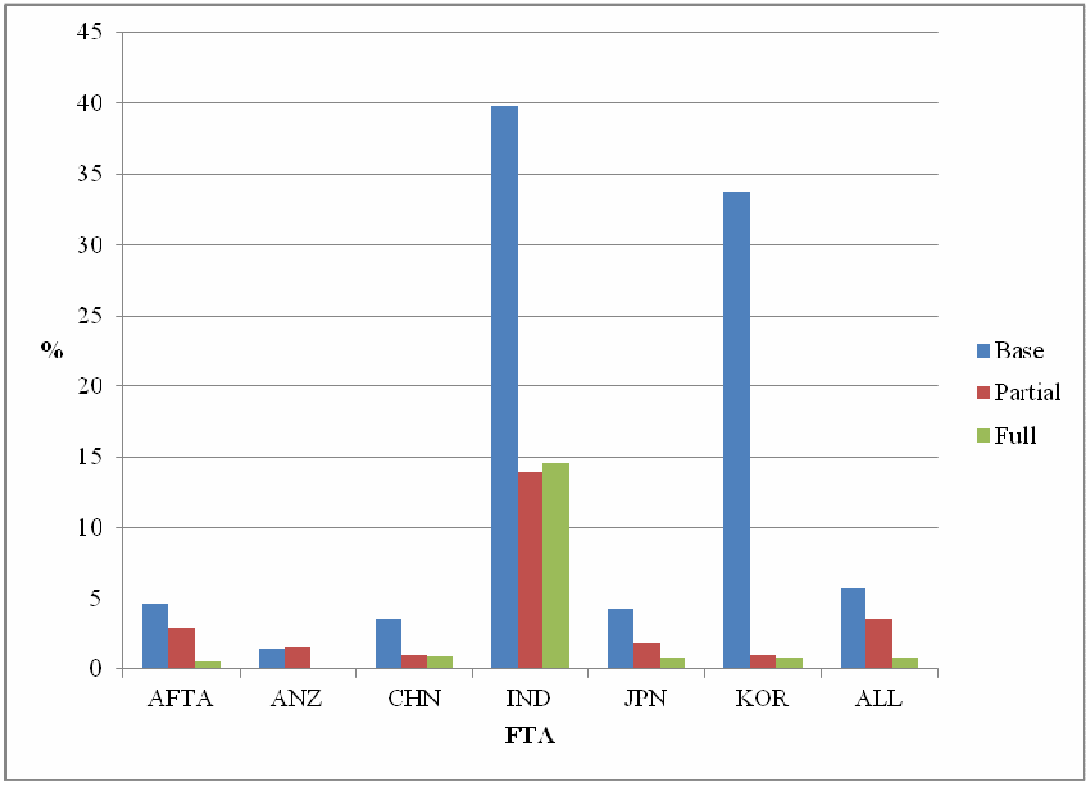
[15] The tariff reductions schedules for Vietnam's tariffs in 2012 were supplied by the Ministry of Industry and Trade. Tariff reductions of partner countries and for Vietnam are available from the ASEAN Secretariat. These are generally in pdf form and need to be tabulated into electronic form. These data are then entered into a GEMPACK utility, TASTE, which aggregates tariff cuts at the six digit level to the 22 user-defined GTAP sectors used here. Trade weights are used for the aggregation procedure.

**Figure 3.1 Vietnam's base and simulated average import tariffs**




Source: GTAP and authors' calculations

**Figure 3.2 Vietnam's base and simulated average tariffs on exports**



Source: GTAP and authors' calculations.

The second set of scenarios simulated is several prospective free trade agreements not yet negotiated. These scenarios show the potential gains or losses from full liberalisation, although the European Union has tended not to liberalise fully in its Economic Partnership Agreements with developing countries. The unilateral scenario would not need to be negotiated, at least with trading partners. It shows the potential gains available immediately.

The simulated output shows the production and trade flows with and without the policy changes from 2007. In both the 2012 and 2018 scenarios, the time horizon is long run, as movement of capital is assumed, but there is no specification of a time path of adjustment. Also removed is the complication of a growing economy on the results. As noted earlier, this means the gains and losses are underestimated in nominal terms, because over five years the economy may have grown 35 per cent and adjustment taken place. The first aspect also means that sectors that appear to contract may merely expand at a slower rate than without the policy change.

## 3.4 Simulation results

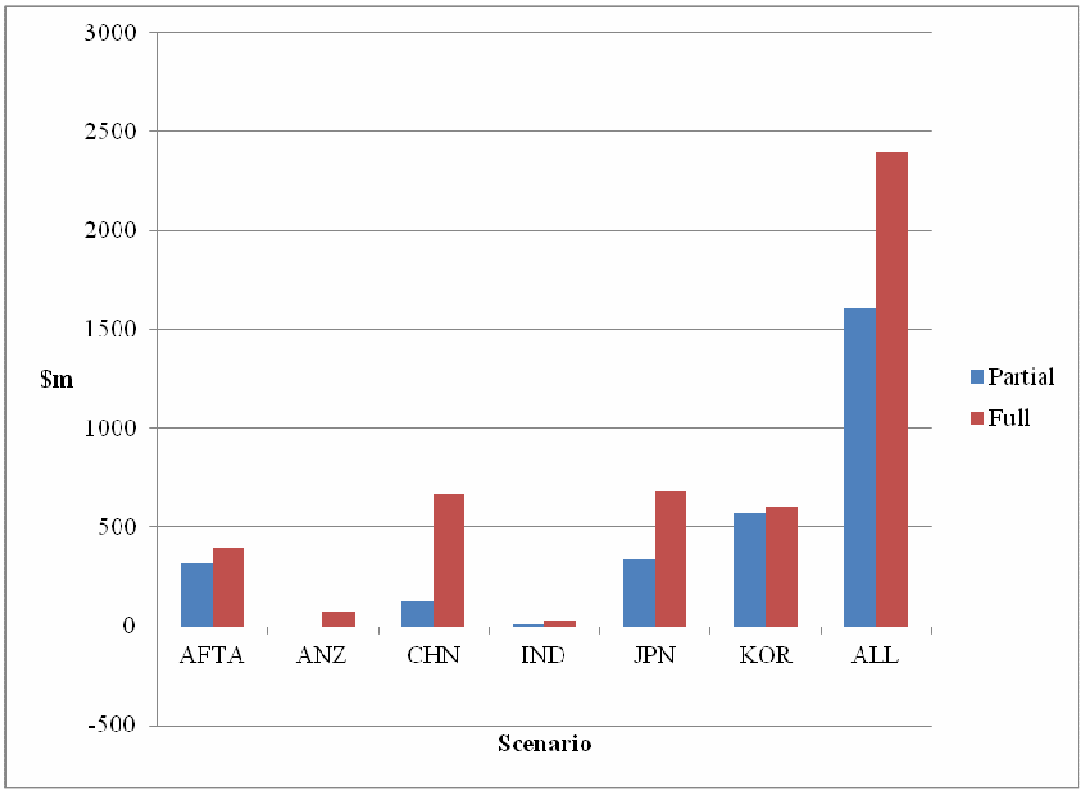
Macroeconomic impact of interest to policy makers includes imports, exports, real wages, employment, investment and tariff revenues. Economists also examine welfare, a measure of real income that takes into account all of the other factors listed here.[16] This is examined first.

*Welfare*

The estimated impacts of various scenarios on Vietnam's annual welfare are shown in figure 3.3. These data show the change in welfare on an annual basis once the policy changes have worked though. FTAs with China, Japan and Korea provide the greatest potential gains in absolute terms for Vietnam, whereas ANZ and India generate very little. There is little trade with Australia and New Zealand and tariffs on such trade are generally low. Vietnam has little trade with India, and its tariffs on Indian exports are generally low initially. The scenario including all partial FTAs generates gains of $1,611 million by 2012 and $2,400 million when fully implemented. The first estimate is about 3 per cent of the base period national income.

[16] The welfare measure used here is equivalent variation, the change in income that would leave consumers no worse off than before the policy change.

**Figure 3.3 Vietnam's annual welfare effects under alternative scenarios**

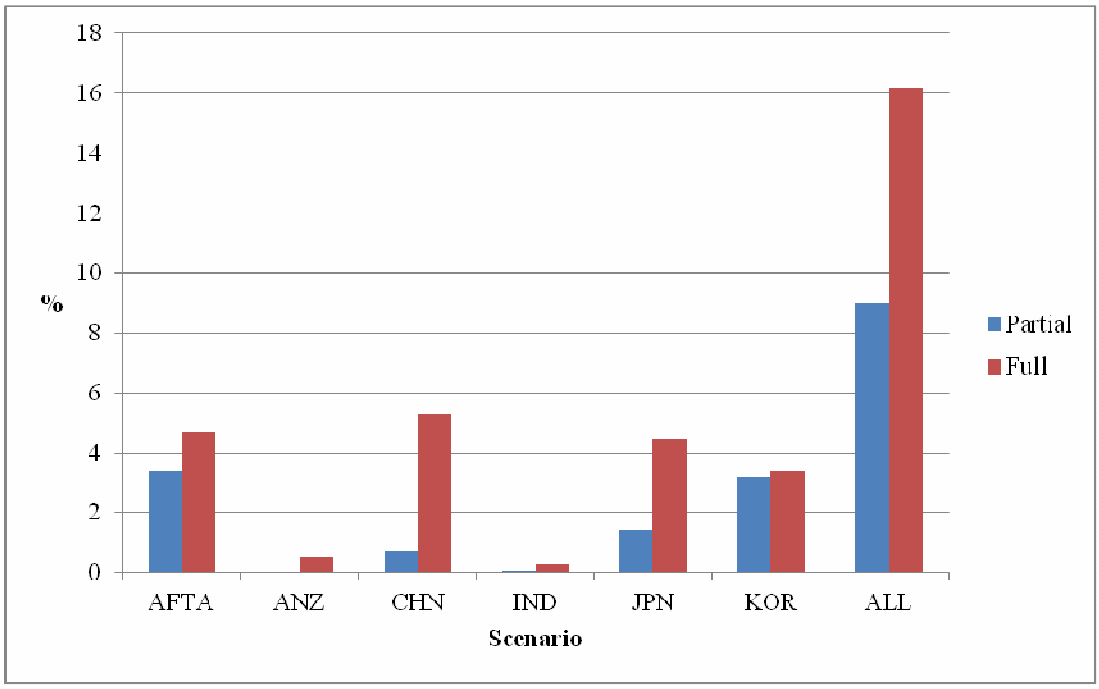



Source: GTAP simulations

*Export and imports*

The estimated trade impacts reveal a similar story. The estimated national export gains from implementing all the agreed FTAs are nine per cent after partial implementation and and 16 per cent following full implementation. The FTAs with ANZ and India achieve very little in export growth, whereas Japan and Korea provide the greatest opportunities. China provides significant additional market access after 2012.

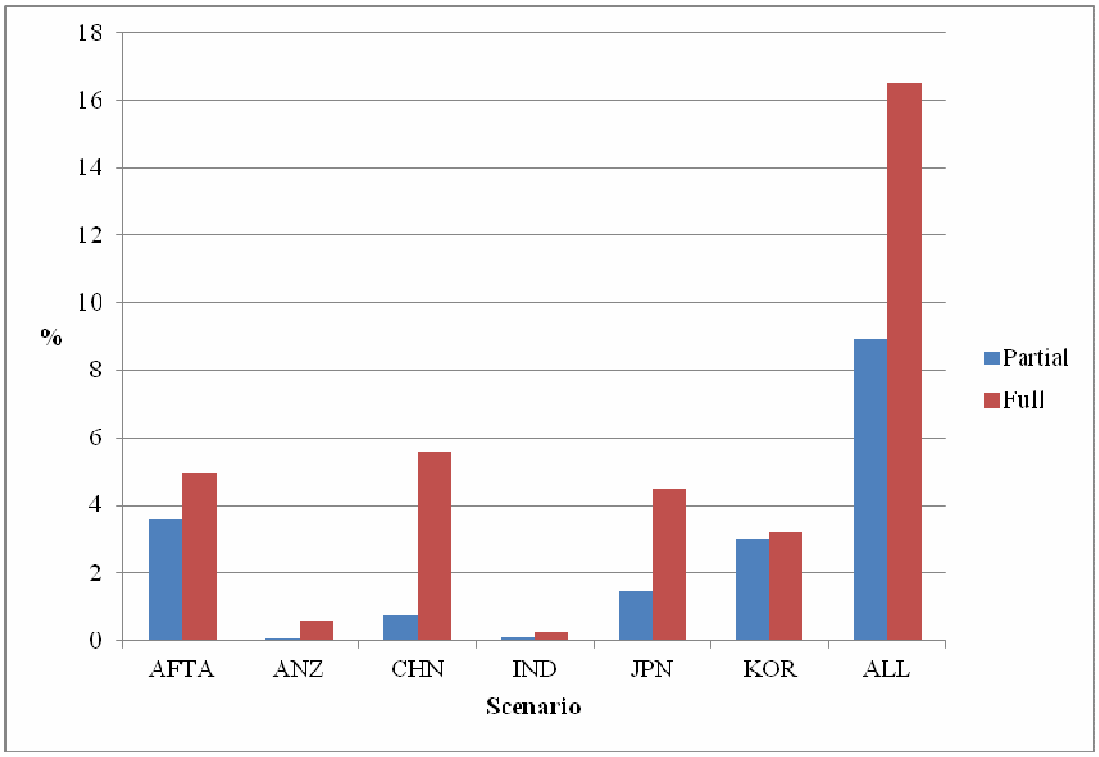
**Figure 3.4 Vietnam's annual change in exports under alternative scenarios**




Source: GTAP simulations

A similar story holds for national imports, figure 3.5. The FTAs with the larger countries provide the greatest increase in imports. China, Japan and Korea along with AFTA provide the greatest benefits in terms of additional market access for Vietnam's exports although India, also a large country, does not.

**Figure 3.5 Vietnam's annual change in imports under alternative scenarios**




Source: GTAP simulation

*The trade deficit*

One possible reason for the apparent reluctance to reduce tariffs is the concern that the trade deficit will increase as tariffs are reduced. The trade, or current account, deficit is imports minus exports, and it is expected to increase when tariff are reduced unilaterally. Many countries do run balance of trade deficits, even in the absence of liberalisation. This not necessarily detrimental, but to offset the current account deficit, there must be a surplus on the capital account, implying that savings must exceed investment. Capital inflows from abroad can boost savings, so long as they exceed outflows. A feature of the model is that global imports must equal global exports and global savings equals global investment. Hence, in the model, as in reality, not all countries can run surpluses or deficits. At a national level, the model assumptions, the closure, requires that the exports and imports grow at a similar rate because in the long run investment is tied to savings. In these simulations the growth in exports is close to equivalent to the growth in imports, but because a deficit exists in the base period, the deficit increases.[17] In the full 'All' scenario, the deficit expands by $775 million from a base of $3,983 million. This is also the value of the capital account. In other words, the question of whether liberalisation would lead to an increase in the deficit in Vietnam is not addressed here because it is assumed in the model that policymakers would in the long run implement a flexible exchange rate to maintain it.[18] In reality more direct policies that attract investment could be used to constrain the

[17] Since exports minus imports must equal investment minus saving, one of these variables must be selected as exogenous.

[18] In an alternative simulation we assume a fixed exchange rate for Vietnam, with capital fixed and adjustment occurring in the balance of payments. Rather than growth in exports and imports of around nine per cent in the

deficit.[19] However, it is a some interest to look at bilateral trade flows. After full implementation of all FTAs, Vietnam's bilateral trade deficit increases with China, Singapore and Japan and some AFTA countries, but not with India, Korea, Australian and New Zealand. The FTAs lead to an improvement in the trade balance with the European Union and the United States, even though these countries do not provide additional market access.[20]

*Real wages and employment*

In this application the increased demand for labour intensive goods following trade liberalisation leads to an increase in both wages and employment of unskilled labour. The estimated changes in employment and wages are shown in table 3.3. The changes are quite significant after full implementation. Employment of skilled labour is assumed fixed, so all adjustment occurs in wages in this case. It is notable that the change in skilled wages is similar to the sum of the changes in wages and employment of unskilled labour. This reflects the substitutability between skilled and unskilled labour.[21]

**Table 3.3 Vietnam's real wage and employment effects under ALL scenarios**

| | **Partial** | **Full** |
|---|---|---|
| | % | % |
| Unskilled employment | 3.0 | 3.0 |
| Unskilled real wage | 2.6 | 7.6 |
| Skilled employment | 0 | 0 |
| Skilled real wage | 4.6 | 9.6 |

Source: GTAP simulations. There is assumed to be no change in total employment of skilled labour.

The increase in employment of unskilled labour has a significant impact on welfare, as shown in table 3.4. The change in national welfare can be decomposed into three effects:

(i) allocative efficiency;

(ii) terms of trade; and

(iii) endowment (labour, capital) effects.

full 'All' scenario, exports are estimated to grow by six per cent and imports by 12 per cent. This implies the trade deficit increases by $3,936 million rather than $775 million.

[19] Currently Vietnam implements a managed float, with the currency tied to the US dollar between adjustments.

[20] Interested readers can compare the bilateral trade totals in tables A3.7 (exports) and A3.11b (imports).

[21] In GTAP there is a common elasticity of substitution for each sector. This determines the substitutability of land, capital and labour in response to changing prices. The elasticities are relatively low, 0.2-0.3, for primary products, but in excess of one for processed agriculture and industrial products.

The allocative efficiency gains, from using resources better, amount to $1,099 million after full implementation. The impact of negative terms of trade effects on the overall welfare impacts for the AFTA, China and Japan FTAs are evident from this table. Importantly, the welfare gains from the increase in labour and capital amounts to $1,229 million respectively. This is the major contributor to total welfare gains of $2,400 million (figure 3.3). The implication here is that it is important to develop a flexible labour and capital markets to take advantage of opportunities as they arise through structural adjustment.

**Table 3.4 Decomposition of Vietnam's welfare gains from full FTAs**

| | **Allocative efficiency** | **Terms of trade** | **Increase in labour and capital** |
|---|---|---|---|
| | $m | $m | $m |
| AFTA | 52 | -100 | 178 |
| ANZ | 23 | 4 | 42 |
| CHN | 299 | -138 | 187 |
| IND | 0 | 11 | 4 |
| JPN | 409 | -76 | 394 |
| KOR | 141 | 283 | 166 |
| ALL | 1099 | 163 | 1229 |

Source: GTAP simulations

*Investment*

The long run closure used here assumes sufficient time has passed for global capital to be allocated to its most efficient use. This re-allocation occurs across countries as well as between sectors as in the short run closure. This assumption has a significant effect on investment, trade and welfare, as shown in table 3.5. In the long run closure the capital stock is increased 14 per cent instead of remaining fixed in the standard closure. This holds down the price of capital, and leads to an increase in exports, imports and welfare.[22]

[22] To gauge the importance of capital, an alternative scenario involves increasing the capital stock in Vietnam. This could follow making capital more productive, or reducing risk to encourage capital inflow by, for example, removing some of the restrictions on foreign ownership. The effect of an exogenous 5 per cent increase in capital is estimated to reduce the price of capital goods by 0.89 per cent and increase exports and welfare by 3.6 per cent and $246 million respectively.

**Table 3.5 The impact in Vietnam of mobile capital under the full All scenario**

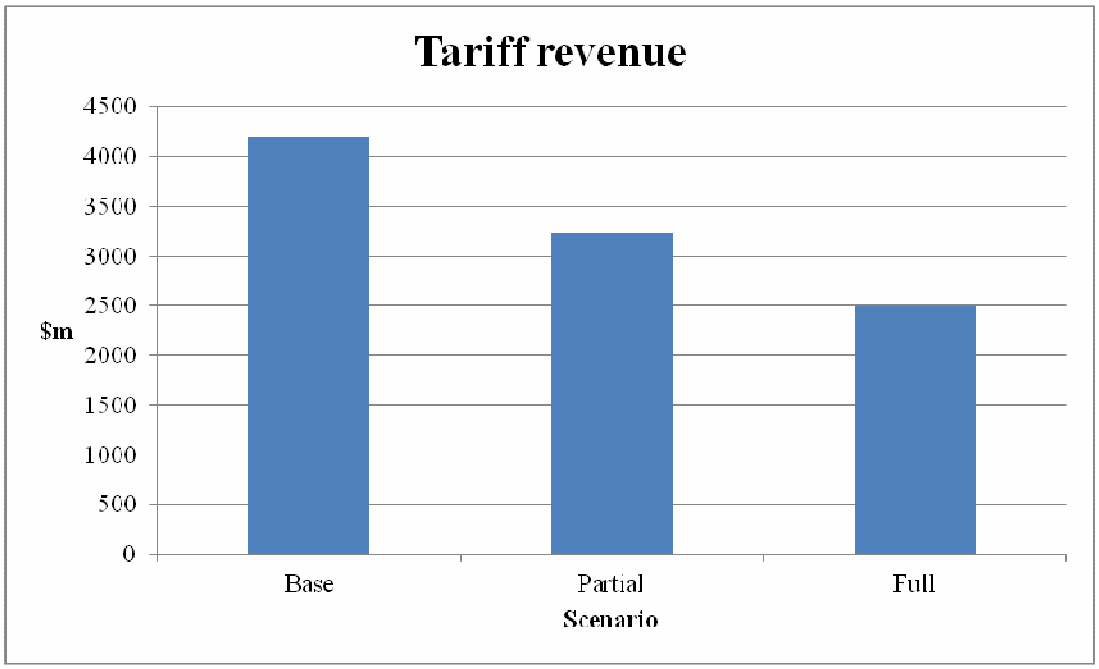
| | Short run | Long run |
|---|---|---|
| | % | % |
| Investment | 0 | 13.46 |
| Price capital | 7.52 | -1.10 |
| Exports | 6.39 | 16.19 |
| Imports | 12.08 | 16.54 |
| | | |
| | $m | $m |
| Welfare | 1116 | 2400 |

Source: GTAP simulations.

*Tariff revenue*

Another variable of interest to policy makers is tariff revenue impacts. Small or moderate changes in tariffs may lead to increases in tariff revenue, because the effect of lower tariffs is increased imports, and the increase in imports more than offsets the lower tariffs. At some point, however, tariff revenue must be reduced as tariffs are reduced, because if they are eliminated altogether the revenue must be zero. In the ALL scenarios, tariff revenue falls from the imputed baseline value of $4,198 million (figure 3.6). The estimated values include tariff revenue from all sources, not only FTA members. GTAP also takes into account rising government revenues from other taxes on, for example, income, consumption and output which should be incorporated in any assessment of revenue impacts of FTAs.

**Figure 3.6 Vietnam's tariff revenue impacts**

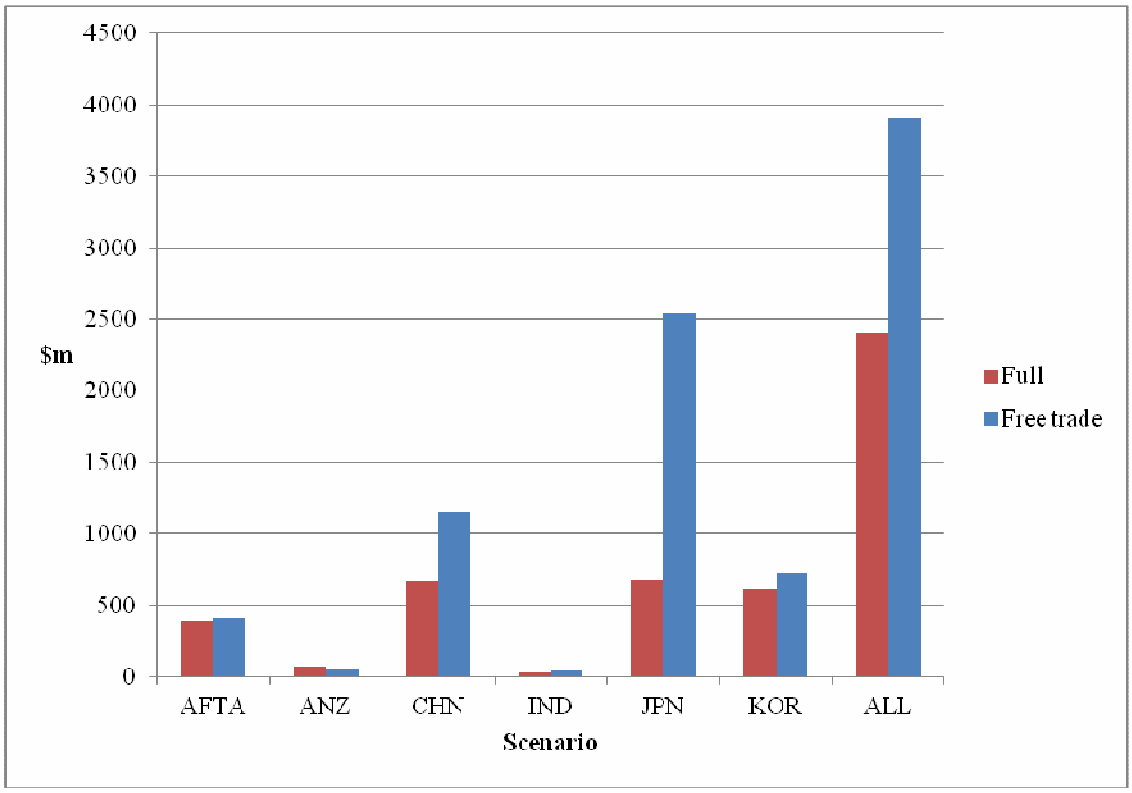



Source: GTAP simulations. The base tariff revenue is not the amount collected but is imputed from trade flows and average tariffs.

*The importance of exemptions*

All the FTAs, with the exception of AFTA which has been under implementation for many years, had considerable exemptions for sensitive products. To determine the importance of these exemptions a further set of scenarios were simulated showing the potential gains had all tariffs on trade with the respective FTAs been removed. This is described here as 'free trade' liberalisation, in the sense that tariffs are eliminated, although only between FTA members. A comparison of the full and free trade welfare effects is shown in figure 3.7. The gains under the free trade scenarios are almost double those from full implementation, $3,913 million as against $2,400 million. This is mainly attributable to Japan, and to a lesser extent, China, because of exemptions, in Japan's case for agricultural products, particularly rice. The remaining exemptions for AFTA, ANZ, India and Korea hardly seem to matter. However, the free trade results may be biased downward because the tariffs are trade weighted, meaning prohibitive tariffs have a low weight.

**Figure 3.7 Vietnam's annual change in welfare under full and free trade liberalisation**




Source: GTAP simulations.

*Prospective FTAs and unilateral liberalisation*

A final set of simulations shows the gains to Vietnam from several potential FTAs. These hypothetical scenarios assume full liberalisation with no exemptions for sensitive products which is most unlikely given past experience so the estimates will be "outer envelope" ones. FTAs with Chile and Turkey provide practically no welfare gains for Vietnam. Chile is a small open economy with few barriers to trade. Tariffs are a uniform six per cent on most goods. Turkey is also a relatively small market. There are some potential gains for Vietnam in primary and processed agriculture, but negative terms of trade impacts in textiles and apparel.

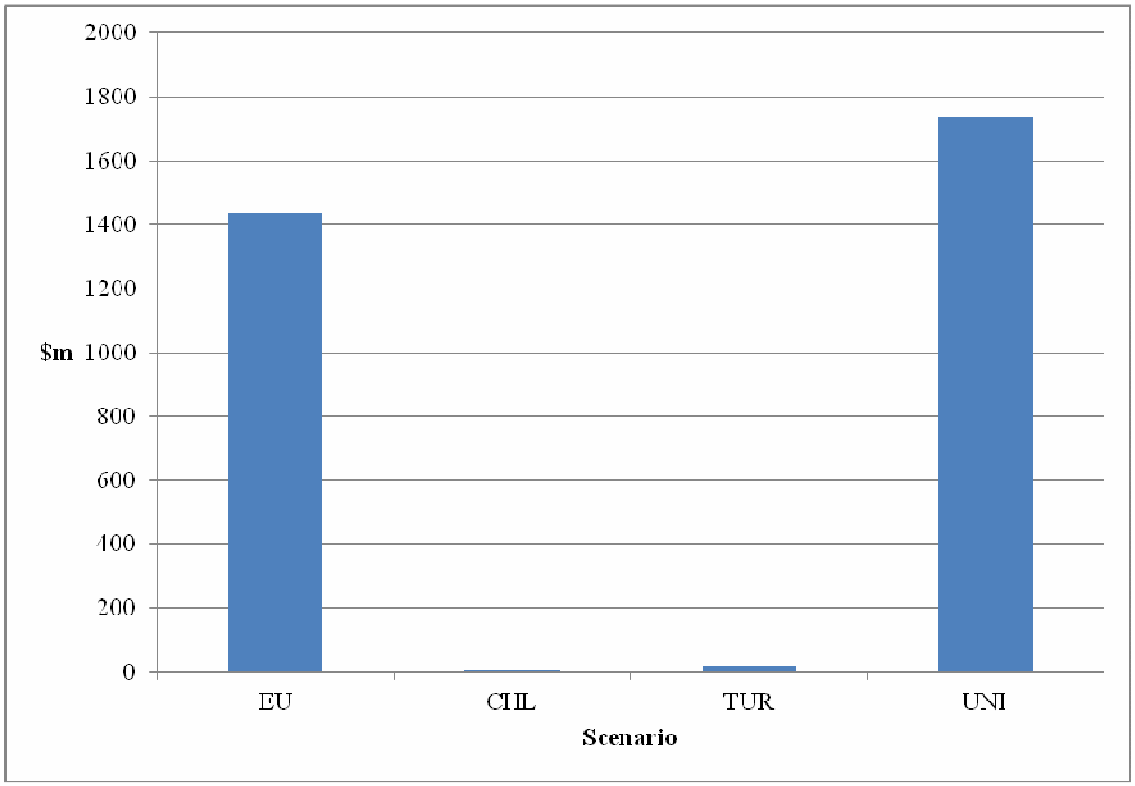
The gains from an FTA with the European Union are significant. Welfare gains of $1,437 million are split between allocative efficiency $462m, endowment (labour market) effects of $690 million and positive terms of trade effects of $257m.[23] Most of the gains are due to increase in exports of primary and processed agriculture, particularly rice. There are currently large tariffs on imports of rice into the European Union. There are also significant increases in the volume of textiles, leather and apparel, (assuming no anti-dumping etc actions), but negative terms of trade effects diminish the benefits in these sectors.

Finally, the benefits available to Vietnam from unilateral liberalisation are calculated at $1,738 million. These can be obtained without negotiation. Here the gains are from improved allocative efficiency ($1,379 million) and labour market effects ($1,802 million) rather than improved market

[23] The remaining welfare effects are attributed to changes in the capital market.

access. There are, however, negative terms of trade effects, particularly in the leather and apparel sectors.

**Figure 3.8 Vietnam's annual change in welfare from prospective FTAs and unilateral liberalisation**




Source: GTAP simulations.

In summary to this point, the macroeconomic results suggest Vietnam is expected to gain in the long run from the various negotiated agreements if they are implemented as modelled here, although the gains could have been greater had the parties been more ambitious.[24] Not surprisingly, the FTAs with the larger markets are estimated to generate the greatest gains in exports and welfare, although these markets appear to have the more significant exemptions. The value of exports is reduced somewhat by the negative terms of trade effects in some cases. The trade deficit may rise, but government revenues are maintained.

*Sectoral effects of further liberalisation*

Perhaps the reluctance of governments in Vietnam and elsewhere to be more ambitious when negotiating trade agreements stems from concerns about negative output and employment effects in specific sectors. While positive changes in sectoral output and employment are opportunities, the negative changes represent challenges to be managed. There is the issue of moving resources from one sector to another, for example from agriculture to textiles and apparel which Vietnam is already addressing through a special training program for agricultural workers.

[24] Some observers have noted an increase anti-dumping and other non-price measures following liberalisation. These factors are not taken into account here.

While there are negative effects, policy changes are implemented over a six or ten year period during which the economy may grow significantly. An economy, such as Vietnam's, growing at 7 per cent per year will double in ten years, and thus a 30 per cent drop in output in one sector may merely represent a slowdown rather than a fall in output or labour use. In the following pages the estimated sectoral changes in output, trade and employment are described for the ALL scenarios. The appendix contains tables for relative and absolute changes in output, exports and imports for both the partial and full ALL scenarios.

*Output*

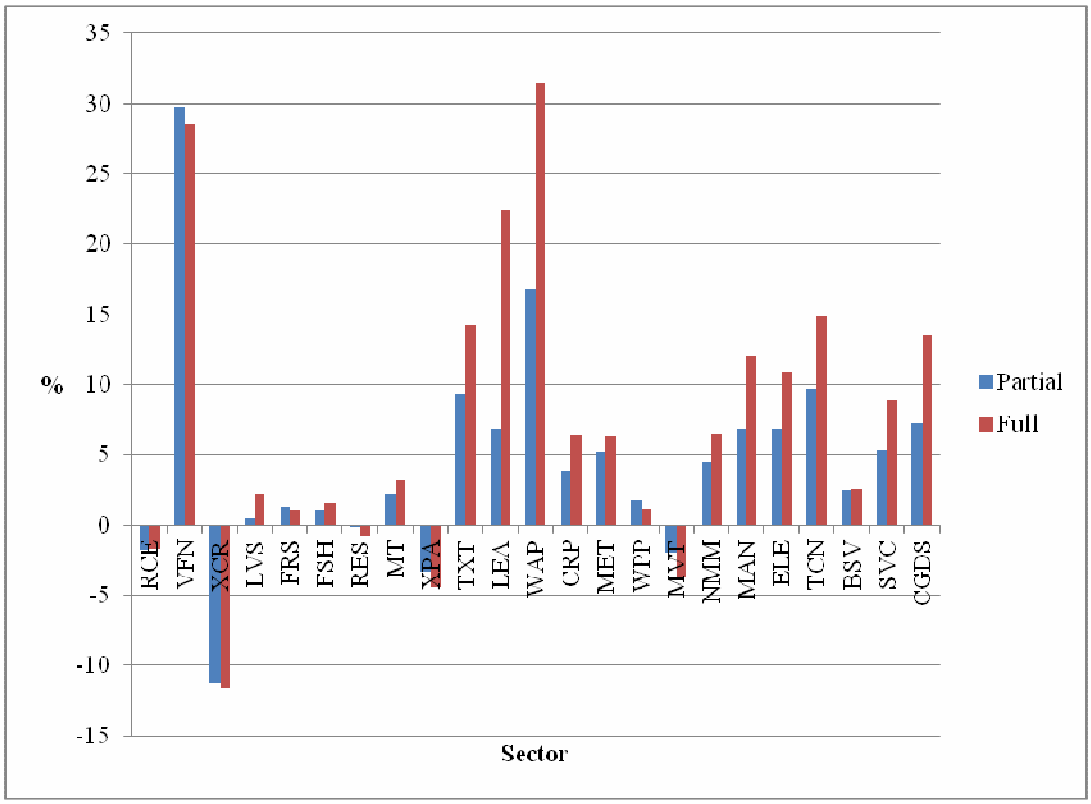
Output increases less than trade because it is constrained by available resources and the existing technology, whereas trade depends on the location of production. For example, the partial All scenario leads to an estimated increase in Vietnam's exports of 9 per cent, whereas the change in output is 3 per cent.[25] At a sectoral level, however, changes in output can be much greater as labour and capital are switched from one sector to another.

The percentage changes observed in output are somewhat arbitrary because they depend on the definition of a sector. For Vietnam, there is a fall in output estimated for the sector 'Other crops'. If this sector was combined with rice, the negative result would disappear. Conversely, if the sectors were more narrowly defined, greater variation would be observed.

For Vietnam, the first observation is that most sectors are estimated to experience an increase in output and exports regardless of the scenario. The output effects for both ALL scenarios are shown in figure 3.9. In percentage terms the major gains are in vegetables, fruit and nuts, wearing apparel, textiles, manufactures, metal manufactures, electronics and leather products. There are also significant increases in the transport and communications service. This is an intermediate input in the production of other goods.

[25] The change in output is measured by the GDP deflator in GTAP.

**Figure 3.9 Potential changes in annual sectoral output for Vietnam from All scenario**



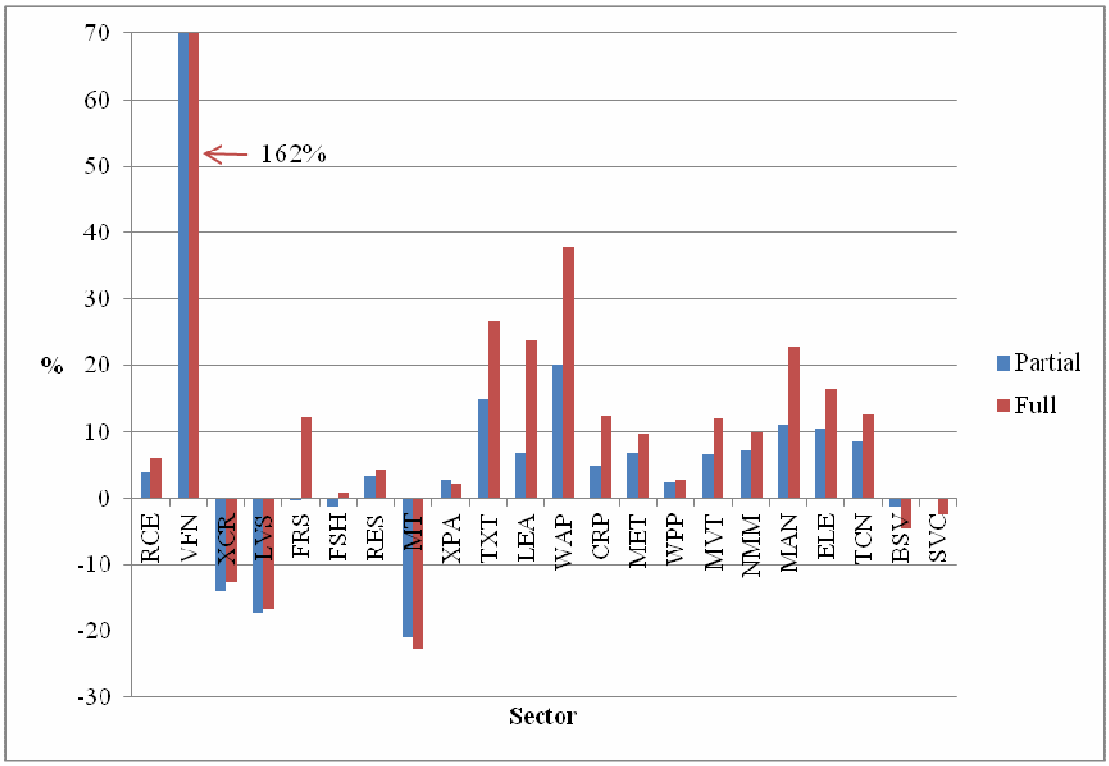

Source: GTAP simulations. See table 3.1 for sector descriptions.

Changes in sectoral output are presented in appendix table A3.2a for the partial scenarios and A3.2b for the full scenarios. The most notable changes are for output of vegetables, fruit and nuts in the Korea FTA scenario. This sector includes manioc. Output changes by an estimated 29 per cent, although this necessitates a switch from rice (-2 per cent) and other crops (-11 per cent). There are also significant changes in textiles (7 per cent) and (apparel 13 per cent) in the Japan FTA scenario. In absolute, as opposed to percentage, terms, the picture is similar (Appendix tables A3.3a and A3.3b). Services and apparel stand out. Services is a large sector with a small percentage change in output, but it makes the biggest contribution to national output, even though no liberalisation occurs in this sector under the modelled scenarios. This reflects the removal of protection from other sectors, which leads to a movement in capital and labour into services. Services impacts would be much larger if services liberalisation as negotiated in AANZFTA was effective and incorporated in the modelling.

*Exports*

The absolute change in annual exports by sector is dominated by apparel, manufacturers, leather, processed agriculture and resources (Appendix tables A3.5a and A3.5b). The percentage changes are shown in figure 3.10 and detailed in Appendix tables A3.4a and A3.4b. The changes in vegetables, fruit and nuts, textiles, leather and apparel are driven by liberalisation in Japan and Korea, especially apparel into Japan. The most notable change is an increase in vegetables, fruit and nut (manioc) exports to Korea. Vietnam's baseline exports of these products to Korea are small, only $20 million, but are estimated to increase to $1,027 million when Korea reduces it current tariff of 688 per cent.

**Figure 3.10 Potential change in annual sectoral exports for Vietnam from All scenarios**




Source: GTAP simulations. See table 3.1 for sector descriptions.

The percentage changes in Vietnam's bilateral exports from the full ALL scenario are shown in table A3.6. The bulk of the additional exports go to Korea ($1,485 million), Japan ($1,372 million), and China ($563 million). In absolute terms the largest changes are in apparel to Japan ($753 million). Other changes of significance include leather ($579 million) to the European Union and apparel to the USA. This reflects increased competitiveness rather than improved market access.

After full implementation of the various FTAs Vietnam's total trade is estimated to increase by $5,223 million. Trade diminishes to four regions, namely Russia, Latin America, Africa and Rest of World although the trade diversion amounts to only $314 million, a small fraction of the trade created. Global trade increases by almost one per cent.

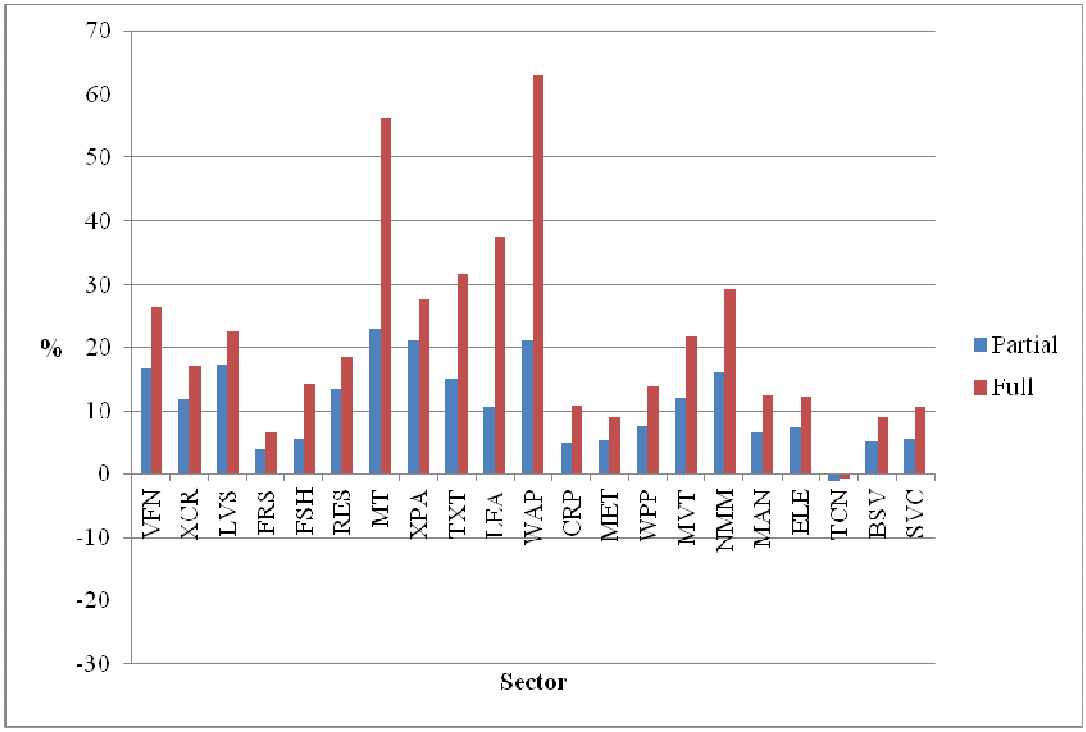
*Imports*

The percentage change in annual imports by sector is shown in Figure 3.11. (For ease of comparison, the scale is the same as Figure 3.10.) In absolute terms the largest increases in imports are in textiles, manufactures, resources (i.e. coal, oil and gas), motor vehicles and parts, and chemicals, rubber and plastics. China ($2,291 million) and Japan ($2,115 million) account for most of the increase in imports. The textile imports, which come from China, Korea and Japan, are driven by the demand for garments, the sector with the largest increase in exports. These countries also supply most of the additional manufactures. Most of the increase in resource imports comes from China and Singapore. Japanese motor vehicles displace imports from other developed countries. The changes in bilateral imports are shown in percentage terms in table A3.10a and A3.10b and in absolute terms in table A3.11a and A3.11b for the partial and full scenarios respectively.

There is some trade diversion of the import side. Vietnam's additional imports from member countries are $8,140 million, while imports from non-members fall by $2,103 million. These estimates are based on the

assumption that no trade liberalisation is taking place in non-members of Vietnam related FTAs. As trade preferences are eroded by further liberalisation the estimates of diversion would decrease.

**Figure 3.11 Potential change in annual sectoral imports for Vietnam from All scenarios**




Source: GTAP simulations. Excludes rice, which shows large change from low base. See table 3.1 for sector descriptions.

*Labour use by sector*

Unskilled labour use increases in most sectors with the notable exception of agriculture, wood and paper products, motor vehicles and petroleum and coal products (table 3.8). The change in labour use is similar to the change in output, although a certain amount of capital-labour substitution occurs, most noticeably in agriculture, where labour productivity is very low. Vietnam has a high intensity of use of unskilled labour in the agricultural sector, at some 76 per cent, according to the GTAP database.[26] The capital/labour ratio is also low in primary agriculture, although it is much higher for processed agriculture. Although the capital/output ratio in Vietnam is quite low, the labour/output ratio is similar to other ASEAN countries because labour is relatively cheap. Unemployment in agriculture is unlikely to be a problem because labour can readily move into other agricultural products. Jobs in the motor vehicle and wood product sectors are a greater concern.

More problematic is the negative impact on skilled labour. Recall that the quantity of skilled labour is assumed not to increase, in contrast to unskilled labour, so there is no upward shift in overall skilled labour use. There are falls in ten sectors. These falls account for about 0.5 per cent of the skilled labour force which needs to find employment in a different sector.

[26] The definition of unskilled versus skilled labour is somewhat arbitrary. What passes for skilled labour in Vietnam would not be classified as skilled in more advanced countries.

**Table 3.8 Changes in output and factor use by sector in Vietnam following full ALL scenario**

| | Output | Unskilled labour | Skilled labour | Capital |
|---|---|---|---|---|
| | % | % | % | % |
| **Sector** | | | | |
| Rice | -2 | 3 | 2 | 8 |
| Vegetables, fruit and nuts | 29 | 37 | 36 | 40 |
| Other crops | -12 | -10 | -11 | -8 |
| Livestock | 2 | 6 | 5 | 8 |
| Forestry | 1 | 0 | 0 | 2 |
| Fishing | 2 | 2 | 2 | 4 |
| Petroleum and coal products | -1 | -2 | -3 | 0 |
| Meats | 3 | -1 | -3 | 9 |
| Other processed agriculture | -4 | -9 | -10 | 1 |
| Textiles | 14 | 8 | 6 | 21 |
| Leather | 22 | 16 | 13 | 30 |
| Wearing apparel | 32 | 23 | 20 | 38 |
| Chemicals | 6 | 1 | -1 | 13 |
| Metal manufactures | 6 | 2 | -1 | 14 |
| Wood & paper products | 1 | -5 | -7 | 7 |
| Motor vehicles and other transport equipment | -4 | -8 | -10 | 3 |
| Mineral products nec | 7 | 0 | -2 | 13 |
| Manufactures | 12 | 6 | 4 | 19 |
| Electronics | 11 | 5 | 3 | 18 |
| Transport & communications | 15 | 6 | 3 | 22 |
| Business services | 3 | -2 | -4 | 11 |
| Services and activities nes | 9 | 4 | 1 | 18 |

| | | | | |
|---|---|---|---|---|
| Capital goods | 13 | 10 | 8 | 21 |

Source: GTAP simulation.

The estimated changes in unskilled labour use by sector for the individual FTA scenarios are shown in table 3.9. The ANZ and India FTAs lead to minimal changes in the demand for labour, but there is greater variation following completion of the other FTAs, most notably in vegetables, fruit and nuts, where the removal of the Korean tariff on cassava leads to a large increase in labour use. The Japanese FTA contributes to large changes in employment in the textiles, leather and apparel sectors, whereas the China FTA increases demand for labour in leather and apparel. Completion of AFTA will lead to increased employment in the metal manufactures, manufacturing and transport and communications sectors.

The potential negative effects occur in agriculture in response to the Korean FTA. Labour is pulled from other crops to produce more cassava. This also reduces demand for labour in processed agriculture and, to a lesser extent, the industrial sector. Other negative effects include motor vehicles following the Japan FTA, wood and paper products (China FTA) and both these sectors following the conclusion of AFTA. There are also negative impacts on employment in business services. In the scenarios there is no change in protection in the service sectors, so these changes, which are small in relative terms but quite significant in absolute numbers, reflect labour being pulled out of these sectors by increased demand in other sectors.

While it is instructive to examine the impacts of the individual FTAs, the various agreements tend to be implemented together, so some of the effects will cancel each other out while others are additive. For Vietnam the most significant effect of concern relates to the motor vehicle sector, where the Japan and AFTA tariff changes combine to reduce employment 8 per cent. The reduction in employment of skilled labour is also estimated to be significant.

**Table 3.9 Changes in unskilled labour use by sector in Vietnam following alternative full scenarios**

| | AFTA | ANZ | CHN | IND | JPN | KOR |
|---|---|---|---|---|---|---|
| | % | % | % | % | % | % |
| **Sector** | | | | | | |
| Rice | 7.6 | -0.1 | -1.2 | 0.1 | 0.1 | -3.7 |
| Vegetables, fruit and nuts | -2.4 | 0.0 | 0.3 | -0.1 | 0.1 | 39.7 |
| Other crops | -2.6 | -0.2 | -0.7 | 0.6 | -0.4 | -9.1 |
| Livestock | 0.7 | 0.3 | 1.0 | 0.0 | 1.5 | 0.9 |
| Forestry | 0.0 | 0.3 | -0.2 | 0.0 | 0.9 | -0.9 |
| Fishing | -0.5 | 0.0 | 0.2 | 0.0 | 1.5 | 0.0 |
| Petroleum and coal products | -0.8 | -0.1 | -1.3 | 0.0 | -0.1 | -0.9 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Meats | -1.9 | -0.2 | -0.7 | 0.0 | 0.3 | -0.9 |
| Other processed agriculture | -3.5 | -0.2 | -1.7 | 0.1 | 0.7 | -4.7 |
| Textiles | 0.2 | 0.8 | 0.2 | -0.3 | 5.9 | 0.5 |
| Leather | 0.1 | 0.9 | 5.7 | -0.2 | 6.1 | 2.3 |
| Wearing apparel | -0.4 | 1.0 | 4.2 | -0.2 | 10.9 | 4.9 |
| Chemicals | 0.0 | 0.2 | 0.8 | 0.1 | 0.6 | -1.4 |
| Metal manufactures | 2.5 | 0.2 | -0.7 | 0.2 | 1.4 | -2.1 |
| Wood & paper products | -1.4 | 0.3 | -2.7 | 0.0 | -0.2 | -2.1 |
| Motor vehicles and other transport equipment | -2.2 | 0.1 | -1.4 | 0.0 | -6.1 | -1.1 |
| Mineral products nec | -1.4 | 0.4 | -1.5 | -0.1 | 1.6 | -0.4 |
| Manufactures | 2.4 | 0.4 | 1.4 | 0.0 | 2.2 | -0.9 |
| Electronics | 1.7 | 0.0 | 0.2 | 0.0 | 2.0 | -0.3 |
| Transport & communications | 4.4 | 0.0 | 3.5 | -0.1 | -0.1 | 0.4 |
| Business services | -1.2 | 0.0 | -1.5 | -0.1 | 0.5 | -1.2 |
| Services and activities nes | -0.1 | 0.2 | 0.2 | 0.0 | 1.8 | 0.1 |
| Capital goods | 2.0 | 0.3 | 2.2 | 0.0 | 3.6 | 1.2 |

Source: GTAP simulations.

## 3.4 Implications for governments

The simulation results provide a few guidelines for policy makers. The first is that size potentially matters. In comparing the alternative FTAs, greater gains for Vietnam are to be obtained from FTAs with China, Japan and Korea. The FTAs with Australia and New Zealand, and a large size country in India appear to have little benefit. In looking ahead, an FTA with the European Union presents an opportunity to access a large market that could generate significant gains.

The second point is that ambition is important. The estimated gains from trade liberalisation within the FTAs as agreed falls well short of the potential gains from free trade with the FTA area.

A third point is that the focus on market access may be misplaced. Unilateral liberalisation would generate a large share of the potential gains.

Tariff revenue would be eliminated under unilateral or other full liberalisation, but other sources of revenue would grow. Partial liberalisation as negotiated under the various FTAs preserves this source of revenue. The increase in imports following tariff reductions is estimated to lead to an increase in revenue.

The scenarios highlight the importance of a functioning labour market. Increase in the use of labour in response to increased demand for labour intensive goods is a significant source of gains in national income.

Under the modelling assumptions, imports and exports are likely to expand at a similar rate. This implies the deficit will increase because the baseline imports exceed exports. A surplus of capital inflows accommodates the trade deficit.

Attracting investment is also important. The modelling allows for capital flows based on competitive returns. Vietnam has to compete with other countries for scarce global capital. Attracting capital is important to economic growth.

A further point is that the phasing in of tariff reductions will ease the cost of structural adjustment. Few sectors are expected to suffer relative decline in output, and considering that the economy may grow at 7 or 8 per cent a year, the falls in employment will be relative rather than absolute.

Individual countries and sectors may experience a fall in output, exports and welfare. Even where there are national gains, there are inevitably significant distributional effects between sectors and between producers, consumers and taxpayers. Given these considerations, it is important for policymakers to consider the most appropriate negotiating proposal when considering further FTAs.

If exports are the main criteria, the China, Japan and Korea FTAs as modelled here appear superior to all other scenarios. Among the potential FTAs, the EU-FTA provides the greatest potential, assuming that the sensitive products are not quarantined.

Vietnam should support an ambitious line on sensitive products. Exemptions appear to have considerable impact on the welfare and exports results, so these are a concern. Exemptions limit liberalisation and changes in output, so there may be some advantage if structural adjustment is a problem but at a cost to increased allocative efficiencies. However, for the sectoral aggregation used here, changes in output are generally less than five per cent and should be manageable with a phase-in period of ten years.

*Appropriate supporting policies*

Given the estimated changes in output in specific sectors, it is important for governments to prepare for the outcome of trade liberalisation negotiations with appropriate supporting policies to build competitiveness to take advantage of the opportunities that are likely to open up as well as to prepare for any challenges in certain sectors or regions. The implementation of some new commitments may require new legislation and/or regulations, as well as administrative action. However, building supply-side capacities or coping with adjustments will likely require new well-targeted expenditures and investments, perhaps supported by borrowing or foreign aid.

The business sector also needs to prepare to position itself to the challenges and opportunities that arise, for example, by gearing up production or diversifying into growth areas. This may imply new capital equipment expenditures or re-tooling to switch to more competitive lines of production. It may require new marketing efforts and logistical support from governments.

In summary, Vietnam would most likely be favoured by pursuing a more ambitious liberalisation in future agreements.

Limitations of the analysis should be noted. Apart from the usual data issues and absence of dynamic gains, there are concerns about whether the implementation would occur as envisaged in the scenarios. Liberalisation exposes an incentive to raise non-tariffs barriers, such as, Technical Barriers to Trade and SPS barriers on agricultural imports. A rise in spurious anti-dumping measures might also be expected. For these reasons, the impacts of liberalisation may be overstated. On the other hand, some of the policy changes simulated may occur in the absence of an FTA agreement. The European Union has plans to reduce its sugar support, and there are numerous regional and bilateral preferential trading arrangements under discussion. Finally, not included here are costs of structural adjustment, of moving resources from one sector to another. Temporary unemployment of labour is usually a feature of such adjustment. This is difficult to calculate, especially in developing countries where it is generally low, but is tangible nonetheless.

No account here has been taken of rates of utilisation, the extent to which exporters take advantage of preferential rates. Here it is assumed that the lowest available rates are the ones used, although there is evidence that rates may be as low as 13 per cent (for example AFTA (PC 2010)). This occurs for example if the preference margin is small or the administrative burden large. By assuming full utilisation, we overestimate the benefits of the modelled tariff reductions and underestimate the benefits of further tariff reductions as well as of transaction costs to obtain preferences.

The whole economy approach used in this chapter comes at a cost. Because all sectors of the economy are modelled simultaneously, there is a limit the amount of detail that can be provided. There are over 5000 tariff lines at the HS six digit level, but GTAP needs to be aggregated to around 25 sectors and regions. Tariff reductions are calculated at the six digit level, but the aggregation procedure necessarily removes variation in tariffs within a sector. Since it is the variation in tariffs that contributes to distortions within an economy, the aggregation underestimates the benefits of reform. In addition, the analysis suggests Vietnam is a competitor with India in exports of beverages. Closely scrutiny reveals that India exports tea while Vietnam exports coffee. These are distinct products. Such issues are examined in chapter 5.

The GTAP modelling makes projections as to the likely impacts of an FTA. However, there is no way of looking back and determining whether the projections held. One form of ex-post analysis is the gravity model, which attempts to identify what impact an FTA could have had on trade. Actual and counter-factual results can then be compared to assess of effect of FTA that have been in place for some time. The next chapter does this.

# Chapter 4 A quantitative assessment of Vietnam-related FTAs using a gravity model

## 4.1 Need for a gravity approach

A gravity model can provide an econometric assessment of the impact on trade flows attributable to an FTA after it has been implemented. Just examining what has happened to trade following the implementation of an FTA does not separate what has been due to the agreement and beneficial to economic efficiency, from what is due to changes in GDP, etc. Proper application of econometrics can do this and more, for example identifying what aspects of the FTA or the country/countries' situation might have been significant in the assessment. More specifically, a gravity model specifies that trade flows between countries are determined by their relative size but countered by their "distances" apart (physically, transport costs, language etc) and other stimulating/restraining factors such as its macroeconomic and business environment. Three types of trade flows are important in respect of an FTA, namely trade between members, imports by members from non-members, and exports by members to non-members. Separation of these types allows trade flows created by the FTA, and those potentially diverted or diminished, to be assessed as well as aggregate impacts.

Why use a gravity model for econometric ex-post (after the event) analysis, say rather than a CGE model, which as illustrated in the previous chapter on ex-ante (before the event) analysis can assess the important resource allocation questions of FTAs in an economy-wide context? CGE models can suffer from a number of theoretical and practical difficulties in ex-post analysis of FTAs, for example CGE models:

- generally assume fixed terms of trade which is inconsistent with another assumption of product differentiation at a national level (Panagariya and Duttagupta 2002);
- use simple characterisations of FTAs that do not capture a key trade restrictiveness aspect of FTAs in Rules of Origin (local content requirements)(PC (2010) modelled, with some difficulty, ROOs in the GTAP model through assumptions that these changed trading costs due to increased compliance costs or altered production costs, and hence export prices, through the incentives for greater use of higher cost, local inputs); and
- use chosen parameters that are not estimated within the models' data sets and thus the statistical properties of the results are unknown (World Bank 2005).

Moreover, the gravity model is said to have a number of positives relative to other modelling, for example:

- the relative ease of obtaining required data;
- a simple and transparent specification that makes some economic sense;
- realism with the facts;
- high explanatory power; and
- the establishment of some standard practices (ARTNeT 2008).

However, there are also a number of negatives associated with the use of a standard gravity model, for example:

- there are questions on the strength of the underlying economic specification;

- it is possible there is endogeneity between changes in trade flows and the formation of agreements (trade increases leading the agreements rather than the other way around which could be assessed through causality testing);
- the FTA dummy may not be able to capture the phasing in of agreements;
- there is the possibility that the FTA dummy is over estimated by also capturing the impacts of other non-FTA policies such as unilateral and multilateral trade policies;
- the model indicates little on what are the underlying (non-modelled) factors when an FTA dummy is found to be significant (e.g. is it tariff reductions, or deeper trade facilitation which has taken place in ASEAN in parallel with all tariff reductions, or other aspects?); and
- the model is not able to consider welfare effects like with the CGE ex-ante modelling, as these are unobservable in the ex-post gravity modelling.

The gravity modelling, or all the quantitative analysis for that matter, should not be viewed as a complete assessment of the impacts which also requires intensive market analysis, industry and policy studies. As stated in USAID (2007), analysis of FTAs should be used for identifying the advantages and disadvantages of current and potential FTAs, quantifying some of the main impacts, and suggesting which future analysis or studies should be undertaken. "The 'rules of thumb' (e.g. 'Johnson (1960) rules') developed are just that – important indicators, not the last word – but they do draw on many decades of economic theory and practical experiences with FTAs."

## 4.2 Model characteristics

### 4.2.1 Data requirements

The dependent bilateral trade variable has been represented by total trade, exports or the often more reliable imports (using the components rather than the total allows the identification of separate export and import diversion effects). As pointed out earlier, there can often be zero data points for bilateral trade, including when trade between the same "country" is incorporated to pick up internal trade of groupings like the EU which also brings in zero trade between single countries if the data is structured, say as a panel.

Also for consistency, the same set of 23 countries/groupings as in the CGE analysis which covers the FTAs under consideration will be analysed, though the focus here is on AFTA, plus major traders with Vietnam, within this set (see table 3.1 for the list of countries/regions). Such aggregations cause some problems in aggregations of variables that are discussed in more detail later like dummies capturing common borders, languages, etc.

Analysis of FTAs can be undertaken by comparing a range of countries, some of which are members of an FTA that has been implemented and had time to have impacts (cross-sectional approach), or by comparing trade in countries before and after an FTA has been implemented and had impacts (time series approach) or a combination of the two (panel data approach). Data is thus required after the implementation and any impacts of the FTA, and before if its impact is to be analysed in a time series approach within the one country rather than just across countries that are included or not in the FTA as in cross-sectional analysis.

Panel data, which has been used of late rather than cross-sectional or time series data, has the added advantage, apart from capturing both cross-section and time variation, of allowing control for the effects of relevant but unobservable/non-measurable heterogeneity (non-Normal variability) across countries or over time. Fixed effects (represents variables like distance that are constant across all importers/exporters) can be estimated directly unlike random effects (variables follow a particular distribution) which make the strong assumption that the unobservable effects are uncorrelated with the observables. However, with a fixed effects' specification, results can be diminished, for example results can only be obtained on the direction, not level of trade. Moreover, estimation is more complicated with more elaborate data sets and associated specifications.

The PC (2003) Table 3.1 characterises possible explanatory or independent variables explaining bilateral trade in an augmented gravity model under the headings of size, geographical ("distance"), monetary and price, and policy and institutional:-

Size variables

- incomes, product of incomes, sum of incomes, similarities of incomes, income per capita, products of per capita incomes, absolute differences in per capita incomes; populations; arable land.

Geographical variables

- distance (also surface area product); island; landlocked; adjacent; language; remoteness; transport costs (ratio of cif/fob prices).

Monetary and price variable

- common currency; exchange rate variability; prices (wholesale, unit, Purchasing Power Parity, exchange rates – Armington aspects).

Policy and institutional variables

- tariffs, non-tariff barriers (NTBs), export taxes; lagged trade flows; colonial relations; Intellectual Property Rights (IPR); corruption.

GTAP data, such as on trade, GDP, distance and tariffs, in the same units as in the ex-ante modelling is used where possible to maintain consistency with the GTAP modelling. ARTNeT (2008-9) relates to an interactive gravity modelling database that can provide time series data for a basic gravity model from 1994 to 2007 and panel data, which includes some trade facilitation and behind-the-border regulatory indicators, but it only allows Ordinary Least Squares (OLS) estimation (see also TradeMap (www.trademap.org) for such information). Much of the specified model's data requirements are in the form of dummy variables, for example the geographical ones, but these are available from a variety of sources such as the CEPII (http://www.cepii.fr/anglaisgraph/bdd/distances.htm) and Rose's gravity model database (http://faculty.haas.berkeley.edu/arose).

### 4.2.2 Model specification

The gravity model specification, though initially based on a non-economic concept, has in recent years been justified on the basis of economic theory, including product differentiation which provides an explanation of intra-industry trade between countries of similar size (PC 2010). This theoretical underpinning has been important for a number of reasons, including the inclusion of traditional competitiveness variables such as prices into the specification. A comprehensive specification based on the PC reduced form specification, which included "third wave" aspects such as investment, is:-

$LnY_{ijt} = a_i + a_j + a_t + b1 LnSGDP_{ijt} + b2RLFA_{ijt} + b3SIM_{ijt} + b4 LnDIS_{ij} + b5 LnRER_{ijt} + b6 LnTAR_{ijt} + b7LIN_{ij} + b8BOR_{ij} + b9COL_{ij} + b10CUR_{ij} + b11IS_i + b12IS_j + b13LOC_i + b14LOC_j + SumMRTA_{ij} + SumMRTA_{i-j} + SumMRTA_{j-i} + ERR_{ijt}$

where

*Ln* natural logs

$Y_{ijt}$ value of exports from country *i* to country *j* in year *t*

$a_i$, $a_j$, and $a_t$ are fixed/random effects

$SGDP_{ijt}$ sum of Gross Domestic Products of country *i* and country *j* in year *t*

$RLFA_{ijt}$ absolute difference in GDP per capita between country *i* and country *j* in year t

$SIM_{ijt}$ similarity in aggregate GDP between country *i* and country *j* in year *t*

$DIS_{ij}$ distance between two largest or capital cities of countries *i* and *j*

$RER_{ijt}$ real exchange rate between country *i* to country *j* in year *t*

$TAR_{ijt}$ average tariff rate of country *i* and country *j* in year *t*

$LIN_{ij}$ lingustic similarity of country *i* and country *j*

$BOR_{ij}$ sharing land border dummy of country *i* and country *j*

$COL_{ij}$ colonial linkages dummy of country *i* and country *j*

$CUR_{ij}$ same currency dummy of country *i* and country *j*

$IS_i$/$IS_j$ island state dummies of country *i* and country *j*

$LOC_i$/$LOC_j$ land locked dummies of country *i* and country *j*

$SumMRTA_{ij}$ is a dummy that is 1 if both *i* and *j* belong to same FTA (*k* at *t*)

$SumMRTA_{i-j}$ dummy that is 1 if importing country *j* belongs to that particular FTA

$SumMRTA_{j-i}$ dummy that is 1 if exporting country *i* belongs to that particular FTA

$ERR_{ijt}$ error term.

In the later PC (2010b) analysis, a more general, simpler specification incorporating greater use of dummy variables is used where the bilateral trade flows depend on the log of the sum of GDPs, the log of the similarity of the GDPs, log of relative per capita incomes, dummy variables representing the (intra-group) FTA (perhaps including GSP treatment) membership impacts and the extra-group FTA membership impacts on imports and exports between members and non-members, time dummies which control for changes in the global level of trade, and asymmetric country fixed effects (e.g. distances) dummies which control changes in the average asymmetric multilateral trade resistance between countries (see Anderson and Van Wincoop 2003). The FTA dummies in this case, and also used in this study, are:

- FTADUM1 which captures the change in trade between members and takes the value 1 if both the importer and exporter are members, and 0 otherwise;
- FTADUM2 which captures the change in imports to members from non-members and takes the value 1 if the importer is a member and the exporter not, and 0 otherwise; and
- FTADUM3 which captures the change in exports from members to non-members, and takes the value 1 if the exporter is a member and the importer not, and 0 otherwise.

In this analysis, the above specifications have been drawn on in conjunction with variants of these that test different size, distance (e.g. sum of surface areas), monetary/price (e.g. exchange rate variability), policy/institution (e.g. corruption/ease of doing business), and dummy variables. Given the aggregations of some countries into groups like the EU, Latin America, etc in the variables, a log of the sum rather than a product of surface areas was derived so as to be more representative of the aggregated surface areas. However, as can be seen later a positive sign was estimated and this is more consistent with this variable representing a size one (which the sum of available land is described as) rather than a distance one as it has been described.

There is a trade-off between having a comprehensive specification that addresses possible omitted variable bias and the inclusion of superfluous variables that diminish explanatory power and introduce multicollinearity (high correlation between explanatory variables). Model selection based around the estimates in respect of the economic theory underlying the specification and model diagnostics will be important in achieving an appropriate trade-off between these aspects.

### 4.2.3 Estimation

As mentioned above, some zeros in the dependent variable in conjunction with the natural log specification can cause difficulties but dropping these data points not only discards useful valid data, it can also bias the estimates. The PC (2003) used a Tobit estimator to overcome the censored nature of the dependent variable. Other estimation procedures have been used to address related problems. For example, ARTNeT (2008) use a Probit on the likelihood that two countries trade which overcomes biases from excluding zero trade points. A Poisson Pseudo (or Quasi) Maximum Likelihood (PQML) estimator has been used to overcome zero observations, and heteroskedasticity introduced by the non-linear log transformation, producing inconsistent estimates (see Cheong 2008). The PC (2010b) also used the Poisson estimator[27]. The Poisson estimator generally relies on "count" data, or data made up of positive integers, and this can affect the information content of the variables, say when they are in log form and rounding produces only a discrete amount of variation.

All the suggested estimates have some limitation or other. The World Bank (2005) addressed this problem by using three different estimation methods (OLS, Fixed effects OLS, and Tobit) and considering estimates as statistically robust only if all three methods generated a significant impact of the same sign. The Meta-analysis described later incorporates a related approach.

## 4.3 AFTA Scenario Results[28]

[27] However, a two-step approach by Cragg (1971) was suggested as being more appropriate, especially when a large proportion of observations of the dependent variable are zero, by a reviewer at the workshop where PC (2010) was presented.

[28] The TOR raises the question of the opportunity to use a gravity model for analysis of AFTA (e.g. Cheong 2008, and Kien and Hashimoto 2005). It also raises the possibility of a using the approach, given appropriate data is available, to other much more recent FTAs such as AKFTA (e.g. Kim 2005 who applied the model to IT over 1985-2000 questionably assuming APEC development could represent that of the AKFTA which came into force in 2009) and ACFTA (e.g. Chen and Tu 2006

The application in this study is aimed at measuring whether AFTA has an effect on trade through any creation and/or diversion effects. This last aspect may not be just a question of looking at the relative size of the coefficients on the trade creation and diverting dummies if both appear in the specification, as the terms of trade change reduces the per unit costs of newly created trade and increases the per unit costs of diverted trade. The model cannot look at welfare effects like the CGE ex-ante modelling as these are unobservable in the ex-post gravity modelling.

Two models (one of exports, Model E, and a similar specification for imports, Model I) were estimated using Gretl software (www.gretl.sourceforge.net) and summaries, including the statistically significant variables following a specification search where the most insignificant, non-theoretically consistent variable was dropped, are included in an appendix at the end of this report. Variables that were tested but not found statistically significant in the specification search included the sum and product of per capita incomes, sum of populations, sum of average tariffs, the difference between average bilateral tariffs between 1995 and 2007 from GTAP [29], sum of exchange rates, and a common border dummy. The two models were very similar in their estimates and diagnostics, the dependent variables using either export or import measures of the same bilateral flows.

The estimates are based on OLS estimation applied to stacked bilateral trade observations (minus trade with themselves) as at this level of aggregation there were no zero observations of the dependent variable of the gravity model specification. The stacking orders export data as exports of the EU to the US, EU to Japan, etc and import data as imports of the US to the EU, Japan to the EU, etc. Derivation of a gravity equation on the basis of a theoretical reduced form of an economic model of trade (Anderson and Wincoop 2003) is only consistent with cross-sectional data analysis, which could lead to downward biases if this is not the case, but the use of OLS estimation can tend to over-estimate the size of the dummy coefficients (Cipollina and Salvatici 2010). Anderson and Wincoop's (2003) multilateral trade resistance term that is associated with their specification, of which there are approximations that can be estimated with OLS (PC 2010), was not significant in the Meta-analysis described later. The proxy of using time-invariant country-pair fixed-effects may introduce misspecifications (PC 2010).

Summarising Model E and Model I, all independent variables (Size (Sum of GDP [GDP_GDP], Similarity of GDPs [GDPSim](see PC 2003)) and Distance [Distance, IslandDum] are significant and of the right sign (perhaps apart from the Sum of surface areas [SurfaceSum] mentioned earlier if it is thought of as a distance rather than size variable – omitting this variable did not affect the basic results though the dummies values fell a little and the Island Dummy was more significant). Size matters. Bilateral trade increases with size implying that growth will strongly affect trade and that policies which contribute to growth will do likewise. Distance matters. Bilateral trade decreases with "distance" implying that policies which can decrease "distance" (e.g. cheaper transport costs and greater English language skills) may assist trade growth. Other things matter. Amongst the significant variables were examples of non-size and non-distance, stimulating and constraining variables such as

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who applied the model over 2000-2004 questionably assuming an ACFTA effect that came fully into force in 2010 applied in 2002-4). In this study the model will only be applied to AFTA.

[29] This was not a good measure of the impact of unilateral liberalisation so evident in reality from the Doi Moi experience as some tariffs actually increased over the period which could have been due to a number of non-tariff factors such as changing trade weights.

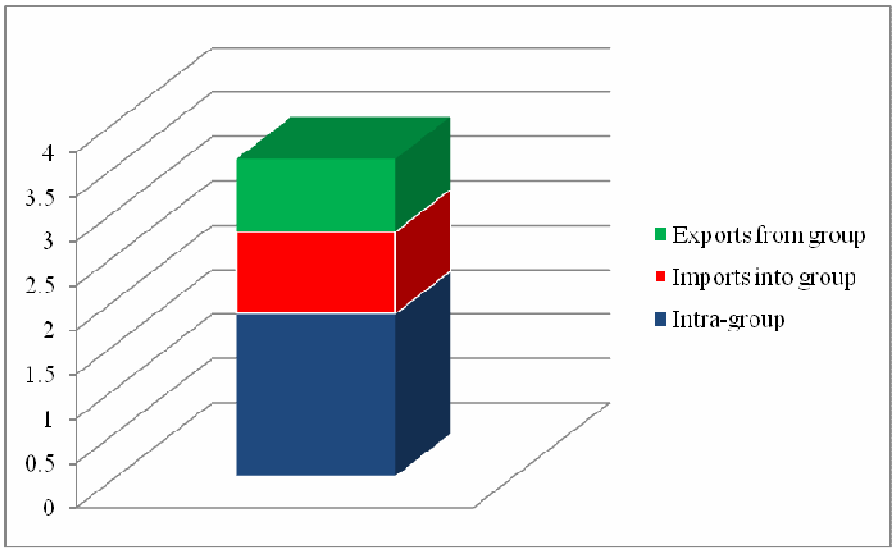
Variability of exchange rates (Standard deviation of bilateral exchange rates [SDBilatExc]) and the Sum of ease of doing business measures [EaseSum] which tend to be more amenable to market and institutional policies such as exchange rate and trade facilitation policies.

The important FTA dummies are positive in the case of the export model (1.83, 1.01 and 0.82) as well as the import model (1.78, 0.92 and 0.87). The estimated coefficients of the dummies in the export model suggest intra-ASEAN exports (which are relatively small compared to intra-EU exports for example) increased most (100(exp(1.83) - 1) = 523 per cent), followed by extra-ASEAN exports to non-ASEAN (175 per cent) and then non-ASEAN exports to ASEAN (127 per cent) (the last two are evidence of non-diversion). There is a similar ordering in the import model with intra-ASEAN imports (which are relatively small compared to intra-EU imports for example) increasing most (493 per cent), followed by extra-ASEAN imports (151 per cent) and then ASEAN imports from non-ASEAN (139 per cent)(the last two are evidence of non-diversion, the relative sizes suggesting that the diversion is greater where the diverter has more influence). The estimate are high (though estimates in PC 2010 had values over 300 per cent[30]) and reasons were given earlier for why this might be the case (e.g. FTA dummy capturing non-FTA related effects increasing bilateral trade) but it is more the signs and relative sizes that are important.

By analysing how much trade is estimated to be increased between members relative to non-members gives a robust ratio indication of openness, or non-diversion properties of the agreements. The absence of negative estimates alone supports the view that AFTA is an open agreement due to multilateral tariffs being lowered to preferential levels, not so restrictive ROOs, etc (Kien and Hashimoto 2005, and PC 2010). In PC (2010b), the ratio of the estimated intra-group bilateral trade to the sum of estimated imports into and exports from the group following implementation of an FTA are compared as a measure of openness. This measure is replicated in Figure 4.1 for the data analysed in this study. FTADUM1 in respect of bilateral trade (1.83), FTADUM2 in respect of imports into the group (0.92), and FTADUM3 in respect of exports from the group (0.82) are compared (a ratio of 1.83: (0.92 + 0.82 =) 1.74, which is conservative relative to the PC (2010b) estimate of a ratio of 1: 3).

[30] The PC had smaller estimates in its final version of the Gravity modeling supplement. This was justified on the following basis "our understanding is that, using a Poisson estimator, a log-linear transformation is not required (as would be the case with a OLS or Tobit gravity model). Instead, in the gravity Poisson model, the dummy variable coefficients may be interpreted as semi-elasticities, with the actual elasticities (at means) conditioned by the other variables in the model (i.e. the GDP-related terms)."(personal communication Felix Barbalet). Using the same basis, the estimates obtained here would be 183 per cent for the increase in intra-ASEAN exports, extra-ASEAN exports 101 per cent and non-ASEAN exports 81 per cent.

**Figure 4.1 Estimated proportional change in trade components due to AFTA's implementation**




Source: Authors' estimates.

Kien and Hashimoto (2005) undertake estimates of these three parameters for AFTA with different estimators and the majority their OLS estimates are even higher than those estimated here, 2.23, 0.69 and 0.99 respectively, whilst the non-OLS estimates (Fixed effects model, Random effects model and Hausman-Taylor instrumental) were much lower at around 0.6, 0.2 and 0.6 respectively.

The FTA dummies capture just AFTA, not other FTAs (or GSP) or multilateral or unilateral liberalisation that would be operating in parallel for some of the "countries", for example Singapore bilaterals from within ASEAN and the CER between Australia and New Zealand, sample countries outside of ASEAN. However, PC (2010b) found "broad alignment" between a restricted and broad set of FTAs, apart from a change in sign in associated agreements for a big FTA in the EU. As mentioned earlier, there are other qualifications of such results like the possibility of endogeneity being present between the bilateral trade and the implementation of the FTA.

There is some support from other analysis that may not have the same limitations of the analysis undertaken here, say in terms of cross-sectional data, less sophisticated variables and OLS estimation, such as PC (2010b) and World Bank (2005) which also shows AFTA to be an open agreement that increases intra and extra-FTA trade.

And the more important information is, if trade does appear to have increased as a result of a FTA, why did this happen, or as put in World Bank (2005), "the interesting policy question is not whether RTAs (FTAs) are categorically good or bad, but what determines their success?". Did trade increase because of preferential lowering of tariffs, openness, comprehensiveness, facilitation of trade, agreements designed to complement a general domestic program of economic reform (as suggested in World Bank 2005) or what? Where possible from the points of view of available measures and appropriate estimation (e.g. no excessive multicollinearity between explanatory variables), such factors should be entered into the model as an explanatory variable outside of the relatively uninformative dummy or any fixed effects, as was the case with the ease of doing business and variability of exchange rate variables.

The above dummy coefficient estimates are also consistent with some Meta-analysis based on a range of estimates from different data, specifications, estimation procedures, etc (Cipollina and Salvatici 2010) which estimates a mean FTA dummy of 0.81 (ranging from -0.07 to 2.35) for AFTA. Meta-analysis addresses the problem of a wide range of very different estimates in gravity models due to different data, specifications, estimation etc, providing more robust, pooled estimates such as that FTAs have a significant positive effect (made up of creation and some diversion) on trade.

In terms of diagnostics, the R-squared type measures of goodness of fit are reasonably large around 87 per cent. Using Gretl with cross-section data, there are few diagnostics apart from some like the Akaike information criterion that can help select between nested versions of the base model. When times series are introduced to the model specification then more comprehensive diagnostics such as Durban-Watson statistics, etc are provided. Some software (e.g. Eviews as applied by CIEM) provides more comprehensive diagnostics (the use of different estimation software showed that the estimates were robust and that there was no evidence of heteroskedasticity) and some diagnostics such as the RESET test for missing observations could be applied separately. Such RESET testing suggested no missing variable misspecification in the models summarised at the end of the report, in which case these may be more efficient estimates of other parameters than the same parameters in a fixed effects model (PC 2010b).

In terms of limitations, as a gravity model does not capture resource allocation effects like a CGE model, the main economic and social effects need to be calculated separately and partially, perhaps using gravity model results such as the changes in (free) trade and associated impacts on employment etc.

### 4.3.1 Future analysis?

There are a number of directions that the gravity modelling could be developed if this was seen worthwhile after taking into account the position of the Gravity modelling in the overall analysis, the net benefit/cost of entering additional data, and the existence of Meta-analysis. Examples of such directions are entering more elaborate variables such as dummies that capture unilateral liberalisation or the variation of regional FTAs from “shallow” to “deeper” arrangements, the latter being found to have generated more trade creation (Ghosh and Yamarik 2003). Unilateral liberalisation could be captured by the change in applied tariffs over the period of the analysis. There is also an issue of entering fixed effects to replace all time-invariant country-pairs such as distance by dummies to address the risk of missing variable bias. However, the fixed effects only capture the average effect over the sample period. Moreover, using time-invariant fixed effects as a proxy for multilateral resistance may introduce misspecifications. There is some value in testing the economic consistency of the specification through such explanatory variables, as well as the information on the “why” question from their separate significance, and to test for misspecification through tests such as Ramsey’s RESET test. That said, entering fixed effects via “country” dummies to replace distance etc resulted in poorer estimates with some non-significant non-dummy variables and a lower R-square of around 0.75. Dummies capturing the impacts of specific FTAs such as AKFTA (into effect in 2009) and ACFTA (started in 2002 but fully into effect in 2010) would be relatively easy to enter the selected models if the available data captured the period when any impacts of the agreements were being realised (PC 2010b did not include the Australia-US FTA which entered into force at the start of 2005 in its gravity modelling for this reason).

In terms of an ex-ante application, MUTRAP (2010) used what is described as a conventional Gravity model to assess the value of a potential Vietnam-EU FTA via its potential impact on tariffs, even though this might be only one, more obvious aspect of an FTA (as acknowledged in MUTRAP 2010), with aspects such as investment and technical assistance on domestic reforms being at least as important. Such ex-ante analysis would be better handled with a CGE model (ITC 2005). A conventional Gravity model, as acknowledged in MUTRAP (2010), estimates bilateral trade flows (not just Vietnam exports as undertaken) as a function of size (combine, not each partner separately as undertaken) and distance, plus FTA and supporting/restraining dummies. Contrary to what was stated in MUTRAP (2010), tariffs can enter as a policy and institutional variable (see PC 2003), as can variables that induce or hamper trade to varying degrees over the estimation period, such as ease of doing business. As mentioned in the last paragraph, using individual country effects as a proxy for multilateral resistance indices as in MUTRAP (2010) has its problems. More basically, introducing many sectors and time may not provide sufficient appropriate data for analysis. For example, using bound tariffs as an explanator may be inappropriate as Vietnam receives GSP, though this has been removed on some sectors such as shoes which has caused negative trade impacts, and agreed low applied tariffs under a FTA would be much more certain. In some sectors, bound tariffs may not have changed over the period and these will provide no more information than a constant term. If, as suggested, tariffs are trending down on average by around 2 per cent per annum recently when exports and GNP per capita are trending up (exports by around 22 per cent per annum over the same period) and capturing the basic trend relationship between them, then bound tariffs are unlikely to capture much. So overall, it should not be surprising that bound tariffs were found insignificant. The relationship of interest concerns the impact on trade of future movements in applied tariffs and if past bound tariffs are not a good proxy for these then the estimated relationship involving bound tariffs may not be very useful. Moreover, GDP/GNP will not change over sectors, only over time (especially as it is in nominal terms and logged, unlike the real exchange rates), so the data set of explanatory variables basically consists of 4 observations not 97 x 4. With a disaggregation to 97 sectors it is most likely the exports dependent variable will contain some zeros and face estimation problems as outlined above. Some diagnostics on the estimated equations, along with the goodness of fits and basic plots of the data, would have been useful to ascertain the situation on the above possible problems and how they might be addressed. Otherwise to conclude, through what is basically an equation suggesting Vietnam exports are only related to European GDP, that tariffs have no impact and thus an FTA should not be entered into on this basis, might be misguided.

Other future directions include the move into time series/panel data as incorporated in the Meta-analysis but there are trade offs here such as long periods diminishing the impacts of large exogenous events like the Global Financial Crisis but being more susceptible to changes in technology, etc. CIEM's research on economic indicators such as Revealed Comparative Advantage measured these over time and the Global Financial Crisis did have an impact as did time in terms of the movement of such measures (see CIEM 2007 for approach). In terms of the objective of the Gravity modelling, to measure whether Vietnam-related FTAs had an impact on trade creation/diversion, the incorporation of earlier data on a specific year basis might add nothing apart from possibly better estimation. ITC (2005) only used cross-sectional estimates in their analysis.

The paucity of quality data has been mentioned in relation to Gravity models with investment as the dependent variable and the PC (2010b) did not undertake estimating such models as was undertaken in PC (2003) for this reason (see also ITC 2005). De Rosa (2008) applied both trade and investment (bilateral inward FDI stock but with a large number of gaps) Gravity models and estimated the trade impact of FTAs at 0.69 (99 per cent increase) and the strongly inter-related investment impact (apart from, unexpectedly, for NAFTA) higher at 0.80 (123 per cent increase). Investment and trade are

strongly inter-related and a lot can be determined on investment from analysis of trade in conjunction with detailed supporting qualitative analysis.

### 4.3.2 Sectoral level analysis

A future direction more specific to the TOR includes application of the aggregate identified specification to specific sub-sectors that were seen as possible 'winners" and "losers" as a result of FTA arrangements. Analysis along these lines was undertaken by Cheong (2008) at the six-digit level over 2001-2003 using a Fixed Effects Poisson Quasi-Maximum Likelihood estimator which showed AFTA had a net trade creating effect at the product level (and Vietnam level[31]), mainly in industries with complex production networks and a high level of product differentiation (e.g. HS8 [Metals, Machinery, Electrical products, and Transportation]). HS1 [vegetable products and foodstuffs] with few of such characteristics, displayed trade diversion and HS4 [Raw Hides, Skin, Leather and Fur, and Wood and Wood Products] displayed both trade creation and diversion. On the basis of this analysis, it is suggested that ASEAN should proceed with liberalisation in sectors like HS4 as the trade diversion effects may be sufficiently mitigated for FTAs to be an acceptable second-best approach if they are the only politically feasible trade liberalisation alternative, but not at the expense of multilateral liberalisation (or openness) which avoids diversion risks. The analysis has a few problems though. It is not a traditional Gravity model in that only unilateral imports are modelled against each country's separate GDP, separate preferences capturing ASEAN and non-ASEAN trade partners, and annual dummies. Also, it would seem advantageous to address trade diversion as appears to be present in agricultural trade through increasing its openness in a comprehensive FTA rather than excluding it and the necessary and inevitable adjustment of resources needed for the export expansion in the trade creation sectors.

There are some issues with Gravity models being applied at this sub-sector level. The model was developed at the more aggregate level and some of the explanators at this level may not be as applicable at the sub-sector level. For example, GDP-related "size" variables may not have a positive relationship with some sectoral trade, the demand for some sectoral products (e.g. HS0: Primary or unprocessed agricultural products) declining with GDP growth, and an economically-specified Gravity model will be mis-specified. Sectoral expenditures and production would be better explanators at this level. Mis-specification in fact appears to be the case in Cheong (2008), with HS4 and HS8 having no other significant explanators apart from the multiplicative ASEAN dummy-preferences variable (in contrast to MUTRAP 2010) and annual dummies. A variable such as "ease of doing business" is an index made up from various measures that may be less applicable at a sub-sector level, such as those more or less dependent on government services, or efficient business driven networks, that are a component of the index. It would be a very intensive exercise to estimate independent Gravity model specifications containing significant sub-components of such measures for

[31] There is other research looking at Vietnam specifically in relation to FTAs, for example Do (2006) who used a Gravity-type model to analyse (unilateral) trade between Vietnam and 23 European countries before recommending the negotiation of a FTA. There are some problems with this research such as the use of little changing distances between Vietnam and the European countries (a more informative "distance" variable, even an EU dummy, would have been more significant and useful). The end of the data period includes the Asian financial crisis and its aftermath, and would adversely influence determination of potential trade. The potential trade that is used in determining the worth of an FTA with the EU is analysed in isolation of other potential FTAs. If ex-ante analysis of FTAs is to be undertaken it would be better to use a more integrated CGE model that takes into account resource constraints etc.

each sub-sector[32]. Thus the Gravity modelling results at the sub-sector level should be treated with even more caution than at the aggregate level, drawing on any specific information of the explanatory variables like "size" and "ease of doing business" at this sub-sector level.

To verify some of the above aspects, the preferred Gravity model estimated at the aggregate level was re-estimated for the Metal manufactures GTAP category (see table in the appendix). Estimates were similar in size (apart from a fall in the estimate associated with the ASEAN exports to non-members dummy) and sign to the aggregate relationship which showed trade creation, and all were still highly significant apart from the "ease of doing business" explanator, and the R-squared had fallen to around 0.71, basically confirming Cheong (2008) results but with a significant traditional Gravity model. Substituting more detailed sector information into the explanatory variables like value of sector output instead of aggregate GDP, as well as sector tariffs which are very low (average around 5.4 per cent), resulted in the dummy associated with ASEAN exports to non-members, ease of doing business, similarities in values of production, and sectoral tariffs being non-significant (see table in the appendix). This reflects the type of aggregate measure problem mentioned above in relation to ease of doing business. When isolated, there is a significant negative relationship between bilateral trade and tariffs as captured in Cheung (2008) but this loses its significance when size etc variables are incorporated. However, it would seem that the other quantitative approaches covered in the next chapter that work more naturally on much more disaggregated data would be more appropriate for impact assessment at the sectoral level.

## 4.4 Implications

The above analysis has built off the development of Gravity modelling in terms of some more comprehensive data, more appropriate (theoretically consistent) specifications, and supporting estimation. The broad result is that AFTA has led to a growth in trade, both intra and extra-group, bearing in mind qualifications such as the limited nature of the FTA dummy (just AFTA), and cross-sectional data etc that could lead to an over-estimate of the impact if not measured as a ratio. However, other analysis of AFTA (e.g. World Bank 2005, PC 2010) and some Meta-analysis (e.g. Cipollina and Salvatici 2010) are supportive of this key broad result.

The more important information is if trade does appear to have increased as a result of a FTA then why did this happen? What was it due to, just a lowering of tariffs, or other factors such as ASEAN's openness (multilateralising preferential tariffs, not very restrictive ROOs, etc), comprehensiveness (all sectors, including some agriculture), or facilitation of trade (improving through macro and micro policies and technical aid, the significant exchange rate volatility and "ease of doing business" type measures)? Analysis in World Bank (2005), PC (2010) and Hill and Menon (2010) found openness, such as in AFTA, was an important factor in the growth of trade being in terms of creation rather than diversion. There is also case study evidence from the CACM increasing its trade once it became an agreement that supports openness as in AFTA being an important factor in trade growth via creation with little diversion (PC 2010). Hill and Menon (2010) look at AFTA in more detail, for example the low rate of utilisation that worries some but reflects strong production networks in the broader region, Singapore's free trade position, not very restrictive ROOs, and preferences low enough that any transaction costs generally outweigh the benefits from using them. PC (2010) found that some aspects

[32] Lloyd (2010) pointed out that gravity models are a reduced form of trading models which do not incorporate trade preferences on individual categories of goods unlike the sectoral trading models discussed in Cheung (2008), Do (2006) and MUTRAP (2010),

of agreements could be associated with trade diversion, for example those with primarily non-trade objectives, as many developed countries are promoting. Analysis in World Bank (2005) leads to suggestions of the characteristics of a "good" FTA such as maintaining MFN rates and being comprehensive. In USAID (2007), an economic framework is used to develop guidelines for economic characteristics that are more favourable for welfare enhancing FTAs, including "Johnson rules" (Johnson 1960) when there are external terms of trade effects (e.g. choose partners with more responsive export supply curves and smaller differences in costs with other suppliers).

This application could be elaborated by bringing in panel data, additional variables into the specification (e.g. UN Index of political stability, more elaborate measures of the form of the FTA (e.g. shallow or deeper), and separate measures of underlying factors in the dummies such as measures of openness), sub-industry specification with estimation that accommodates inherent problems like zero observations, etc to obtain information not already available from the Meta-analysis or other more specific, relevant analysis. However, despite such elaborations, a gravity model approach will have limitations, for example it will have little to say on new product trade that may develop from an FTA or other forms of trade arrangements. Moreover, there is an issue of consistency/inconsistency with the CGE analysis which is a broader, more appropriate resource allocation framework with different assumptions, etc.

As mentioned in the introduction, the gravity modelling, or all the quantitative analysis for that matter, should not be viewed as a complete assessment of the impacts which also requires intensive market analysis, industry and policy studies, aspects that have been addressed in the qualitative surveys that are discussed in the next chapter.

# Chapter 5 Sectoral level analysis

## 5.1 The role of sectoral analysis

In evaluating the impact or potential impact of any FTA, a crucial feature concerns the potential industry supply response to any FTA induced change in prices, costs, or the general trading environment. Indeed, this is the key supply side effect of an FTA which then governs changes in output, employment, incomes, and ultimately welfare. (Of course, there will be demand side effects as well, but these tend to be less sensitive to sectoral aggregation.) A careful review of specific industry performance has thus proven to be a useful tool in coordination with the more rigorous quantitative methods presented above.

In particular, there are certain advantages and insights to be gained by exploring industry data at a more disaggregated level than has been done so far. For example, within particular sectors of interest, specific narrowly defined industries or products can be isolated to insure that the higher level of aggregation used in the earlier sections is not hiding something of interest. Also, when investigating the impact of an FTA, it is useful to match the actual tariffs applied more closely with the actual product data. For example, at the 2-digit HS level a sector may appear to be highly protected in a market of interest, but it might happen that the particular export products of interest to Vietnam are not so protected in that market. Or the opposite: what appears to be low sectoral level protection in a potential FTA partner market may turn out to incorporate some very high tariffs – tariff peaks – for particular products of export interest to Vietnam. (For example, for certain vegetable starches exported to Korea, tariffs range from 0 to 800 per cent. But without investigating trade at the highly disaggregated HS 6-digit level, it would be impossible to discover that for products of interest to Vietnam – HS 071410 – Korean tariffs are indeed quite high at 887 per cent.) In such a case, trade negotiators would want to be made aware of such peaks.

Beyond the advantage of drilling deeper into the structure of trade and protection, sectoral level analysis can also rely on actual interviews with and surveys of the business community. Thus, the analysis can reveal important yet subtle aspects of a sector that may need further consideration. Such insights can serve to inform the more quantitative economic studies as to relevant parameter values. For example, labour markets may be tight for some groups of workers such as skilled labour, but not for other groups. This information can feed into the more formal economic modelling of the Vietnamese economy. Or, there may be important but hard to observe non-tariff barriers which market interviews could reveal. For example, trade might be hindered by unnecessary bureaucracy or non-transparent regulatory requirements in the importing country. Such barriers are of particular concern to Vietnam where many exports such as seafood are sensitive to SPS and TBT compliance.

Finally, a closer look at the sectoral data can serve to corroborate the results of the earlier quantitative analysis. If things all point in the same direction, the researcher and the policy-maker can have more confidence that nothing important has been missed. If something looks at odds with the earlier analysis, then the sectoral analysis can raise a warning sign and direct further investigation. Thus, the sectoral analysis should be viewed as very much complementary to the CGE analysis and the Gravity Model analysis of earlier chapters.

### 5.1.1 Methodology

While a market economy tends to lead to the efficient allocation of a nation's resources, it is nonetheless of interest to have a sense in advance as to where the market might lead. While this

cannot be precise given the complexity of Vietnam's economy, nonetheless it would be useful for policy-makers or trade negotiators to be alerted to what general trends in the economy might flow from various FTAs. Such information could help to identify which sectors merit special attention in negotiating market access in an FTA, or, in the case of import-competing sectors, which industries can be expected to grow more slowly or even contract over time and so represent adjustment challenges. The quantitative analysis presented above did this already, but at a fairly aggregated level. So in this chapter we will begin to delve into the impact of FTAs at a more detailed level. Roughly, since the gains from international trade and specialisation reside in relative differences between industries in economies, our search is for measures or indicators of such overall beneficial differences.

At the sectoral level, we pursue two suggestive, but inherently partial equilibrium methodologies, aimed to complement the general equilibrium analysis presented earlier. One is more quantitative, relying on summary measures of industry performance and trade compatibility, while the other is manifestly qualitative, relying on actual interviews with stakeholders. Additionally, we rely on secondary sources such as government and industry studies and reports. Specifically, the next section introduces summary indexes of competitiveness and compatibility between FTA partners based on disaggregated underlying trade data. This data is then used to identify sectors most likely to contain products of particular export or import interest to Vietnam. Then, the data are disaggregated still further in these sectors in order to identify specific more narrowly defined products of interest.

We are also particularly interested in any barriers that may have impeded exports (or imports) in the absence of an FTA. Therefore, in subsequent sections, the trade data are analyzed at the narrowly defined 6-digit level in order to identify which products and which FTAs are likely to be associated with the highest preference margins. We also introduce some partial equilibrium simulations of potential product specific effects. Finally, we turn to some lessons learned from some interviews with relevant stake-holders about industry potential.

### 5.1.2 Partial equilibrium indicators and measures of FTA potential

Summary indicators and measures of competitiveness have been widely used in the policy discussion surrounding appropriate FTA partners and prospects for FTA success. (For a discussion of the logic and usefulness of such indicators see, for example, Mikic, 2005; ITC, 2005; Ng, 2002; et al.) Here we present the results for Vietnam of some of the most widely used such measures. The Summary Indicators of Potential are the most widely used and so provide some basis for comparison with other countries. (See especially World Bank (2002).) The Tariff Revenue Approach focuses on a combination of trade flows and tariff barriers, and so is particularly useful to trade negotiators in identifying which sectors or products might deserve the most attention in terms of trade liberalisation and market access. The SMART Simulations rely on partial equilibrium simulation exercises based on parameters specified by the modeller. While useful, these simulations are meant as more of a check for robustness of the general equilibrium modelling rather than as a quantitative analysis per se. Still, the results have proven useful in other studies and seem consistent with our earlier findings in this study.

We begin with a description of some of the indicators and then report the results for Vietnam. We consider both sectoral export opportunities and import challenges. The discussion of the results provides some context and links the indicators to the general equilibrium results above. In subsequent sections we turn specifically to the Tariff Revenue Approach and the SMART simulations, again focusing on both export opportunities and import challenges.

## 5.2 Summary indicators of potential

Operationally the conditions more or less favourable to a successful FTA can be measured with some aggregate trade flow indexes summarised in Chapter 2. These indicators are also discussed in World Bank (2002) and elsewhere. Additionally, some of the more disaggregated measures such as Revealed Comparative Advantage are commonly used as indicators of sector potential or challenge in the presence of trade liberalisation (Balassa, 1965; Iapadre, 2001; Mikic, 2005). We use such indicators to suggest where a more disaggregated analysis might be most telling.

### 5.2.1 Results for Vietnam and various FTAs: Identifying beneficial FTAs and high impact sectors

*Identifying Beneficial FTAs*

In searching for favourable FTAs, economic theory tells us that gains are likely to be largest when the countries involved have very different comparative advantages and so more dissimilar export advantages and import needs. Additionally, although harder to identify, gains could flow alternatively from some sectors being able to exploit economies of scale by enlarging the size of the export market for products wherein production costs can be reduced if the production run could be lengthened. Such products tend to be differentiated manufactured products such as electronics or automobiles. Thus we are searching for favourable FTA partners based on trade data measures of economic dissimilarities or scale economies.

Table 5.1 below is a useful starting point and presents several summary indicators of beneficial trade potential between Vietnam and several of its actual or potential FTA partners that are the focus of this study. These indicators – denoted above as XS, TC, TI, and IIT – are ambitious in that each distils the relative favourability of a trade agreement into a single number. Clearly such grossly simplified analysis is meant only to complement more detailed analysis and more formal economic modelling as presented earlier. Nonetheless, there is a certain intuitive appeal to the indexes and the results do seem to accord with our economic intuition and earlier results. The FTA partners considered are those of the ASEAN agreements with China (ACFTA), Korea (AKFTA), India (AIFTA), and Australia-New Zealand (AANZFTA). Also, AFTA members Cambodia, Indonesia and Malaysia are included in some, but not all, of the tables as representative of an agreement already at various levels of implementation in three fairly different economies. Finally, we include the EU as a potential FTA that has generated considerable interest currently.

**Table 5.1 Alternative indicators of trade potential**

| | Export Similarity (XS) | Trade Complementarity (TC) | Trade Intensity (TI) | Intra-industry Trade (IIT) | Intra-industry Trade (IIT) for HS>79 |
|---|---|---|---|---|---|
| **Australia** | 38.50 | 49.12 | 5.077 | 0.119 | 0.455 |
| **China** | 45.39 | 42.29 | 0.849 | 0.273 | 0.219 |

| | | | | | |
|---|---|---|---|---|---|
| **India** | 54.01 | 45.90 | 0.261 | 0.167 | 0.283 |
| **Indonesia** | 55.29 | 48.88 | 1.232 | 0.430 | 0.486 |
| **Rep. of Korea** | 34.68 | 49.39 | 1.038 | 0.249 | 0.229 |
| **Malaysia** | 47.58 | 40.81 | 3.280 | 0.375 | 0.505 |
| **New Zealand** | 32.12 | 52.31 | 0.765 | 0.086 | 0.211 |
| **EU-27** | 38.15 | 56.83 | 1.222 | 0.213 | 0.422 |

Source: Derived from Comtrade

*FTAs Reflecting Relatively Favourable Market Dissimilarities*

The first three columns of Table 5.1 are useful and telling. The Export Similarity Index (XS) in column one summarizes the similarity (higher values of XS) or dissimilarity (lower values of XS) of the export bases for Vietnam and various trading partners. The index ranges from zero to 100. As a general rule, lower values identify more amenable FTA partners for Vietnam in that more trade will arise between these partners. (Of course, if this increased trade represents mere trade diversion to the new FTA partner owing to high initial Vietnamese import tariffs, then the gains will be smaller and so it is important to reduce this eventuality by pursuing a course of open regionalism.) By this measure, the impending FTAs with Korea and Australia-New Zealand appear the most favourable. On the other hand, an FTA with India appears the least favourable by this measure because of the relative similarity of the export bases.

The second column of Table 5.1 reports on the Trade Complementarity (TC) Index for Vietnam and various FTA partners. This index ranges from zero to 100 and compares the export strengths of Vietnam with the import needs, as revealed by actual trade flows, of other countries. High values are indicative of more trade creation and a value of 100 indicates the most favourable match-up. Once again, Korea and Australia-New Zealand are indicated as the most compatible partners. India appears as the least attractive FTA partner.

Finally, column three of Table 5.1 looks at potential trade compatibility in yet one more way. The Trade Intensity (TI) Index measures the extent to which trade between Vietnam and the other countries is higher or lower than would be expected based on the countries' importance in world trade. A value for TI greater than unity is viewed as indicating a more favourable FTA as the countries already trade more than might be expected. While the results are somewhat mixed, only India, and marginally New Zealand, appear as less attractive match-ups using this measure.

The evidence for China is somewhat mixed based on the index numbers, but it is not negative. Indeed, the proper interpretation is only that Korea looks to be the most attractive FTA partner, not that China is unattractive.

A tentative conclusion that emerges from this analysis is that particularly attractive FTAs include Korea and to a lesser extent China. Australia and New Zealand are also attractive, but they are smaller, already open economies and so the gains are likely to be small. The AFTA countries generally do not appear to be as strong of sources of potential gain, although we have not included Thailand and Singapore. India is on the surface the least attractive FTA partner. However, while India does not appear to be so attractive relatively, there are still certain products of interest to Vietnam that would benefit considerably from an ASEAN-India FTA, as is reported below.

Although beyond the scope of this study, we also computed the index values for trade between Vietnam and the EU. In terms of future FTAs, the EU appears to be especially attractive in terms of our summary measures. This undoubtedly owes to the EU's wide range of relatively capital intensive/technology intensive products, with substantial diversity, that are generally higher up the value added chain compared with Vietnam and its more labour intensive comparative advantage goods. Additionally, since the EU is economically quite large, the gains to Vietnam are likely to be large as well.

*FTAs Reflecting Relatively Favourable Scale Economies*

As noted earlier, a number of researchers have suggested that an FTA that increases the size of the export market could bring additional gains through cost reductions associated with increased scale of production (Krugman, 1995; Helpman and Krugman, 1985, 1989). Indeed, in early studies of the European economic integration process, such scale economies were found to be the main source of substantial gains (Balassa, 1961). The concept is difficult to measure however. One approach that is consistent with recent models of international trade based on scale economies and product differentiation is to measure the extent of trade in similar products between countries, or "intra-industry trade."

This concept is proxied in Table 5.1 by the measure reported in the last two columns labelled Index of Intra-industry Trade (IIT). The index runs between zero – no intra-industry trade – and unity – all intra-industry trade. An IIT of .400 would indicate that about 40 per cent of trade between Vietnam and the other country was in similar product groups. Note that in contrast to the standard gains from trade that arise from differences in comparative advantage, as summarised in our first three indexes, the gains here would arise from average cost savings due to increased production. Two measures of IIT are presented, the first using all of the trade flow data and the second using only data for more processed manufactured goods – i.e. industries HS 79 and beyond. The latter measure is usually taken as the appropriate ones since it is in manufacturing that we expect to find scale economies and differentiated products.

Using this index, Australia is the only non-AFTA country with a current FTA that exhibits much intra-industry trade with Vietnam, and even that IIT is not high. Among the AFTA countries reported here, Indonesia and Malaysia reflect at least some such trade. Beyond the current FTA agreements, the EU reflects modestly high levels of intra-industry trade. Compared with trade between more developed economies, however, none of these numbers is very large. (For example, the IIT for the United Kingdom's trade with the world is .854. And most EU countries' trade with the world as a whole is well over .680.) This suggests that, at least currently, Vietnam's gains from any FTA are likely to reside mainly in traditional sources of comparative advantage and not in economies of scale in manufacturing. While this may vary for a particular industry, the overall conclusion is probably no surprise.

In sum, the source of gains to Vietnam from any FTA is likely to depend on traditional comparative advantage based on things like availability of lower cost labour and certain plentiful resources, like rubber or aquaculture resources. Thus, the FTA partners for which the trade data based indexes reflect maximum economic dissimilarity are suggestively the better partners. The EU and Korea would appear to have the most potential for mutually beneficial trade with Vietnam through an ASEAN FTA. China and Australia-New Zealand also appear as the next best partners, and India appears as the weakest.

### 5.2.2 Identifying high impact sectors

We next disaggregate the data in order to make some specific sector level comparisons. Table 5.2 in the Appendix reports on two useful measures of industry potential for Vietnam discussed above (Section 3.1), Relative Growth Rate (GR) and Revealed Comparative Advantage (RCA). (Also, the RCA is computed using two different measures of Vietnam's exports, one based on export data and the other based on importing countries' data on imports from Vietnam..) Subsequent Tables presented below then combine these RCA measures with the RCA measures for potential FTA partners and with another measure of competitiveness for those partners, Export Specialisation (ES). In particular, Table 5.2 reports for Vietnam at the 2-digit product (HS) level the industry GR and RCA, irrespective of the export markets in question. The GR measure is indicative of performance because it shows which sectors are growing most rapidly in Vietnam's trade. As a general rule, faster growing export sectors are more promising and slower growing sectors less so, although caution is advised in any interpretation of the data. For example, a small increase in the exports of a small sector can yield a large growth rate whereas a quantitatively larger increase in the exports of an already large export sector can yield a lower growth rate. Thus, it is common to report the GR at several levels – columns 1 to 3 – along with some other measures of competitiveness like the RCA – column 4. For perspective, we also show the growth rate shares for Vietnam, and the World growth rates for each sector.

The RCA index is particularly useful, and much used in policy analysis, because it mimics a country's comparative advantage. When the RCA > 1, the product's share in national exports exceeds its share in world exports and in this sense "reveals" a country's comparative advantage in that product. Typically, at the 2-digit level of aggregation, some more narrowly defined products in the group could still be imported. A higher RCA has the interpretation of a stronger comparative advantage and, of course, an RCA < 1 indicates a revealed comparative disadvantage even though some of the more narrowly defined products in this sector are typically nonetheless exported. That is, such a product has less potential than other export products. The RCA can also be compared at the product level for various countries and so is useful for assessing potential FTA trade. The RCA index can also be compared with the Export Specialisation (ES) index to gauge potential export market penetration into a particular country such as a potential FTA partner. These comparisons are reported in Table 5.2 (GR and RCA VN) and Table 5.3 (RCA and GR ranked by RCA) in the Appendix.

The main point of interest in Table 5.2 is that both GR and RCA of Vietnam are quite variable by product. Also, the range of the GR is quite large – from -25 per cent to 346 per cent -- reflecting either low initial levels of exports or order disruptions for a particular year. For this reason, we also report the indexes over time below.

Table 5.3 in the Appendix shows the exports of Vietnam ranked by RCA, from highest to lowest, along with the growth rates. Of note is that high RCA products tend to have high growth rates, but not

always, as for example with HS 14 (vegetable plaiting materials…) or HS 23 (residues, wastes…). For details, see Table 5.3(RCA and GR ranked by RCA) in the Appendix.

As a kind of check on the sensitivity of our results to the particular data classification scheme used here (Harmonized System, which is more trade oriented), we also made the calculations using the more production oriented SITC data. In these calculations, we also included a time series going back six years. The results are reported in a later section.

*Export Opportunities*

Results in Tables 5.2 and 5.3 are reported at the 2-digit HS and SITC level, and so product sectors are still somewhat aggregated. Later we will disaggregate the sectors much further. Nonetheless, based on these measures, Vietnam has very strong export potential generally in the following product groups, listed in order of strength of revealed comparative advantage along with the 2-digit HS code:

**Table 5.4 Export opportunities for Vietnam**

| HS | Product Description |
|---|---|
| 09 | Coffee, tea, mate and spices |
| 64 | Footwear, gaiters and the like, parts thereof |
| 03 | Fish, crustaceans, molluscs, aquatic invertebrates nes |
| 46 | Manufactures of plaiting material, basketwork, etc. |
| 62 | Articles of apparel, accessories, not knit or crochet |
| 10 | Cereals |
| 61 | Articles of apparel, accessories, knit or crochet |
| 65 | Headgear and parts thereof |
| 08 | Edible fruit, nuts, peel of citrus fruit, melons |
| 16 | Meat, fish and seafood food preparations nes |
| 94 | Furniture, lighting, signs, prefabricated buildings |
| 42 | Articles of leather, animal gut, harness, travel goods |
| 11 | Milling products, malt, starches, inulin, wheat gluten |
| 40 | Rubber and articles thereof |
| 50 | Silk |

| | |
|---|---|
| 14 | Vegetable plaiting materials, vegetable products nes |
| 63 | Other made textile articles, sets, worn clothing etc |
| 41 | Raw hides and skins (other than furskins) and leather |

Furthermore, subject to more disaggregation, Vietnam appears to have some potential in the following products groups:

**Table 5.5 Export opportunities for Vietnam**

| HS | Product Description |
|---|---|
| 80 | Tin and articles thereof |
| 53 | Vegetable textile fibres nes, paper yarn, woven fabric |
| 69 | Ceramic products |
| 55 | Manmade staple fibres |
| 54 | Manmade filaments |
| 27 | Mineral fuels, oils, distillation products, etc |
| 52 | Cotton |
| 19 | Cereal, flour, starch, milk preparations and products |
| 34 | Soaps, lubricants, waxes, candles, modelling pastes |
| 59 | Impregnated, coated or laminated textile fabric |
| 44 | Wood and articles of wood, wood charcoal |
| 07 | Edible vegetables and certain roots and tubers |
| 96 | Miscellaneous manufactured articles |

Generally, these results are consistent with earlier studies, e.g. (CIEM, 2007), and the lists compiled by the Central Statistical Office (CSO) based on their information and data. Note that the RCA is indicative of Vietnam's underlying comparative advantage at the sector level. These sectors will contain strongly globally competitive products. However, the ranking of sectors by RCA need not coincide exactly with the largest exporting sectors for Vietnam, although the rankings are related and not far different. Vietnam's level of exports by sector and some characteristics of each sector are reported in Table A5 in the Appendix.

*Disaggregation of Product Groups*

While suggestive of which general sectors will form the core of Vietnam's export base, the data are still aggregated at the 2-digit level and so may conceal just which more narrowly defined products are of special interest. For example, Vietnam has a strong comparative advantage in the sector HS 09 (coffee, tea, mate and spices). But which specific products matter? Coffee, tea or spices, or all three? In order to answer this question it is necessary to disaggregate the sector data more finely. This information is presented in the Appendix in Table A5.5 for HS 09 and for 18 sectors of particular interest (high RCA or other expressed interest) in Table A5.1.

In the case of HS 09, consider Table A5.5 which breaks down the more aggregated sector HS 09 into its component parts at the 4-digit level. As it happens, of the sector's total exports of US$2,256 million, the main products of this group are overwhelmingly coffee with exports of US$1,860 million, followed by some spices, especially pepper with US$274 million of exports. Tea turns out to comprise only US$92 million of the sector total. Note that Table A5.5 also identifies products in the sector by export potential, with coffee and pepper being characterized as "stars," while several other spices are identified as "emerging." Tea is denigrated as a "snail" with low volume and falling market share.

Delving even deeper into the sector trade, we discover that the main export markets are the USA, the EU, and somewhat Japan. None of the current ASEAN FTA partners are important export destinations. However, Vietnam has shown that it can export coffee competitively, so it is important to make sure that it is not a tariff or NTB that is precluding Vietnam coffee exports. This analysis is done for each ASEAN regional agreement below in Sections 5.3 and 5.4. However, by way of example, consider the lower part of Table 5.5 which further disaggregates Vietnam's coffee exports to India into the very narrow 6-digit level. As it happens, Vietnam currently exports only unroasted coffee to India with a value of about US$10.6 million. But the trade has been growing at 19 per cent over five years even though it confronts a staggering 100 per cent ad valorem equivalent tariff that India applies to Vietnam's coffee exports. Clearly this is a product which stands to gain substantially from the AIFTA so long as coffee is not exempted and can expand its production. In fact, according to economic theory (Bhagwati, Krishna, and Panagariya, 1999), the immediate gain from reducing the Indian preferential tariff to zero would be more than US$10.6 million per year for this one product alone!

Table A5.1 in the Appendix reports on a similar analysis with respect to some of the other sectors of interest. Table A5.1 is arranged by product, showing the export potential of the product in each of the five ASEAN FTA partners. The data were then further disaggregated using the following rule for imports and exports: A two-digit sector was investigated if the simple average tariff for imports in that sector was 40% or greater and if the value of imports was greater than $500,000. Sectors with import values greater than 5% of total imports from a partner country with a simple average tariff of 15% or greater were also included in the more detailed report. For each sector selected for further study, the four-digit sectors with the largest import values were chosen. Four-digit sectors were selected until their value of imports summed to at least 75% of total imports for that two-digit sector. The same procedure was followed for exports.

At the sector level, disaggregating to the 6-digit HS level (Table A5.1supplement) reveals some of the key more narrowly defined products of export interest to Vietnam in trade with the new ASEAN FTA partners. These are shown in Table 5.6 below. Note that this is not necessarily a list of Vietnam's most competitive exports (although many on the list are), but rather products in which Vietnam is

competitive, there is a demand for the products in the destination market, ***and*** exporters confront tariff barriers which an FTA could address.

**Table 5.6 Products of export interest to Vietnam**

| HS Code | Product Description | Important Market for Potential Export Expansion |
|---|---|---|
| 071410 | Manioc (cassava), fresh or dried, whether or not sliced or pelleted | Korea |
| 080111 | Coconuts, dessicated | Korea |
| 080119 | Coconuts, excluding dessicated | Korea |
| 080132 | Cashew nuts, without shell, fresh or dried | Korea, India, Australia |
| 090111 | Coffee, not roasted, not decaffeinated | China, India |
| 090121 | Coffee, roasted, not decaffeinated | China |
| 100630 | Rice, semi-milled or wholly milled, whether or not polished or glazed | India |
| 110814 | Manioc (cassava) starch | Korea |
| 121120 | Ginseng roots usd primly in pharm,perf,insecticide,fungicide/sim | Korea |
| 160510 | Crab, prepared or preserved | Korea, India |
| 160520 | Shrimps and prawns,prepared or preserved | Korea, India |
| 160540 | Crustaceans nes, prepared or preserved | India |
| 160590 | Molluscs and other aquatic invertebrates prepared or preserved | Korea, India |
| 350510 | Dextrins and other modified starches | Korea |
| 400110 | Natural rubber latex, whether or not prevulcanised | India |
| 610439 | Womens/girls jackets, of other textile materials, knitted | Korea, China, Australia, New Zealand |
| 611020 | Pullovers, cardigans and similar articles of cotton, knitted | Korea, India, Australia, New Zealand |

| | | |
|---|---|---|
| 611030 | Pullovers, cardigans and similar articles of man-made fibres, knitted | India, Australia, New Zealand |
| 640319 | Sports footwear,o/t ski,outr sole of rbr/plas/leather&upper of leather | Korea, China, India, Australia, New Zealand |
| 640320 | Footwear,outr sole/uppr of leathr,strap across the instep/arnd big toe | New Zealand |
| 640391 | Footwear,outer soles of rubber/plast uppers of leather covg ankle nes | Korea, China, India, Australia, New Zealand |
| 640399 | Footwear, outer soles of rubber/plastics uppers of leather, nes | Korea, China, India, Australia, New Zealand |
| 854430 | Ignition wirg sets&oth wirg sets usd in vehicles,aircraft etc | China |
| 854460 | Electric conductors, for a voltage exceeding 1,000 V, nes | India |
| 61xxxx | Womens/girls apparel, most categories | Australia, New Zealand |
| 62xxxx | Mens/boys apparel, most categories | Australia, New Zealand, India |

The import barriers confronting these products are discussed in Sections 5.3 and 5.4 below wherein trade is arranged by each of the four ASEAN FTAs. Note that this list of products is consistent with the earlier results from the CGE model. Also, note some interesting opportunities. For example, China traditionally is a large consumer of tea. However, recently younger Chinese have been consuming increasingly more coffee. Since coffee carries a high tariff in China, the ACFTA represents a source of potential gain for Vietnam's coffee exporters.

*RCA in Vietnam and Some FTA Partners*

Of course, Vietnam may have a strong revealed comparative advantage in the same sectors as does a potential FTA partner. Hence, its competitive advantage would be nullified in such markets. In order to investigate this possibility, we can compare the sectoral RCA of Vietnam with that of potential FTA partners. (Note that this comparison represents a more disaggregated analysis of the summary indicators discussed earlier.) Table 5.7a reports on the results of this exercise.

Focusing only on Vietnam's strongest RCA sectors compared with current or potential FTA partners, the results show reason for optimism. That is, product match-ups look favourable. This is reported in Table 5.7a (Appendix) where sectors are arranged in descending order from the highest RCA for Vietnam.

In particular, note that the RCA of Vietnam's most competitive exports are often among the least competitive of the potential FTA partners. But this is not always the case. Whereas Korea, Australia, New Zealand, and the EU have little comparative advantage in the sectors where RCAs are high for Vietnam, this is not true of China and somewhat India. To some extent, this explains when ranking FTA partners, Korea and the EU look more attractive, while China and India seem less so. But overall, the results here are encouraging and supportive of successful FTAs.

*RCA and ES Comparisons*

A similar encouraging result emerges when the same high RCA sectors of Vietnam are compared with the index of Export Specialization (ES) of the FTA partners. The ES is a measure at the sector level of Vietnam's export strengths against the import needs of trading partners. An ES > 1 indicates favourable specialization opportunities for Vietnam in the partner market. The results are reported in Table 5.7b in the Appendix which lists products of Vietnam ranked by RCA against the ES for each sector in each of the countries listed. Clearly, Vietnam's exports match up well with the markets of ASEAN FTA partners. Especially strong sectors for Vietnam's exports to many FTA partners are coffee, footwear, aquaculture, garments, rubber, fruits and nuts, some vegetable products, and certain types of furniture. In a later section we will disaggregate some of these sectoral results in order to look more closely at just which products are in play. For more detail, see Table 5.7b (RCA VN and ES partners)

Again, we emphasize that these are just suggestive indicators and not a substitute for more rigorous economic analysis or, for business, genuine market research. Nonetheless, it is noteworthy that the results at both the market and product level seem consistent with the quantitative analysis of the CGE reported above.

*Import Challenges*

Of course, the gains from international trade and specialization accrue from producing more of a nation's comparative advantage goods and less of the comparative disadvantage goods which may be acquired more cheaply through international trade. That is, a nation's resources – labour, capital, land – need to be shifted into the relatively efficient sectors and out of the relatively less efficient sectors so that some of the extra output can be exported in return for more of the cheaper importable goods than could be obtained through domestic production. As a practical matter, in a growing economy like Vietnam, resources are not typically actually shifted between sectors though there has been some movement out of agriculture into growth areas, encouraged by training, but as new labour and capital flow into the economy over time, most of these new inputs move into the relatively more efficient sectors since that is where the opportunities are best. Thus, for example, new entrants into the labour force will tend to move disproportionately into the export oriented sectors as trade liberalization is pursued. And retiring workers in import-competing sectors simply will not be replaced since wages would need to be higher than these industries can profitably afford.

At the sectoral level, the industries least likely to expand with trade liberalization could be tentatively identified as those in sectors with the lowest Revealed Comparative Advantage. Again, while some more narrowly defined products within the 2-digit sector could be exported, the trade data reveal that this is mostly not the case for the sectors. These are import-competing sectors. (Of course, more disaggregation will be needed to be more specific about just which products in each sector are the importables and the extent to which the domestic sector is protected in Vietnam currently. This is addressed in Sections 5.3 and 5.4 below.) Using the same calculations as above, but looking now for low RCA numbers, the industries least likely to expand on account of trade liberalization in the future in Vietnam are in the sectors shown in Tables 5.8 and 5.9 (Appendix). (Note that in a growing

economy like Vietnam's, even the most challenged sector could expand or not contract very much as the economy simply gets bigger. This is discussed later in the report.)

In the table, the first columns report the HS code and products for the more complex, quality oriented, relatively capital-intensive/resource intensive sectors (HS 76 and above). For many of these sectors Vietnam has a relatively low revealed comparative advantage – column 3 -- and so these represent sectors which can expect to be challenged by imports to the extent that there is any domestic production in Vietnam currently. Of course, the trading partners in new FTAs may themselves not be competitive exporters of the products in these sectors, and so little would change. In fact, this is not the case as can be seen in the last three columns of the table which report the RCA for each of these sectors for China, Korea, and the EU respectively. In all but two of these sectors – HS 80 (tin and tin articles) and HS 94 (furniture, lighting, signs, prefabricated buildings) – not only is Vietnam not a competitive exporter (RCA < 1), but at least one of the other countries appears to be strongly competitive (RCA > 1).

As one would expect with liberalized trade, both Vietnam's exports and imports are bound to rise. Of course, this is exactly the source of the gains from trade. Nonetheless, Table 5.9 below shows the 14 Vietnamese sectors that have little or no comparative advantage and, if there are import barriers now, will surely see imports rise.

Most notable here are tanning inputs, cocoa, pharmaceutical products and wood pulp. Of course, if there are no import barriers and/or no domestic production now, then the FTAs will make no difference to producers. We explore this in the next section.

*Disaggregation of Product Groups*

In order to explore the import challenges for more narrowly defined products, we again disaggregate the trade data further. This is reported in Table A5.2. In the case of imports, two issues arise concerning the imported products. First, does Vietnam have any significant production of the products? If not, then imports will not be disruptive. Second, if there is domestic production, does Vietnam have in place trade barriers for the products? If not, the imports already have access to the domestic market and so nothing will be changed by the FTA.

However, in fact many import tariffs in Vietnam are currently significant and will be lowered over the years as the agreements are implemented. This will then erode the competitive position of the local industry in the domestic market if the FTA partner is able to export the product to Vietnam profitably given favourable tariff treatment, and if some of the import penetration comes at the expense of local industry. (Note that it is possible that only the market shares of current exporters to Vietnam are reduced and the local price does not change much, or pure trade diversion. While this lowers welfare in Vietnam as tariff revenue is converted into foreign exporter profits, it will not be disruptive to the domestic industry.)

Using the data in Table A5.2 and Table A5.2supplement, FTA partner products with the most potential to increase market penetration in Vietnam are shown in Table 5.10 (Appendix)..

Many of the products listed are manufactured goods from China and Korea, ranging from air conditioners to electronics. Not surprisingly, vehicles and parts are listed. Also, some of the products listed, like fabrics, are inputs and already receive preferential treatment through duty drawback if the

final product is exported. So import levels would not be expected to change much for such products. There is also some fresh produce, like apples from New Zealand. Interestingly, processed cashews, while a valuable export of Vietnam, are also imported raw from India.

### 5.2.3 Dynamic considerations and trends in Vietnam's competitiveness

This sub-section provides a brief analysis of the time series pattern of Vietnam's trade indicators. As indicated above, this analysis is complementary to the extent that it helps identify Vietnam's trade performance over time. And, it serves as a check on the robustness of our earlier conclusions over time and using production based data. Of course, there are the usual qualifications to the analysis. For example, this approach still bears the weakness of relying purely on trade data. That is, it only seeks to identify sectors of trade in which Vietnam has improved or has not improved significantly. Also, this partial equilibrium approach fails to allow for a more in-depth analysis of the underlying causes of change, such as the shifts in labour and capital structures across sectors, changes in productivity, macroeconomic policy, and so on. This should be borne in mind when interpreting the trade indicators' variations over time. The tables in this section are label with a "D", e.g. Table D1, to denote that they are the "dynamic" analogues of the earlier data analysis.

*RCA*

As tabulated in Table D1, in the years of 2004-2008, Vietnam enjoyed comparative advantage (i.e. RCA>1) mainly in primary, labour- or resource-intensive products. Footwear has remained the sector of Vietnam's largest comparative advantage (relative to the world). Other sectors with significant comparative advantage are: fish, crustaceans, mollusc; coffee, tea, cocoa, spices; articles of apparels and clothing accessories, etc. However, some of these sectors -- including even footwear and rubber -- experienced a decline in their apparent comparative advantage. Some others -- particularly coffee, tea, cocoa, spices, and manufactures thereof; furniture, and parts thereof; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings; and leather, leather manufactures, n.e.s., and dressed furskins – were revealed to be significantly more competitive. Thus, in this sense, Vietnam's export potential for more highly processed goods is emerging. Furthermore, the products with RCA>1 account for the majority of Vietnam's exports, though the share has been decreasing continuously from nearly 81 per cent in 2004 to just over 74 per cent in 2008. This suggests that export activity might be moving out of traditional sectors toward non-traditional export sectors. In order to investigate this movement, we look at exports from non-traditional export sectors, defined as RCA<1.

**Table D1: Export shares of products classified by RCA**

*Unit: Per cent*

| | **2004** | **2005** | **2006** | **2007** | **2008** |
|---|---|---|---|---|---|
| RCA>1 | 80.81 | 80.73 | 78.48 | 76.02 | 74.33 |
| RCA<1 and $RCA_{2008}$>$RCA_{2004}$ | 11.19 | 12.03 | 14.99 | 17.72 | 19.71 |
| RCA<1 and $RCA_{2008}$<$RCA_{2004}$ | 8.00 | 7.24 | 6.53 | 6.26 | 5.96 |

*Source:* Authors' calculations from COMTRADE database.

Even for many sectors where Vietnam had no revealed comparative advantage in the sector overall (i.e. RCA<1), the country has been acquiring greater competitiveness in relative terms. In other words, the calculated RCA indices for these sectors have been increasing over time, which suggests that some products in the sector are emerging as export growth poles. Major products in this group include: office machines and automatic data-processing machines; fertilizers; textile fibres; animal oils and fats, etc. As another positive sign, the share of these products in Vietnam's exports went up from time to time, reaching almost one-fifth in 2008 as compared to just over 11 per cent in 2004. Since the manufacturing content of these products is generally larger than those where Vietnam has been enjoying comparative advantage, the improvement indicates a positive shift of the country's export structure toward manufacturing products. That is, despite the prevalent lack of comparative advantage across a range of sectors, the advantage has nonetheless been strengthening over time, contemporaneously with the implementation of various FTAs under the ASEAN framework and WTO accession. In this respect, the FTAs and WTO accession have been jointly beneficial.

*Trade Complementarity*

**Table D2** depicts how well Vietnam's export structure matches the import structures of various FTA partners in East Asia. In other words, the numbers in **Table D2** indicate to what extent Vietnam's exports complement the import needs of these partners. The degree of complementarity was the smallest in the case of China, whilst being largest in the case of Japan. In general, however, the degree of complementarity of Vietnam's exports to imports of all those partners has been improving from one year to the next. In particular, the pace of improvement was the fastest in the case of China, and rather slower in the case of Korea. Thus, although there persist concerns about Vietnam's capability to penetrate China's market, in fact Vietnam has been making progress in supplying products relevant to the import demands of China.

**Table D2: Trade complementarity of Vietnam's exports to some FTA partners**

| | 2004 | 2005 | 2006 | 2007 | 2008 |
|---|---|---|---|---|---|
| with ASEAN | 36.507 | 39.507 | 42.342 | 44.170 | 46.824 |
| with China | 29.642 | 30.891 | 34.178 | 35.589 | 41.536 |
| with Korea | 43.659 | 46.464 | 47.939 | 46.562 | 47.407 |
| with Japan | 51.260 | 54.103 | 56.639 | 55.599 | 56.683 |

*Source:* Authors' calculations from COMTRADE database.

In the reverse direction, one can analyze the extent to which exports of some FTA partners in East Asia have been complementary to Vietnam's import needs. As can be seen from

**Table D3**, the degree of complementarity of all these partners' exports has been improving continuously in the period 2004-2008. However, there were changes in the rankings of such complementarities. Specifically, that of Japan was the largest in 2004, while that of Korea was the largest in 2008. Notably, ASEAN's export performance has improved significantly in terms of complementarity to Vietnam's import demand. Overall, all the FTA partners in East Asia appear to have experienced increasingly complementary trade with Vietnam.

**Table D3: Trade complementarity of some FTA partners' exports to Vietnam**

| | 2004 | 2005 | 2006 | 2007 | 2008 |
|---|---|---|---|---|---|
| ASEAN | 47.775 | 50.162 | 52.420 | 53.681 | 57.332 |
| China | 39.634 | 40.504 | 41.903 | 43.576 | 44.690 |
| Korea | 55.230 | 53.967 | 52.819 | 55.348 | 59.390 |
| Japan | 48.212 | 48.652 | 49.042 | 53.290 | 54.867 |

*Source:* Authors' calculations from COMTRADE database.

*Trade Intensity*

**Table D4** describes the trade intensity indices of Vietnam's exports in some East Asian partners. As discussed previously, the trade intensity index (TII) measures whether the value of trade between two countries is larger or smaller than expected based on their importance in global trade. Therefore, the export value of Vietnam to ASEAN is significantly larger than expected, which highlights the importance of the latter as a favourable trade partner of the former. Japan is also an attractive FTA partner with Vietnam, as reflected by the TII fluctuating in the range of 2.6-2.8 over the period of 2004-2008. The attractiveness of Korea and China in FTAs appears to vary in different direction. Korea became increasingly more favourable, particularly after the AKFTA in 2006, with the corresponding TII exceeding unity in 2007 and 2008. Exports of Vietnam to China, meanwhile, were larger than expected in 2004-2005, whilst being smaller than expected in 2006-2008. This indicates that Vietnam may reap decreasing benefits from her exports to China.

**Table D4: Trade intensity of Vietnam's exports in some FTA partners**

| | 2004 | 2005 | 2006 | 2007 | 2008 |
|---|---|---|---|---|---|
| with ASEAN | 2.387 | 2.780 | 2.573 | 2.747 | 2.527 |
| with China | 1.432 | 1.160 | 0.892 | 0.892 | 0.891 |
| with Korea | 0.967 | 0.791 | 0.844 | 1.029 | 1.094 |
| with Japan | 2.741 | 2.647 | 2.621 | 2.628 | 2.812 |

*Source:* Authors' calculations from COMTRADE database.

A similar analysis can also be done with exports of some East Asian partners to Vietnam. The corresponding TIIs are tabulated in Table D5. Apparently, exports of all these partners to Vietnam have been larger than expected. As a reflection, Vietnam is an attractive destination for their exports, and the degree of attractiveness has been increasing throughout the years of 2004-2008. The country is most attractive to ASEAN's exports, with the TII increasing from almost 4.1 in 2004 to nearly 4.7 in 2006, before decreasing to just over 4.2 in 2008. Similarly, China and Japan saw Vietnam as an increasingly favourable export destination, as the respective TIIs increased almost continuously over the period 2004-2008. Korea also found significant potential for export to Vietnam, though the TII fell

from around 3.8 to nearly 3.5 in the same period. Notably, except for Japan, the TIIs of these partners' exports to Vietnam have been larger than those of export flows in the opposite direction. In terms of trade intensity, thus, Japan is the most attractive FTA partner for Vietnam. Meanwhile, considering the trade intensity patterns, the benefits to Vietnam from an FTA with China seems to be quickly diminishing.

**Table D5: Trade intensity of some FTA partners' export in Vietnam**

| | 2004 | 2005 | 2006 | 2007 | 2008 |
|---|---|---|---|---|---|
| with ASEAN | 4.086 | 4.242 | 4.669 | 4.375 | 4.219 |
| with China | 1.588 | 1.608 | 1.564 | 1.853 | 1.805 |
| with Korea | 3.788 | 3.530 | 3.107 | 3.157 | 3.460 |
| with Japan | 1.758 | 1.867 | 1.884 | 1.869 | 2.020 |

*Source:* Authors' calculations from COMTRADE database.

*Export Similarity*

**Table D6** depicts the similarity in export structures of Vietnam and several FTA partners. As can be seen, Vietnam's export structure has been remarkably close to that of ASEAN, and the extent of similarity has been increasing continuously from over 39 to above one-half in the period 2004-2008. With other partners, Vietnam's export structure has been less similar, with the extent of similarity being more significant in China and less significant in Japan. Nevertheless, the degree of Vietnam's export similarity with all these partners has been increasing over time. This can perhaps be explained by the tendency of firms in China, Korea, and Japan to relocate their factories/assembly to Vietnam for export-oriented production.

**Table D6: Export similarity of Vietnam with several FTA partners**

| | 2004 | 2005 | 2006 | 2007 | 2008 |
|---|---|---|---|---|---|
| with ASEAN | 39.323 | 40.597 | 43.662 | 45.391 | 50.003 |
| with China | 41.783 | 41.508 | 42.093 | 43.495 | 44.595 |
| with Korea | 25.296 | 25.526 | 28.404 | 30.488 | 34.641 |
| with Japan | 19.910 | 20.625 | 23.023 | 25.154 | 27.807 |

*Source:* Authors' calculations from COMTRADE database.

## 5.3 The tariff revenue approach

Another useful approach aimed to identify sectors which may be more or less beneficially impacted by a particular FTA is the so-called Tariff Revenue Approach. The basic idea behind this approach is that products which confront high trade barriers in a particular country's market, but are already being exported into that market nonetheless, are likely to benefit immensely from an FTA. These are

products that trade negotiators would want to insist have market access and not be excluded from tariff preferences. Alternatively, some products may confront relatively low trade barriers in a market but already have attained significant market penetration. These are products which are likely to have already achieved market competitiveness – maybe a trusted brand or reliable product – and so a reduction in even a low tariff would go directly to profits and result in increased exports to the market. Again, trade negotiators would want to ensure that such products receive even lower protection with any FTA. Finally, there may be products which not only confront high tariffs but which have nonetheless already achieved substantial market penetration in a country. These would be priority products for the trade negotiator's attention.

An obvious way to identify which export sectors might be most favourably impacted by any FTA, therefore, is simply to calculate the sector trade flows multiplied by the height of the tariff in that sector. Then the sectors can be ranked from highest (most potential for FTA gain) to lowest (least potential for FTA gain). A strength of this approach is that it takes explicit account of the tariff structure confronting Vietnam exporters for each potential FTA partner separately. Note that the measure only isolates the potential for gain from an FTA and does not indicate that a sector is unimportant just because it has a low rank. It could happen, for example, that a very dynamic export sector already confronts zero tariffs in a market, and so would be ranked low only in terms of potential future growth on account of the FTA alone.

In what follows, we first use this methodology to identify potential high impact sectors and then disaggregate the trade flow data to match tariff barriers more closely with products within sectors. We address for Vietnam both potential export opportunities and import challenges. The analysis is arranged along lines of the ASEAN FTAs.

*Export Opportunities*

Tables A5.8 – A5.17 in the Appendix report on the results of this approach for a variety of FTA partners. The early tables report on sectoral export potential for Vietnam by market and the later tables on sectoral adjustment challenges posed by partner exports to Vietnam. For example, Table A5.8 refers to Vietnam's exports to India and reports by product on India's imports from Vietnam, India's tariff applied to these imports, and tariff revenue collected by sector. The sectors are then ranked from largest to smallest tariff revenue.

In the discussion below, we couch the analysis in terms of the four new ASEAN FTAs. Each of the tables contains information by sector on total imports from Vietnam, tariff revenue, the average tariff confronting Vietnam (a measure of the potential tariff preference with the FTA), and the HS code and product description. The sectors are ranked by tariff revenue (column 2 of the Tables A5.8 – A5.17) for reasons explained above.

***AIFTA – Exports to India***

Consider first Table 5.11 (Appendix; Based on A5.8) and the impending AIFTA being negotiated by ASEAN countries with India. Table 5.11 indicates several sectors of potential interest to trade negotiators. These are the sectors which appear at the top of the list either because exports to India are already large, Indian tariffs on Vietnam's product are high, or both. The height of the tariff measures the potential tariff preference and so when multiplied by the level of imports produces a proxy for sectors which will benefit most from the FTA (column 2). In the case of the AIFTA these sectors include:

Of course, the data are reported here at the 2-digit level and so aggregation of products in the sector may conceal which more narrowly defined products are most likely to benefit from the FTA. So, in Table A5.1supplement we arrange the data by ASEAN trade agreement and disaggregate the data down to the 6-digit level for some of the sectors of interest. Here we provide a summary discussion.

HS 09 (Coffee, tea, matï and spices) to India

Despite very high average tariffs, Vietnam exports over US$35 million of sector HS 09 products (coffee, tea, matï and spices) to India. In order to investigate whether the tariffs are an impediment on an important sector, some sector disaggregation is necessary. Using UN TRAINS (2010), it happens that tariffs on the products of interest to Vietnam are very high indeed: 100 per cent for coffee, 70 per cent for peppers, and 30 per cent for other spices of interest. Tariffs are also 100 per cent for tea imported from Vietnam. We conclude that Vietnam could benefit immensely from reduced tariffs afforded by the AIFTA. But it would be essential to make sure these products are not exempted by India in the trade negotiations.

HS 40 (Rubber and articles thereof) to India

Another product of interest for Vietnam in the AIFTA is rubber. Vietnam currently exports almost US$1 billion to India and the main product, upon disaggregation, is HS 4001 (natural rubber, balata, gutta-percha etc). Using the UN TRAINS data base, it turns out that the tariff in India on this product is 36.67 per cent. Clearly this would be a product that could benefit from preferential access with an FTA.

Other products which would appear to benefit substantially from the AIFTA are listed in the ancillary Table 5.11a (Appendix) along with the applied MFN tariff.

Also of interest is HS 100630 (Rice, semi-milled or wholly milled, whether or not polished or glazed) which confronts a tariff currently of 70 per cent.

In what follows, we report on similar calculations for Korea, China, Australia, and New Zealand. While the results are consistent with the CGE model above, the level of disaggregation provides a sense of just which products within sectors will be most affected by the ASEAN FTAs. Also, note that while an aggregate sector's output may not change much, it is still possible that products within that sector are affected considerably. The associated Tables appear in the Appendix to Chapter 5.

***AKFTA – Exports to Korea***

In the case of Korea, there are a number of products of interest to Vietnam. These include many articles of apparel and footwear listed in Table A1supplement. Also, of extreme interest would be the products listed in Table 5.12a (Appendix).

***ACFTA – Exports to China***

Four sectors which should especially benefit from the ACFTA are fruits and nuts, footwear, rice, and rubber. Exports are already large and tariffs without the ACFTA would be 17.68 per cent, 18.15 per cent, 65 per cent, and 11.35 per cent, respectively. These are substantial preference margins.

More specifically, using Table A5.1supplement, the products of most interest are HS 100630 (Rice, semi-milled or wholly milled, whether or not polished or glazed) which is the main export in the sector, and 400129 (Natural rubber in other forms nes) which confronts a 20 per cent duty. Also of interest is HS 844359 (Printing machinery nes) which carries a duty of 12.95 per cent without ACFTA preference.

***AANZFTA – Exports to Australia and New Zealand***

Products of special interest that could gain from the AANZ FTA are listed in Table5.14a (Appendix).

*Summary*

As can be seen from the tables, Vietnam's potential exports to the various FTA partners are broadly similar but far from the same across partners. For example, footwear, furniture, and garments would benefit much from an FTA with New Zealand, whereas an FTA with Korea would most favour Vietnam's exports of vegetables, coffee and tea, and aquaculture products.

In Table A5.1, the sectors are disaggregated further into more narrowly defined products. In Table A5.1supplement, the product groups are still further disaggregated and matched with FTA partners. So, for example, in trade with Korea we find that Vietnam has export potential in the sector HS 16 (Preparations of meat, fish or crustaceans, molluscs etc). But which products are these and what barriers do they confront? The answer is reported from Table A1 to be HS 1605 (Crustaceans & molluscs, prepared/preserved) and HS 1604 (Prepared/preserved fish & caviar). Then, from Table A1supplement we find still more specific information as reported below in Table 5.15.

**Table 5.15 Sectors of interest in Korea FTA**

| | Vietnam Exports to Korea | Value in 2008, ($'000) | Annual growth in value between 2004-2008, %, p.a. | Share in VN exports (%) | Equivalent ad valorem tariff applied by Republic of Korea to Vietnam |
|---|---|---|---|---|---|
| 160520 | Shrimps and prawns, prepared or preserved | 17,431 | 176 | 6.51 | 14.8 |
| 160590 | Molluscs and other aquatic invertebrates | 2,636 | -13 | 4.14 | 14.2 |

| | | | | | |
|---|---|---|---|---|---|
| | prepared or preserved | | | | |
| 160510 | Crab, prepared or preserved | 60 | 61 | 0.07 | 13 |
| 160540 | Crustaceans nes, prepared or preserved | 0 | | 0 | 13 |

In this case, Vietnam is exporting shrimp successfully to Korea despite confronting a high 14.8 per cent import duty. If the AKFTA results in the removal of this duty, gains to Vietnam's exporters could be substantial.

Several important insights emerge from this approach in terms of both products and markets. First, for Vietnam, certain export sectors are broadly competitive while others are competitive only in certain potential export markets. For example, coffee is an important export for Vietnam and could benefit from the removal of tariffs in trade with India, but not in trade with Australia.

Further disaggregation of the data reveals that among the apparently most competitive export sectors, specific products of particular interest include a wide range of seafood product, wearing apparel, footwear, and even furniture for some markets. There are also several more manufactured products as well, including certain electrical machinery.

*Import Challenges*

Similar calculations can be made using Vietnam's tariff structure and the exports of potential trading partners in order to reveal where import penetration is likely to be highest in Vietnam. When ASEAN and so Vietnam enters into an FTA, Vietnam will be affording tariff preferences to the new partner. If there is only trade diversion to the new partner, then the tariff revenue will be lost but price will not change much. Column 2 reports on the magnitude of the tariff revenue loss owing to the FTA for each sector. If furthermore there is trade created by the FTA, then the highest ranked sectors are the ones likely to see import penetration rise the most. These results are reported in Tables A.13 – A.17 in the Appendix. The more disaggregated analysis is found in Tables A2 and A2supplement. Here, in Tables 5.16 – 5.20 (Appendix) we summarize the implications.

Interestingly, Vietnam, with its strong comparative advantage in cashew nuts, currently imports cashew nuts from India.

For Korea, there is a wide variety of manufactured imports especially.

When disaggregated, China's exports would include a wide variety of products, especially manufactured goods and electronics like stereo equipment, radios, and so on.

## 5.4 SMART simulations

While the indicators and measures discussed above are rooted in economic theory and common sense, there is no pretence of formal economic modelling. The CGE and Gravity Model analysis presented above address this deficiency. However, these models, while logically precise, are limited in the extent of their data disaggregation. Thus, conclusions emerge which are correct but may hide sectoral detail. As a compromise between the two approaches, it is sometimes useful to appeal to a Computable Partial Equilibrium (CPE) model. (See, for example, Hufbauer and Elliot, 1994;

Zazanami, Shujiro, and Kawai, 1995; Zhang, Zhang, and Wan, 1996; USITC, 2005.) Such models assume that a market can be analyzed in isolation from other markets, ignoring spillover effects due to changes in economy-wide incomes and factor prices. Thus, markets may be analyzed at a highly disaggregated level. Here we will employ such an approach as a kind of check on our earlier results.

There are a number of CPE modelling techniques (Blonigen and Prusa, 2001). We will use the so-called SMART model developed by Laird and Yeats (1986). In this model, similar products of nations are assumed to be imperfect substitutes – e.g., different varieties of motorbikes or qualities of vegetables. Domestic prices are taken to be determined by supply and demand but influenced by the availability of imported substitutes. The SMART model allows the researcher to parameterize the sensitivity of demand and supply to price changes (elasticities), as well as the substitutability of domestic varieties and foreign varieties of a product (the elasticity of product substitution). We then perform a number of counterfactual experiments aimed to suggest the impact of an FTA on trade flows.

Our use here of SMART is a bit bold. The simulation is best suited for removing only a single tariff or multiple tariffs in very unrelated markets. This maintains the credibility of the result in the partial equilibrium paradigm wherein spillover effects and market interactions can be safely assumed to be minimal. In the simulations here, we let the entire tariff structure change radically, and so certainly violate the assumption that most of the economy can be ignored. However, the exercise has some use as a first pass look at which sectors might benefit most from each FTA relative to other sectors. It is really the absolute magnitudes of the changes that lack precision.

Specifically, using data from the UN Comtrade and TRAINS data bases, we calculate the implied changes in trade flows induced by a partner country allowing duty free imports from ASEAN countries. We also investigate the impact of Vietnam allowing duty free preferential market access into Vietnam from potential FTA partners. We reiterate our warnings that specific numbers will be imprecise. Tables 5.21 to 5.30 report on some of the results and are based on Tables A5.21 – A5.30 in the Appendix.

As with our earlier results, impacts vary by product and by market. Nonetheless, some similar and consistent themes emerge.

*Export opportunities*

***AIFTA – Exports to India***

Table 5.21 (Appendix) reports simulation results and is arranged in order of largest to smallest change in exports from Vietnam to India. So, for example, exports from Vietnam to India are shown to go up in total by over US$388 million per annum. (We reiterate our cautionary note that this is only a suggestive number and lacks precision.) The largest export increase is in roasted coffee, with exports increasing by almost US$93 million per annum. Although this number lacks precision, it is intuitively plausible that the number should be large. From Sections 3.2 and 3.3 we know that Vietnam is a competitive exporter of coffee and already exports to India despite confronting a 100 per cent import tariff. Giving Vietnam a 100 per cent tariff preference in the Indian market, though unlikely, would surely lead to substantial increases in Vietnam's coffee exports. Of course, other ASEAN members in the AIFTA that are competitive coffee exporters, like Indonesia, would also benefit from the tariff preferences and so temper Vietnam's gains somewhat. (The simulation takes this effect into account.) Below we list the calculated largest export increases. Note that the magnitude of the absolute quantity

increase is dependent on both the initial level of exports and the initial height of the Indian import tariff.

A similar interpretation can be given to the results for Korea, China, and Australia-New Zealand. These data are found in the following tables:

***AKFTA – Exports to Korea***

Table 5.22 (Appendix)

***ACFTA – Exports to China***

Table 5.23 (Appendix)

***AANZFTA – Exports to Australia and New Zealand***

Tables 5.24 – 5.25 (Appendix)

*Import Challenges*

Analogously, we can simulate a widespread reduction in Vietnam's tariffs to particular partners. Thus, we perform the experiment of allowing Vietnam to reduce its import duties to zero for each of the FTA trading partners. We do this for each partner in order and do not perform the experiment of reducing tariffs to zero for all FTA partners simultaneously. The results appear in Tables 5.26 to 29 (Appendix).

## 5.5 Sectors of particular interest

### 5.5.1 Identifying sectors

Various branches of the Government of Vietnam (Ministry of Industry and Trade, Central Statistical Office, *et al*) have identified industries of particular interest or concern in light of the continuing pursuit of FTAs. Additionally, the formal quantitative analysis above (CGE) identifies many of the same industries as particularly impacted by some of the FTAs, as does this chapter's partial equilibrium analysis and summary indicators. In this section, we elaborate on some of these impacts based on very disaggregated industry detail, industry trends, and a range of interviews/surveys with the business community and other key stakeholders.

The sectors identified for this study include footwear, leather, aquaculture, vegetables and fruits, electronics, autos, furniture and wood products, rubber, garments and textiles, paper and pulp, and coffee. With all of these sectors the issues are two-fold. First, will the sector benefit (or be challenged) ***potentially*** by increased market access afforded by an FTA. That is, will a preference advantage emerge? Second, will the sector be able to take advantage of preferential access by increasing output and market share. This is a question of supply response potential. That is, can any comparative advantage be turned into a competitive advantage in reality? Or, in the case of increased import competition, can challenged sectors adjust rationally?

We divide the issues into common themes confronting the Vietnam business community – "cross-cutting issues" – and issues more specific to particular industries – "specific sector issues."

### 5.5.2 Cross-cutting issues

All of the focus sectors addressed here have at least some opportunities and challenges in common. In this section we address these issues that cut across many industries in Vietnam. Many of these issues are domestic in origin, but directly impact the ability of firms or new entrepreneurs to exploit the opportunities afforded by FTAs or to deal with adjustment costs imposed by the FTA over time. The main issues deal with access to finance, labour adjustment and training, regulatory requirements or hindrances, and non-tariff barriers (NTB).

*Access to Finance*

Businesses typically operate with borrowed capital, and Vietnam is no exception. For example, in the Vietnamese paper industry about 70 per cent of the variable cost of operation is borrowed and then paid back out of revenues generated by the production run. Also, for industries like paper, rubber, garments, and so on, machinery acquisition needs to be financed as the capital equipment is expensive but generates output well into the future. In almost every sector where we interviewed stakeholders, access to finance was a problem for the private firms. To the extent that capital is scarce, it represents an important constraint on exporting.

For some industries, the problem was geographically concentrated. For example, finance was no problem for smallholder rubber producers in the South, but it was a problem in the North. In some industries, firms complained about easy access to finance for SOEs which made it harder for private firms to compete.

*Labour Adjustment and Training*

Labour is still relatively cheap in Vietnam and this represents an important source of comparative advantage and an attractive inducement to foreign investors. Still, labour availability, especially skilled labour, was cited as becoming a constraint on production.

*Regulatory Requirements and Hindrances*

Infrastructure was cited by some firms as a hindrance to export. Seaports charges were three times higher than is common in the region, according to one business group. Also, a representative of a wood export company in HCM City reported that a shortage of containers has led to late export deliveries to partners overseas, leading to financial losses for local companies.

Other hindrances included that customs clearance was arbitrary and overaggressive, that starting a business is difficult and takes too long for approval, and generally planning is made difficult by unpredictable government policy regarding trade and taxes.

*Non-Tariff Barriers*

Traceability and SPS issues represent a challenge for many exporters, especially in the furniture and food related sectors. The seafood sector continues to confront US anti-dumping action concerning pangasius. Traceability has become an issue for exports to Europe and the US in the furniture sector where forest products and chemicals are involved.

### 5.5.3 Specific sectors issues: Opportunities and challenges

In this section we delve into ten specific sectors which are of particular economic or social importance in Vietnam and investigate their exposure to the impacts of the FTAs being implemented or negotiated. This can also serve as some guidance for consideration in negotiating future trade agreements or partnerships. The analysis is organized for each sector as follows:

*Background and Trends: The Condition of the Industry*

*The Business Model and Role of International Trade*

*FTA Considerations*

*i) Preference Potential*

*ii) Supply Response Potential*

*Challenges and Opportunities*

The data and analysis draw on primary data, secondary sources, government documents, and numerous interviews with stakeholders, especially the business associations listed in the Appendix. Also, more empirical detail on each sector can be found in Tables A1, A1supplement, A2, and A2supplement.

**1. Footwear and Leather**

*Background and Trends: The Condition of the Industry*

The Leather and Footwear industry in Vietnam is important and dynamic. The footwear industry in Vietnam consists of about 550 firms (six state-owned in 2008), with 900 completed production lines, capable of producing 780 million pairs of shoes per year. Sport and canvas shoes represent about 70 per cent of industry output, with shoes of leather, particularly ladies' shoes, comprising most of the rest. Some of these enterprises are also engaged in tanning, leather goods, and shoe materials production. Employment is nearly 1 million in the industry and there is additional production and employment in a number of small workshops and family operations. The industry is very labour intensive and entails a certain level of training for most workers. Geographically, about 75 per cent of the enterprises are around HCM City, 20 per cent are around Ha Noi, and fewer than 5 per cent are in between, mostly around Da Nang (LEFASO, 2009).

Globally, the footwear industry has successfully penetrated markets around the world, but especially in Europe. Overall, exports have been growing at 13.3 per cent a year over the last three years and annual exports in 2009 exceeded US$5 billion. Specifically, EU countries account for 53 per cent and the USA about 20 per cent of Vietnam's footwear exports. Tariff and non-tariff barriers, discussed below, represent an important constraint on continued exports, especially for leather shoes to the EU.

**Trends and competitiveness - Footwear**

| | |
|---|---|
| Value of exports (in thousand US$) | 5,872,492 |
| Growth of exports in value (% p.a.) (2003-2007) | 50% |
| Share in national exports (%) | 10% |

| | |
|---|---|
| Share in national imports (%) | 0% |
| **Trends... (continued)** | |
| Relative Trade Balance (%) | 93% |
| Relative unit value (World average = 1) | 1.1 |
| Net exports (in thousand US$) | 5,672,925 |
| Per capita exports (US$ per inhabitant) | 68 |
| Share in World market (%) | 7.84% |

Source: ITC Trademap 2010

**Trends and competitiveness - Leather products**

| | |
|---|---|
| Value of exports (in thousand US$) | 7,964,525 |
| Export growth in value, p.a. (%) | 27% |
| Share in national exports (%) | 13% |
| Share in national imports (%) | 1% |
| Relative trade balance (%) | 78% |
| Relative unit value (world average = 1) | 1.2 |
| Net exports (in thousand US$) | 6,977,190 |
| Per capita exports US$/inhabitant) | 92.4 |
| Share in world market (%) | 5.63% |

*The Business Model and Role of International Trade*

The business model for the export sector tends to revolve around partnerships with multinational enterprises such as Nike, Adidas, and Reebok, along with others from many places (EU, USA, Korea, Hong Kong, Singapore, *et al*). Nike represents about 25-30 per cent of the foreign investment.

Most of the basic inputs and all of the machinery are imported. Value added in Vietnam is about 30 per cent for ladies shoes (up from 20 per cent in the past) and 60 per cent for sports shoes, although it is as high as 80-90 per cent in some production lines. Capital's share is only about 5-7 per cent. Leather imports represent about 400-500 million square feet and come from China, Korea, Brazil, Italy, India, and other places. The leather import tariff is not a problem (about 5 per cent) and is

avoided by the export sector through duty drawback. Leather supply has become tight, however, and the unevenness of supply represents a bit of a problem. There is also some domestic Vietnamese supply of about 200 million square feet.

Commonly the foreign business partner coordinates procurement of inputs and even export logistics. Foreign investors also typically cooperate with local enterprises to train workers, set up centres for leather and footwear services, address waste treatment system issues for tannery and footwear production, and so on. The industry encourages such cooperation and the trade association LEFASO is constantly promoting Vietnam as an investment partner.

*FTA Considerations*

In terms of potential FTA impact, the footwear sector is naturally one of Vietnam's most important industries. While awareness of any FTA advantage is muted, there is at least a general awareness. But exporters already have access to duty drawback for imported inputs (discussed below) and in export markets the foreign partner typically handles the paperwork and distribution. Vietnamese producers operate by seeking out partners and production contracts. Thus, there is a certain detachment from the foreign market conditions and any concessions or tariff preferences would be articulated by Vietnamese producers not in terms of the FTA tariffs, but rather in terms of the ease or difficulty in finding partners in particular markets.

The two most important issues here are: i) Which potential FTA markets currently have high barriers to Vietnam footwear exports, and ii) If preferential access is gained, can the industry take advantage of the opportunity. We focus here on the nascent FTAs of ASEAN with China, Korea, India, and Australia-New Zealand. (We discuss the EU as a potential FTA separately.)

*i) Preference Potential*

Table 5.30 summarizes the tariff barriers confronting footwear exports for Vietnam to the FTA partners addressed in this study. The data are reported at the 2-digit HS level (HS 64 Footwear, gaiters and the like; parts of such articles) and include information on tariff dispersion and peaks.

Tariff peaks are defined as tariff line aberrations within the sector. Specifically, International Tariff Peaks reported below are the percentage of tariff lines in a country that have a bound tariff rate of more than 15 per cent. For instance, in China 20 per cent of the total tariff lines have bound tariff rates that exceed 15 per cent. National or Domestic Tariff Peaks are the percentage of tariff lines in a country that have bound tariff rates at least three times higher than the country's average tariff. For example, New Zealand has domestic peaks in 40 per cent of its tariff lines in the footwear sector.

More detailed data on products in the sector can be found in Table A1 and A1supplement.

**Table 5.30: Tariffs confronting VN footwear exports without FTA preference**

| Country | Simple Average | Weighted Average | Standard Deviation | Minimum Rate | Maximum Rate | Nbr of: Total | Domestic | International | Imports Value ($'000) |
|---|---|---|---|---|---|---|---|---|---|
| **Australia** | 7.32 | 8.20 | 4.25 | 0.00 | 10.00 | 30 | 0 | 0 | 55,173.121 |
| **China** | 18.15 | 16.61 | 6.11 | 10.00 | 24.00 | 31 | 0 | 20 | 138,727.100 |
| **Korea** | 12.09 | 12.99 | 2.08 | 8.00 | 13.00 | 54 | 0 | 0 | 127,471.095 |
| **India** | 10.00 | 10.00 | 0.00 | 10.00 | 10.00 | 31 | 0 | 0 | 8,306.021 |
| **New Zealand** | 5.92 | 7.28 | 4.75 | 0.00 | 10.00 | 65 | 40 | 0 | 12,858.630 |

(Source: WITS_TRAINS 2010)

While Vietnam's exporters confront tariffs in these markets on the order of 10 per cent, the range is from 0 to 24 per cent depending on the market. Also, the 2-digit level of aggregation conceals the rates on over thirty more narrowly defined footwear products which may or may not be of interest to Vietnamese exporters. For more disaggregation see Table A1supplement.

In sum, the potential tariff preference margins are significant and, although these markets pale relative to the EU and USA, full liberalization in the FTA markets studied here should be a negotiation priority.

*ii) Supply Response Potential*

The tariff preferences that could be afforded Vietnam's footwear industry appear to be significant if not overwhelming at around 7 to 10 per cent. Nonetheless, even a seven per cent additional profit margin on gross export values is more than enough to engender a significant supply response. For example, if the export supply elasticity were unity, then exports would increase by seven per cent (or about US$23,977,518) and so approximately would output and employment in the Vietnamese footwear sector.

The footwear industry's ability to take advantage of increased market access is mixed. On the one hand, the industry has proven its ability to compete globally. (Only in Japan has output quality represented an impediment to Vietnam's footwear exports.) And, the Vietnam Leather and Footwear Association (LEFASO) has articulated clear goals and a strategy for moving forward. As a general rule, the WTO and FTA commitments are viewed quite positively. The industry, through its Trade Association LEFASO, actively pursues foreign investment and partnerships, and promotes trade cooperation through study tours, market surveys, and so on. There is also an active program for training human resources for production and management, and to constantly monitor global developments in terms of technology and standards.

Future goals of the industry include continued growth of exports, increased focus on the domestic market, creation of more jobs, and enhanced competitiveness. Projections for 2015 include production of 950 million pairs of shoes, 130.7 million products of leather goods, bags and handbags, and 220 million square feet of finished leather. Exports are projected to be US$9,700 million in 2015 and

US$13,593 million by 2020. If these projections are correct, employment in the sector could rise by nearly 100,000 workers by 2015 and by another 200,000 workers by 2020.

Yet, there are some constraints and challenges as well. Externally, the primary impediments to export penetration are anti-dumping (AD) and technical barriers to trade (TBT) complaints, especially in Europe. The complaints date back at least to 2005 and mainly concern leather uppers and cite particularly, beyond raw cost and price data, accounting principles, non-market economy distortions (e.g. land use rights),bankruptcy and property laws. China is becoming increasingly competitive in the market, but it too is confronted with numerous trade complaints. Sports shoes, however, have had no problem and, where questions arise, the foreign partners typically solve them immediately. Rules of Origin (ROO) have represented few problems.

Additionally, unstable leather input supply is a constraint. And, of course, the global market has become extremely competitive, especially from the Chinese producers.

Internally, many of the cross-cutting domestic issues discussed above confront the footwear industry. Labour costs are cited as a common problem and, since footwear is very labour intensive, this represents a significant cost challenge in the competitive global market. The workers are good and the quality of work is high, but the labour supply has become uneven. The labour market is characterized as tight, with good workers being difficult to retain. Also, although production fluctuates, wages and social insurance payments need to be made in order to retain a workforce.

The industry has concentrated mainly in the south of Vietnam, it was reported, because the business climate is better and transport is more accessible. Nonetheless, labour markets are viewed as tight there as well.

*Challenges and Opportunities*

Problems cited by the industry include rising wages and prices of imported leather. However, more attention is now being paid to the domestic market as an opportunity. Vietnamese consumers buy around 130 million pairs of shoes annually.

## 2. Textiles and Garments

*Background and Trends: The Condition of the Industry*

Vietnam's textile and garment (apparel) industry is large and dynamic. It consist of about 2500 enterprises, mostly small and medium sized (SME), employing 2 million workers. Currently, the industry produces a wide range of products at all stages in the value chain: cotton fibre (7,000 tons), synthetic fibre (180,000 tons), spun yarn (480,000 tons), woven fabric (1 million square meters), knit fabric (200,000 tons), printing, weaving and finishing (700 million square meters), and garments (2.4 billion product items). About 58 per cent of the enterprises are in the Southeast, 27 per cent in the Red River Delta, and 7 per cent in the Central Coastal Area.

The domestic market is about US$2 billion and seen as a future opportunity. In the past, larger firms focused on exports and smaller ones on the domestic market. But this is changing as the larger firms are selling more locally.

Vietnam's accession to the WTO was important to the industry in securing market access. Since then the production capacity, product quality, and level of exports have all increased rapidly. Globally, the industry in 2008 exported US$9.1 billion worth of product, mainly apparel, mostly to the USA (US$5.1 billion), EU (US$1.7 billion), and Japan (US$820 million).

**Trends and competitiveness - Apparel**

| | |
|---|---|
| Value of exports (in thousand US$) | 9,464,757 |
| Export growth in value, p.a. (%) | 22 |
| Share in national exports (%) | 15 |
| Share in national imports (%) | 1 |
| Relative trade balance (%) | 88 |
| Relative unit value (world average = 1) | 0.9 |
| Net exports (in thousand US$) | 8,879,501 |
| Per capita exports US$/inhabitant) | 109.8 |
| Share in world market (%) | 2.70 |

**Trends and competitiveness - Textiles**

| | |
|---|---|
| Value of exports (in thousand US$) | 1,186,647 |
| Export growth in value, p.a. (%) | 17 |
| Share in national exports (%) | 2 |
| Share in national imports (%) | 7 |
| Relative trade balance (%) | -60 |
| Relative unit value (world average = 1) | 1.2 |
| **Trends... (continued)** | |
| Net exports (in thousand US$) | 3,535,589 |
| Per capita exports US$/inhabitant) | 13.8 |
| Share in world market (%) | 0.50 |

Specific products and export destinations within the new ASEAN FTAs are reported in Table A1..

*The Business Model and Role of International Trade*

The global apparel industry is competitive and fluid. Fashion and design are both central and ever-changing. Consequently, many of the most successful enterprises find foreign partners and arrange contracts for particular product runs. Vietnam, in turn, is seen as an attractive source for production given the abundance of low cost labour, political and social stability, and proximity to the main fabric and accessory sources. About 40 per cent of factories are foreign affiliates of Korea, Taiwan, Malaysia, Japan, Hong Kong, the EU, and China. Two-thirds of the production is in the South. SOEs are now only 0.5 per cent of the market.

About 70 per cent of inputs are imported. In 2008, Vietnam imported almost US$5 billion of textile products. Cotton fabric is produced locally, about one million square meters, but the quality is not viewed as sufficiently high to be used in apparel destined for export. The biggest cost is labour.

The industry generally is optimistic and benefits from the continuing relocation of textile and garment production from developed countries – e.g. Taiwan and Korea – to developing ones like Vietnam. Additionally there is increasing demand in Vietnam and the local market is becoming more of a priority. The industry generally aims to diversify products lines and has a continuing commitment to upgrading quality. Also, training more managers, technicians, designers, and skilled workers is a priority.

*FTA Considerations*

The Trade Association (VINATEX) views the FTAs as largely beneficial with Korea and Japan, and would be with the EU and U.S. However, the ACFTA with China might have a negative impact on

the industry. The AIFTA with India is viewed as less important because of distance relative to China and bad transport.

*i) Preference Potential*

**Table 5.31: Tariffs confronting VN apparel exports without FTA preference**

| Country | 62 Art of apparel & clothing access, not knitted/cro | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Simple Average | Weighted Average | Standard Deviation | Minimum Rate | Maximum Rate | Nbr of: Total Lines | Domestic Peaks | International Peaks | Imports Value ($'000) |
| **Korea** | 12.65 | 12.97 | 1.10 | 8.00 | 13.00 | 156 | 0 | 0 | 90,244.824 |
| **China** | 15.91 | 16.84 | 1.28 | 14.00 | 20.00 | 123 | 0 | 95 | 27,785.858 |
| **India** | 10.00 | 10.00 | 0.00 | 10.00 | 10.00 | 37 | 0 | 0 | 696.176 |
| **Australia** | 15.07 | 16.43 | 6.38 | 0.00 | 17.50 | 107 | 80 | 80 | 19,607.997 |
| **New Zealand** | 9.75 | 9.78 | 1.43 | 0.00 | 10.00 | 104 | 98 | 0 | 4,062.011 |

| | 61 Art of apparel & clothing access, knitted or croc | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Simple Average | Weighted Average | Standard Deviation | Minimum Rate | Maximum Rate | Nbr of: Total Lines | Domestic Peaks | International Peaks | Imports Value ($'000) |
| **Korea** | 12.76 | 12.34 | 0.98 | 8.00 | 13.00 | 124 | 0 | 0 | 35,434.507 |
| **China** | 16.19 | 15.42 | 2.22 | 14.00 | 25.00 | 85 | 0 | 57 | 12,679.815 |
| **India** | 10.00 | 10.00 | 0.00 | 10.00 | 10.00 | 39 | 0 | 0 | 596.090 |
| **Australia** | 16.23 | 16.85 | 4.79 | 0.00 | 17.50 | 78 | 68 | 68 | 12,163.922 |
| **New Zealand** | 9.49 | 9.37 | 2.28 | 0.00 | 10.00 | 107 | 94 | 0 | 2,387.698 |

*ii) Supply Response Potential*

The industry is clearly able to respond to increased prices and market access. While labour markets have become tighter, workers are still abundant. However, human resource training in middle and upper management, technology, and fashion design is still weak and this may represent a constraint as skilled labour is becoming increasingly in demand throughout the economy in Vietnam. Also, the trade association VITAS reports that the cost of seaports and transport is high and affects the competitive ability of enterprises (VITAS, 2009).

Nonetheless, VITAS anticipates production growth at 12-14 per cent per year, and export growth at 15 per cent per year. With such growth, employment will grow to 2.75 million workers in 2015 and 3 million by 2020. Key to such growth is continued domestic and foreign investment in the industry, and continued access to relatively cheap labour, along with imported inputs at reasonable prices.

*Challenges and Opportunities*

Four challenges confront the industry. First, there has been an increase lately in some NTBs including regulations governing chemicals and product safety, and import monitoring programs by some developed countries. Second, international competition has been growing from China, India, and Bangladesh, despite increasing labour costs. Third, a labour shortage has led to a 10 per cent decrease in production capability, according to a VITAS spokesman. Finally, imported input costs have been rising.

Nonetheless, the industry appears poised to remain a key to Vietnam's export oriented growth strategy and the new ASEAN FTAs could be an important source of growth given the preference margins potentially available. Quality has been rising continually and the industry is well positioned to compete. Securing market access in the FTAs should be a negotiating priority.

### 3. Seafood and Aquaculture

*Background and Trends: The Condition of the Industry*

The trade association (VASEP) counts 300 members. Seafood production in terms of the catch landing in Vietnam was 2.227 million MT in 2009, an increase of 6.8 per cent over 2008. Highest catches were in the provinces of Kien Giang, Ben Tre, Bac Lieu, Phu Yen, Nam Dinh, and Da Nang. The aquaculture output in 2009 was 2.569 million MT, an increase of 4.9 per cent over 2008 although black tiger shrimp farming area decreased by 66,000 ha. Vietnam produces a wide variety of products including 60 acquatic varieties like shrimp and crab. World demand is generally high and rising, and Vietnamese Pangasius and acquatic varieties are sold globally. Both farms and the processing plants are located in Vietnam.

*The Business Model and Role of International Trade*

The industry consists of three main components in the value chain: Feed and hatcheries, farming and producers, and factories. Along the chain there is certification at various stages. Currently, firms are working to integrate and create linkages between finance, inspection, and certification. The idea is that the final product is monitored from feed to factory. Currently, for example, there are about 300 qualified exporters to Korea. Korea sends inspectors to Vietnam to check on the system. Value added has been increasing in the industry.

Total export of agro-forestry-seafood products was over US$15.2 billion in 2009 of which US$4.3 billion came from seafood, a decrease of 6.91 and 6.73 per cent respectively from 2008. The decline is related to the world recession, but also owes in part to a number of dumping, SPS, and TBT related

issues in certain developed country markets. Nonetheless, this year the seafood industry is expected to export more than 500,000 tonnes of tra catfish and 200,000 tonnes of shrimp with an export value of US$4.5 billion. The biggest markets are the EU, Japan, the U.S., South Korea and China & Hong Kong. Australia is also a significant market among the new ASEAN FTAs.

*FTA Considerations*

*i) Preference Potential*

**Table 5.32: Tariffs confronting VN seafood exports without FTA preference**

| | 03 | Fish & crustacean, mollusc & other aquatic invert | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Country** | **Simple Average** | **Weighted Average** | **Standard Deviation** | **Minimum Rate** | **Maximum Rate** | **Nbr of: Total Lines** | **DomesticPeaks** | **International Peaks** | **Imports Value ($'000)** |
| **Korea** | 15.48 | 16.01 | 6.88 | 0.00 | 53.00 | 156 | 1 | 83 | 249,285.262 |
| **China** | 10.65 | 9.94 | 4.72 | 0.00 | 17.50 | 52 | 0 | 6 | 27,766.870 |
| **India** | 30.00 | 30.00 | 0.00 | 30.00 | 30.00 | 6 | 0 | 6 | 234.002 |
| **Australia** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 29 | 0 | 0 | 84,567.917 |
| **New Zealand** | 0.25 | 0.00 | 1.33 | 0.00 | 5.00 | 13 | 0 | 0 | 5,330.917 |

*ii) Supply Response Potential*

Prices have been flat recently, but the industry is viewed as being able to expand output. Labour markets, especially for skilled workers, are viewed as tight, however. And recently, in the case of seafood processing, high interest rates have prevented borrowing to invest in aquaculture and created a shortage of fish for processing.

*Challenges and Opportunities*

The main challenges that the industry confronts are related dumping, SPS, and TBT complaints. The USA has been especially aggressive where shrimp and catfish are concerned. Recently, Vietnam has launched a trade case against the US and its anti-dumping duties on Vietnamese shrimp ranging up to 26 per cent.

SPS issues concern product safety in regard to antibiotics and other chemicals found in the exported product. This is a problem especially for the big markets of the U.S., EU, and Japan. EU traceability policies have exacerbated these problems. And, of course, U.S. anti-dumping threats remain active.

The industry is aware of these challenges and is seeking to streamline compliance through integration of the value chain and information along the chain.

## 4. Vegetables and Fruit

*Background and Trends: The Condition of the Industry*

Vietnam produces a wide range of agricultural products including rice, coffee, cashew nuts, pepper, tea, and vegetables and fruit. Of these products, vegetables and fruit represent about US$500 million and are expected to be as high as US$700 million in 2010. Many of the producers are small. The Trade Association for small and medium sized firms (VARISME) counts more than 700 members.

*The Business Model and Role of International Trade*

Globally, Vietnam exports the same wide range of products that it produces, mostly to Asia. But the U.S. is increasingly important for coffee, pepper, and pineapple juice. And the EU has emerged as an important market for coffee, honey, and processed fruits and vegetables.

In total, the agricultural sector account for about one-third of export revenues and vegetables and fruit represent about 10 per cent of this. Cashew nuts contribute another 15 per cent. Rice, coffee, and rubber are about 35 per cent, 20 per cent, and 22 per cent respectively. Tea is less than 5 per cent. Machinery tends to be imported from the EU. Partners in foreign markets sometimes provide training for the Vietnamese producers.

*FTA Considerations*

VARISME members are aware of FTA opportunities and generally welcome international trade. The FTAs with China and Korea are seen as very beneficial, while India, Australia, and New Zealand are probably not as important. The EU is an important market and an FTA would be useful. VARISME expressed no fear of import competition.

*i) Preference Potential*

**Table 5.33: Tariffs confronting VN vegetable and fruit exports without FTA preference**

| | 07 | Edible vegetables and certain roots and tubers. | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Country** | **Simple Average** | **Weighted Average** | **Standard Deviation** | **Minimum Rate** | **Maximum Rate** | **Nbr of: Total Lines** | **DomesticPeaks** | **International Peaks** | **Imports Value ($'000)** |
| **Korea** | 125.05 | 640.79 | 270.83 | 0.00 | 887.40 | 61 | 13 | 48 | 38,156.557 |
| **China** | 10.38 | 8.34 | 3.95 | 0.00 | 13.00 | 34 | 0 | 0 | 282,884.590 |
| **India** | 23.75 | 20.21 | 10.00 | 5.00 | 30.00 | 5 | 0 | 4 | 51.731 |
| **Australia** | 3.75 | 3.03 | 2.26 | 0.00 | 5.00 | 14 | 0 | 0 | 518.682 |
| **New Zealand** | 1.79 | 1.52 | 2.38 | 0.00 | 5.00 | 20 | 0 | 0 | 349.944 |

| | 08 | Edible fruit and nuts; peel of citrus fruit or me | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Country** | **Simple Average** | **Weighted Average** | **Standard Deviation** | **Minimum Rate** | **Maximum Rate** | **Nbr of: Total Lines** | **DomesticPeak** | **International Peaks** | **Imports Value ($'000)** |
| **Korea** | 31.31 | 25.01 | 10.28 | 8.00 | 50.00 | 13 | 3 | 11 | 1,675.738 |
| **China** | 17.68 | 16.58 | 7.23 | 0.00 | 30.00 | 27 | 3 | 20 | 301,634.024 |
| **India** | 26.25 | 29.73 | 7.40 | 15.00 | 30.00 | 12 | 0 | 5 | 1,580.619 |
| **Australia** | 0.83 | 0.01 | 1.86 | 0.00 | 5.00 | 12 | 0 | 0 | 70,522.608 |
| **New Zealand** | 0.36 | 0.05 | 2.00 | 0.00 | 5.00 | 10 | 0 | 0 | 8,715.400 |

| | 20 | Prep of vegetable, fruit, nuts or other | | | |
|---|---|---|---|---|---|

| | | parts of | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Simple Average | Weighted Average | Standard Deviation | Minimum Rate | Maximum Rate | Nbr of: Total Lines | DomesticPeak | International Peaks | Imports Value ($'000) |
| **Korea** | 36.03 | 42.53 | 11.85 | 15.00 | 63.90 | 48 | 24 | 47 | 2,804.009 |
| **China** | 21.90 | 16.40 | 7.03 | 5.00 | 30.00 | 44 | 8 | 37 | 985.704 |
| **India** | 30.00 | 30.00 | 0.00 | 30.00 | 30.00 | 20 | 0 | 20 | 80.882 |
| **Australia** | 4.56 | 4.87 | 1.75 | 0.00 | 5.00 | 21 | 0 | 0 | 3,327.171 |
| **New Zealand** | 3.57 | 1.34 | 2.23 | 0.00 | 5.00 | 29 | 0 | 0 | 150.689 |

*ii) Supply Response Potential*

The industry would be able to export more to the new FTA partners if prices in those markets rise on account of favourable tariff preferences. Two constraints are access to finance and retaining good workers as opportunities elsewhere are attracting labour away.

*Challenges and Opportunities*

Generally the industry is confronted with favourable trends and the FTAs represent an important opportunity for increased exports. Still, imports from China provide low cost quality competition in the domestic market. Naturally, health and safety restrictions also represent a challenge to exporters.

**Trends and competitiveness - Fresh food**

| | |
|---|---|
| Value of exports (in thousand US$) | 9,343,837 |
| Export growth in value, p.a. (%) | 15 |
| Share in national exports (%) | 15 |
| Share in national imports (%) | 5 |
| Relative trade balance (%) | 49 |
| Relative unit value (world average = 1) | 1.3 |
| Net exports (in thousand US$) | 6,106,615 |
| Per capita exports US$/inhabitant) | 108.4 |
| Share in world market (%) | 1.59 |

**Trends and competitiveness - Processed food**

| | |
|---|---|
| Value of exports (in thousand US$) | 1,377,625 |
| Export growth in value, p.a. (%) | 16 |
| Share in national exports (%) | 2 |
| Share in national imports (%) | 6 |
| Relative trade balance (%) | -48 |
| Relative unit value (world average = 1) | 0.6 |
| Net exports (in thousand US$) | -2,564,561 |
| Per capita exports US$/inhabitant) | 16 |
| Share in world market (%) | 0.23 |

## 5. Automotive

*Background and Trends: The Condition of the Industry*

Passenger car ownership in Vietnam is quite low, about 3 vehicles per 1,000 inhabitants, but has been increasing rapidly. (For transport, motorcycle ownership per capita in Vietnam is one of the highest in the world and increasing.)

The state of the industry has been in a bit of flux since the mid-1990s when Japanese affiliated joint ventures arose. The industry contracted in the late-1990s. Recently, the industry has begun expanding again. Only about 120,000 vehicles per year are actually produced in Vietnam, far below existing capacity. The industry employs about 100,000 workers in relatively high wage jobs.

**Trends and competitiveness - Motor vehicles**

| | |
|---|---|
| Value of exports (in thousand US$) | 604,889 |
| Export growth in value, p.a. (%) | 13 |
| Share in national exports (%) | 1 |
| Share in national imports (%) | 5 |
| Relative trade balance (%) | -70 |

| | |
|---|---|
| Relative unit value (world average = 1) | 0.9 |
| Net exports (in thousand US$) | -2,873,189 |
| Per capita exports US$/inhabitant) | 7 |
| Share in world market (%) | 0.04 |

*The Business Model and Role of International Trade*

The industry's strategy has been evolving, guided until recently by the government Automobile Industry Master Plan. That plan envisaged production of nearly 400,000 vehicles annually by 2020, including cars, coaches, and trucks. Much of the industry is characterized by joint ventures with Japanese (7 companies), Korean, and U.S. participation. The biggest players are Toyota, Hyundai, and Ford. Mercedes Benz Vietnam Ltd. also has a small plant in the South.

Globally, the industry is not competitive and benefits from substantial tariff protection with import tariffs running to over 80 per cent, along with subsidies, a halving of the value-added tax and registration fees, and numerous infrastructure incentives. Most of the inputs are imported. Flat rolled steel is imported and then stamped in Vietnam. Engines are imported fully assembled. Local primary input production consists only of painting, welding, and assembly of bulk or low value items (tires, batteries, wire harnesses). However, there is some local glass production for windows and at least some localization of big parts like seats. Trucks and 16-passenger buses are produced locally with more local parts and value added up to 70 per cent. Some voices in the industry think that these products can be competitive with substantially reduced protection in 2018. More generally, the business plan is to gain some more time to focus on some particular products. Encouragingly, Ford has expressed the possibility of exporting regionally.

*FTA Considerations*

*i) Preference Potential*

The industry is heavily protected currently and well aware of the force of on-coming implementation of regional trade agreements. The tariff protection in Vietnam, reported below, is scheduled to fall substantially within eight years.

**Table 5.34: Tariffs confronting VN vehicle imports without FTApPreference**

**HS 87 (Vehicles o/t railw/tramw roll-stock, pts & access)**

| Simple Average | Weighted Average | Standard Deviation | Minimum Rate | Maximum Rate | Nbr of: Total Lines | Domestic Peaks | International Peaks |
|---|---|---|---|---|---|---|---|
| 30.09 | 31.78 | 36.34 | 0 | 150 | 698 | 156 | 490 |

The industry sense is that tariffs less than 20 per cent would be very disruptive just now.

*ii) Supply Response Potential*

The industry is certainly not concerned about expansion. Existing capacity is substantially underutilized at about 40-50 per cent. Of more concern is how to rationalize the industry in the face of growing foreign competition, including increasingly from the Chinese automotive sector. Some trade officials have offered that the domestic industry could disappear within the next ten years if current trade agreement commitments are implemented. Industry representatives express the intention to survive even without import duty protection in the future. Trucks and buses production seems the most realistic prospect for survival.

*Challenges and Opportunities*

The Trade Association (VAMA) represented the industry as generally supportive of the FTAs, although members' attitudes differed. Naturally, there were concerns about lower tariffs on CBU (complete built up) vehicles, but benefits from lower parts tariffs are recognised as well. If tariffs went immediately to zero, the industry would largely shut down. Technical knowledge transfers and cooperation were seen as being enhanced by the FTAs. The industry would like until 2020 to reinvent itself and focus on competitive niches. It aspires to be viewed as a "strategic industry" eligible for some government assistance.

In April, car manufacturer Xuan Kien Private Enterprise (Vinaxuki) bought a workshop in northern Thai Nguyen Province in order to pursue its strategy to produce trucks and touring cars in Vietnam. The group has also invested US$32.4 million in a bus factory and has hinted that they plan to start exporting to ASEAN countries.

As part of the industry realignment, some advocate product diversification. The problem is that current production runs of 30,000 units in Vietnam are already too short. Runs of 50,000 units are needed to realize scale economies.

**6. Furniture and wood products**

*Background and Trends: The Condition of the Industry*

The furniture and wood products industry consists of about 3000 firms, of which 5 per cent are SOE. Only 10 per cent would be characterized as large and 16 per cent are foreign firms. Much of the production is in the centre and south of Vietnam. Employment in the sector is 700,000 consisting of both skilled and unskilled workers.

Vietnam is both an importer and exporter of the industry products. Exports go especially to the U.S. (30 per cent), EU (27%), and Japan (15%). The main raw input is wood and about 70% is imported, including from AANZFTA partners Australia and New Zealand. It is estimated by the Vietnam Timber and Forest Products Association that Vietnam will need to import 4-5 million tonnes of timber annually over the next 10 years to meet rising demand. There is no import duty on timber and boards, but a positive tariff on particle-board.

**Trends and competitiveness - Furniture and wood products**

| | |
|---|---|
| Value of exports (in thousand US$) | 898,993 |
| Export growth in value, p.a. (%) | 31% |
| Share in national exports (%) | 1% |
| Share in national imports (%) | 2% |
| Relative trade balance (%) | -27% |
| Relative unit value (world average = 1) | 0.8 |
| Net exports (in thousand US$) | - 654,762 |
| Per capita exports US$/inhabitant) | 10.4 |
| Share in world market (%) | 0.28% |

*The Business Model and Role of International Trade*

Firms produce products for both the domestic market and for export. Machine tools tend to be imported, especially from Germany, and chemicals come from Malaysia, Taiwan, and Denmark. Quality is considered good. Exporters often work with foreign partners and the U.S. is the biggest market destination.

While the industry exports product, Vietnam also imports goods from places like Taiwan where quality and price are competitive.

*FTA Considerations*

The FTAs are viewed as of mixed benefit by the industry. Trade with Japan is viewed as an opportunity, but the ACFTA with China is viewed less favourably.

*i) Preference Potential*

Potential tariff preferences are shown in Table 5.35.

**Table 5.35: Tariffs confronting VN furniture and wood products exports without FTA preference**

| | |
|---|---|
| **94** | **Furniture; bedding, mattress, matt support, cushi** |

| Country | Simple Average | Weighted Average | Standard Deviation | Minimum Rate | Maximum Rate | Nbr of: Total Lines | Domestic Peaks | International Peaks | Imports Value ($'000) |
|---|---|---|---|---|---|---|---|---|---|
| **Korea** | 3.86 | 2.68 | 3.98 | 0.00 | 8.00 | 62 | 0 | 0 | 77,557.761 |
| **China** | 4.58 | 0.63 | 6.57 | 0.00 | 20.00 | 47 | 0 | 5 | 58,055.721 |
| **India** | 10.00 | 10.00 | 0.00 | 10.00 | 10.00 | 23 | 0 | 0 | 902.178 |
| **Australia** | 4.55 | 5.03 | 2.03 | 0.00 | 10.00 | 36 | 0 | 0 | 93,250.555 |
| **New Zealand** | 4.70 | 4.99 | 1.71 | 0.00 | 10.00 | 56 | 1 | 0 | 15,537.827 |

**44 Wood and articles of wood; wood charcoal.**

| Country | Simple Average | Weighted Average | Standard Deviation | Minimum Rate | Maximum Rate | Nbr of: Total Lines | DomesticPeaks | International Peaks | Imports Value ($'000) |
|---|---|---|---|---|---|---|---|---|---|
| **Korea** | 6.71 | 4.60 | 2.37 | 0.00 | 10.00 | 178 | 0 | 0 | 55,956.912 |
| **China** | 3.96 | 0.15 | 4.46 | 0.00 | 20.00 | 94 | 0 | 4 | 176,582.517 |
| **India** | 9.41 | 9.03 | 2.31 | 5.00 | 10.00 | 65 | 0 | 0 | 7,107.383 |
| **Australia** | 4.52 | 4.94 | 1.60 | 0.00 | 5.00 | 26 | 0 | 0 | 3,808.465 |
| **New Zealand** | 3.13 | 4.01 | 2.50 | 0.00 | 5.00 | 37 | 0 | 0 | 371.683 |

*ii) Supply Response Potential*

The industry Trade Association (VIFORES) feels that the industry could expand. However, in international trade increasingly raw materials need certificates verifying source and so on, like VPA in Europe. Also, chemical substances in furniture are being monitored in importing markets.

In the domestic market, both finance and retaining good labour are potential constraints on expansion.

*Challenges and Opportunities*

The industry is challenged by domestic tightness of finance and the skilled labour market, as well as international competition as tariffs have come down. But a strategy for competing has been articulated which aims to increase value added. This includes increasing quality, productivity, and remaining price competitive. Also, the domestic market is seen as an opportunity. Finally, research into the use of Vietnam's timber is being pursued.

## 7. Paper and pulp

*Background and Trends: The Condition of the Industry*

The paper and pulp industry in Vietnam consists of about 100-200 small firms and 20 medium to large firms. Products include printing and writing paper, packaging and shipping boxes, toilet paper, and wrapping paper. Capacity tends to be too low to achieve economies of scale and only the larger firms produce boxes. Small firms have a capacity of around 10,000 tonnes per year and large firms 20,000-30,000 tonnes per year. The largest firm is an SOE with a capacity of 220,000 tonnes per year from an old factory, but even this is small compared to world factories which have capacity of up to 1 million tonnes per year. The industry was comprised totally of SOE in the past, but now SOE are only about 10 per cent of production.

Domestic demand in Vietnam is not high at 28 kg/person per year. The world average is 52 kg/person and the U.S. consumes 300 kg/person per year. Generally the industry is stagnate or in decline, severely threatened by imports. But a strategy for future survival in the face of increased foreign competition is evolving.

*The Business Model and Role of International Trade*

The firms are relatively capital intensive, using machinery imported from China and Europe. Pulp is the primary input and while there is some domestic production and new investment planned, about 60 per cent of the pulp is imported. Wood chips used for pulp are actually exported from Vietnam and then re-imported as pulp. Waste paper is also imported. Paper is also recycled domestically and collected from thousands of individuals in lots often less than 50 kg.

The industry is well aware of the WTO and ASEAN FTAs. International trade and especially Chinese producers pose a challenge for the industry, and, even with import duties of up to 50 per cent, the competition is substantial. Vietnam imports US$1,069 million of paper and paperboard each year and imports have been growing at 20 per cent per year for the last five years. As the tariffs are removed in the future, the expectation is that the industry will need to downsize further. So the strategy is to find niche areas and products in order to survive, possibly at a smaller scale. But, of course, the problem is that the scale of production runs is already too small.

*FTA Considerations*

*i) Preference Potential*

Many products are imported but currently subject to import duties of up to 50 per cent. This will afford large tariff preferences to FTA partners China and Korea who already export substantial quantities of paper products to Vietnam. Below is the structure of Vietnam tariffs in the sector.

**Table 5.36: Tariffs confronting VN paper products imports without FTA preference**

**HS 48 (Paper & paperboard; art of paper pulp, paper/paper)**

| Simple Average | Weighted Average | Standard Deviation | Minimum Rate | Maximum Rate | Nbr of: Total Lines | Domestic Peaks | International Peaks |
|---|---|---|---|---|---|---|---|
| 21.64 | 14.73 | 14.59 | 0.00 | 50.00 | 193 | 0 | 110 |

*ii) Supply Response Potential*

Given the capital-intensive, economies of scale nature of the industry, the prospects for the industry are not bright. When the tariffs of as much as 50 per cent are removed, the industry will likely largely disappear without government assistance. However, the industry is aware of this and is prepared to downsize. Not much employment dislocation is involved given the nature of the industry.

*Challenges and Opportunities*

The biggest challenge is, of course, foreign competition, especially from China, and the removal of current high levels of industry protection. While the industry must probably downsize, firms are aware of the changing environment.

## 8. Rubber

*Background and Trends: The Condition of the Industry*

The rubber industry is large and evolving. There are over 100 enterprises consisting of about 60 small ones, 5-10 employees, and the rest large, over 10,000 employees. State-owned Enterprises still account for about 60 per cent of production, but this has been dropping and will soon be 50 per cent. Big companies generally find markets on their own, while smaller companies seek out partners. Output of 600,000 tonnes is expected to rise to 1.2 million tonnes by 2020. Expansion in Vietnam is limited by land and other constraints, but operations are being expanded to Myanmar and Lao.

Equipment is imported from the EU and the U.S., but now the big machines come from China.

*The Business Model and Role of International Trade*

The domestic market is weak but characterized as improving. But the Trade Association (VPPA) supports domestic production study tours. One strategy is to emulate Malaysia which moved from only rubber plantations first, and then to manufactured products like tires, gloves, and so on. The industry does produce truck and motorcycle tires for the domestic market. Also, truck tires are now exported to 100 markets including the U.S. and Taiwan.

The mainstay of the industry is the export of basic (crum and latex) rubber. Over 60 per cent of the exports go to China, although this is down from 80 per cent. Most of these exports go by truck over the border to factories in the south of China. India is a rapidly growing export destination.

*FTA Considerations*

The industry is well aware of and welcomes the ASEAN FTAs. The ACFTA is viewed as the most important. The industry is very export oriented and would encourage moving as rapidly as possible with FTAs. Besides potential tariff preferences in partner markets, tariffs on machines would be lowered.

*i) Preference Potential*

**Table 5.37: Tariffs confronting VN rubber exports without FTA preference**

| Country | Simple Average | Weighted Average | Standard Deviation | Minimum Rate | Maximum Rate | Nbr of: Total Lines | DomesticPeaks | International Peaks | Imports Value ($'000) |
|---|---|---|---|---|---|---|---|---|---|
| **India** | 16.15 | 25.13 | 12.67 | 10.00 | 70.00 | 44 | 2 | 8 | 10,300.863 |
| **Korea** | 6.72 | 0.52 | 2.79 | 0.00 | 8.00 | 74 | 0 | 0 | 74,009.030 |
| **China** | 11.35 | 9.77 | 5.04 | 1.00 | 22.00 | 50 | 0 | 13 | 207,458.255 |
| **Australia** | 5.31 | 7.65 | 4.12 | 0.00 | 17.50 | 27 | 1 | 1 | 11,177.909 |
| **New Zealand** | 3.18 | 2.60 | 2.67 | 0.00 | 10.00 | 52 | 2 | 0 | 1,100.644 |

*ii) Supply Response Potential*

If prices were higher, the industry could respond with increased exports. Transport is generally not a problem (although the land route to China has been closed for some months). Labour supply is not a severe problem yet, but skilled labour is in short supply. Wages need to be higher and training is necessary in order to attract the workers who run the machines. New tree stock would take some time to become productive.

*Challenges and Opportunities*

Challenges include finding more plantation land and continued compliance with environmental laws and regulations. (Some standards are viewed as "too high" and certainly are higher than in Malaysia, making it harder to compete.)

Generally, the industry remains healthy and export oriented.

**9. Electronics**

*Background and Trends: The Condition of the Industry*

The electronics industry is the latest of Vietnam's successes in manufactured export development. With no exports until the mid-1990s, exports of electronics reached nearly USD 1.5 billion in 2005, up 34% as compared with the previous year, USD 2.75 billion in 2008, a 28.2 % increase over 2007.

In recent years, the nation's electronics sector has seen year-on-year growth of 10-12 per cent. The industry is expected to expand further by 2010 to reach revenue of USD 4- 6 billion of exports and growth rate of 20%-30% per year.

By 2009, Viet Nam had 300 electronics firms, of which 30 per cent are foreign investments, accounting for 90% of total investment and revenues and 80 per cent of market share according to the Institute of Industrial Policy and Strategy Research.

In the future, domestic enterprises will develop toward specialized electronics production, including finished products, spare parts, tools and supportive products used in computer science, telecommunication, health electronics, and measurement and automation. Investment in the electronics industry in industrial and processing zones will be the focal points following the socio-economic development orientation until 2020 and in the vision of 2020 Strategy articulated by the Government.

According to the Viet Nam Electronics Enterprises Association, after joining the WTO, electronics companies of Vietnam have defied expectations and grown. It is also foreseen that there is still room to improve productivity.

**Trends and competitiveness - IT and Consumer electronics**

| | |
|---|---|
| Value of exports (in thousand US$) | 2,301,196 |
| Export growth in value, p.a. (%) | 27 |
| Share in national exports (%) | 4 |
| Share in national imports (%) | 5 |
| Relative trade balance (%) | -20 |
| Relative unit value (world average = 1) | 1 |
| Net exports (in thousand US$) | -1,163,654 |
| Per capita exports US$/inhabitant) | 26.7 |
| Share in world market (%) | 0.23 |

**Trends and competitiveness - Electronic components**

| | |
|---|---|
| Value of exports (in thousand US$) | 2,112,150 |
| Export growth in value, p.a. (%) | 22 |
| Share in national exports (%) | 3 |

| | |
|---|---|
| Share in national imports (%) | 5 |
| Relative trade balance (%) | -25 |
| Relative unit value (world average = 1) | 0.6 |
| Net exports (in thousand US$) | -1,414,763 |
| Per capita exports US$/inhabitant) | 24.5 |
| Share in world market (%) | 0.20 |

*The Business Model and Role of International Trade*

The business model is evolving and relies on substantial foreign investment and direction.

*FTA Considerations*

The industry has become very outwardly oriented and is generally well aware of trade agreements and their potential. In fact, for many products, preference potential is probably limited.

*i) Preference Potential*

**Table 5.38: Tariffs confronting VN electrical/electronics exports without FTA preference**

| | **85** | **Electrical mchy equip parts thereof; sound record** | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Country** | **Simple Average** | **Weighted Average** | **Standard Deviation** | **Minimum Rate** | **Maximum Rate** | **Nbr of: Total Lines** | **DomesticPeaks** | **International Peaks** | **Imports Value ($'000)** |
| **Korea** | 5.50 | 6.23 | 3.90 | 0.00 | 8.00 | 510 | 0 | 0 | 156,624.382 |
| **China** | 5.60 | 5.46 | 8.52 | 0.00 | 35.00 | 268 | 18 | 32 | 611,617.339 |
| **India** | 6.90 | 9.74 | 3.01 | 0.00 | 10.00 | 112 | 0 | 0 | 54,934.249 |
| **Australia** | 2.82 | 3.30 | 2.97 | 0.00 | 10.00 | 106 | 0 | 0 | 53,661.909 |
| **New Zealand** | 2.98 | 1.67 | 2.57 | 0.00 | 10.00 | 130 | 1 | 0 | 7,644.445 |

*ii) Supply Response Potential*

The industry has shown some potential to expand with the assistance of FDI.

*Challenges and Opportunities*

The industry still lags in designing products which suit consumers' preferences. Shortage of skilled labour is also a concern. In addition, it is difficult for domestic enterprises to compete with foreign ones as they lack the capital to develop and apply modern technology. Vietnamese firms spent only 0.3-5 per cent of their turnover on research and development, compared to 5per cent in India, 10 per cent in South Korea and 12 per cent in China.

In accordance with commitments made under AFTA agreements, average import taxes on electronics parts are to be lowered from 9.41 per cent to 6.36per cent, which would encourage the import of components and the assembly of computers within the country. Duties on complete built-up unit electronic products which have the local content of at least 40% from ASEAN countries have been reduced to 0-5% from the previous 20-30%, which has had an impact on local production protection.

## 10. Coffee

*Background and Trends: The Condition of the Industry*

Coffee is both grown and roasted in Vietnam. About 97 per cent of the crop is of the robusta variety, grown on around 600,000 hectares, although Arabica production is increasing. The industry produces about US$ 2 billion of coffee products.

Coffee production has been a major source of income for Vietnam since the early 20$^{th}$ Century. Vietnam is the second largest producer after Brazil, accounting for 14.3 per cent of the world market share. The quality of the beans, however, has typically limited their marketability. Robusta coffee accounts for 97 per cent of Vietnam's total output, with 1.17 million tonnes exported in 2009, a value of USD 1.7 billion. Arabica production is expected to rise owing to the expansion of growing areas. Other types of coffee grown in Vietnam include Chari (Excelsa) and Catimor. Coffee is mostly grown in the highland areas and the quality depends on the high elevations.

The ten biggest buyers are operating in Vietnam, but contracts are only six month to a year. Meanwhile, prices on the export market have been declining. In the first six months of 2010, Vietnam exported 600,000 tonnes of coffee worth US$ 800 million and it is estimated that exports will reach US$ 1.1 billion this year, a drop of 40 per cent from last year. Main destinations include Europe and the US.

*The Business Model and Role of International Trade*

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*FTA Considerations*

*i) Preference Potential*

The potential preference margin in FTA partners Korea, and especially India, are very high and the export industry stands to gain considerably if market access can be negotiated. China is also attractive as the preference margin is medium high and the demand for coffee in China is growing. Table 5.39 reports the margins along with the tariff peaks for products within the sector.

**Table 5.39: Tariffs confronting VN coffee exports without FTA preference**

| | **09** | **Coffee, tea, matï and spices.** | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Country** | **Simple Average** | **Weighted Average** | **Standard Deviation** | **Minimum Rate** | **Maximum Rate** | **Nbr of: Total Lines** | **DomesticPeaks** | **International Peaks** | **Imports Value ($'000)** |
| **Korea** | 37.06 | 2.44 | 103.20 | 2.00 | 513.60 | 23 | 2 | 2 | 108,295.944 |
| **China** | 13.60 | 8.48 | 4.09 | 5.00 | 20.00 | 14 | 0 | 11 | 29,029.566 |
| **India** | 65.45 | 67.87 | 28.70 | 30.00 | 100.00 | 63 | 49 | 63 | 35,458.881 |
| **Australia** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 21 | 0 | 0 | 19,870.020 |
| **New Zealand** | 2.08 | 0.54 | 2.49 | 0.00 | 5.00 | 24 | 0 | 0 | 5,042.192 |

*ii) Supply Response Potential*

The main constraints on exporting coffee are the current low prices in world markets, land limitations, lack of water, and increasing concerns with SPS compliance. About 30 per cent of old trees need to be replaced. Skilled labour is not a constraint, but wages have been rising. Foreign investors, for example from India, are beginning to enter the processing stage production.

*Challenges and Opportunities*

Branding is an important issue. So far, there are only a few companies that successfully build their brand names and sell to the world market.

Coffee production has been a major source of income for Vietnam since the early 20$^{th}$ Century. Vietnam is the second largest producer after Brazil, accounting for 14.3 per cent of the world market share. The quality of the beans, however, has typically limited their marketability. Robusta coffee accounts for 97 per cent of Vietnam's total output, with 1.17 million tonnes exported in 2009, a value of USD 1.7 billion. Arabica production is expected to rise owing to the expansion of growing areas. Other types of coffee grown in Vietnam include Chari (Excelsa) and Catimor. Coffee is mostly grown in the highland areas and the quality depends on the high elevations.

Taking non-tariff issues into account, while it is not difficult to send coffee beans to the EU, that is not the case for finished products. Apart from the import procedures, SPS regulations are onerous, and the VAT applied to roasted coffee and instant coffee is very high.

Labour is not considered a big problem for the coffee industry. Training is provided for staff by big companies like Nestle. However, technical assistance is still needed to train people, particularly farmers. Capital and access to finance is a problem.

Currently, the question is how, with constant land area, to improve the quality and add value to coffee products, and not just sell raw coffee beans. It is also seen as necessary to improve the lives of farmers. This is because coffee has a long gestation period. While things like the price of oil and labour have been increasing, coffee prices are going down. Farmers are therefore discouraged and cut down the trees. As a result, after a couple of years, plantation and production will decrease.

## 5.6 Lessons and conclusions

The CGE model identifies quantitatively the sectors which will be most affected by implementation of the ASEAN FTAs. This section uses several approaches, including interviews, in order to assess within the broader sectors of the CGE just which products or subgroups might be expected to be most favoured or challenged.

Some key relevant points for future negotiations that have come out in the surveys are:

- that part of an FTA should be about technical and financial assistance to facilitate trade and grow markets, and not about agreeing to apply rules and regulations defined by developed countries that are inappropriate for less developed countries and constrain trade, or additional non-trade objectives that are better addressed more directly, for preferences that will eventually diminish;
- the need for comprehensiveness (Locking agriculture out of a Vietnam-related FTA such as AFTA, AKFTA, etc. would greatly lower the potential benefits.);
- a continuation of the openness that has served ASEAN well during recent crisis periods;
- better implementation of "on paper" aspects of FTAs such as lower tariffs without these transparent constraints being replaced by less transparent NTBs;
- simple, consistent, flexible and liberal rules of origin, common standards, acceptance of appropriate test results from partners' laboratories on SPS matters, etc. that address the "Noodle/Spaghetti bowl" problem of a mass of intertwining FTAs;
- there was mainly only interest in the bigger FTAs with countries that Vietnam is already strongly trading with, supporting the endogeneity view of the links between trade and FTAs;
- addressing non-tariff aspects such as anti-dumping (This was also raised in the local press by the UK Ambassador.); for example, dealing with the issue in competition policy as in ANZCERTA or even just recognition of Vietnam as a market economy, which removes some anti-dumping options;
- trade and sound domestic policies -- e.g. competitiveness, investment, labour markets, industry adjustment, education and training -- need to be better integrated with trade agreements supporting unilateral domestic policy reforms; and,
- China is seen as a threat but not one to walk away from and lose growing opportunities as currently seen as arising from Vietnam's increasing wages advantage that will surely increase

further with greater integration between the two countries, as, say, through production networks.

# Chapter 6 Implications for strategy

## 6.1 Introduction

There is very little guidance in the literature on strategies for a system of negotiating, implementing and evaluating FTAs, especially in comparison with such multilateral systems in the WTO (however, see ADB 2008 and PC2010). Full negotiation strategy approaches would require detailed aspects such as an assessment of the proposed partner's previous negotiating strategies and outcomes, quantitative analysis of past and possible future FTAs, qualitative analysis including interviews of all stakeholders, SWOT analysis, etc (see box 1 in Executive Summary). Such procedures are often determined by domestic requirements and cannot be completely generalised across all countries. Pre-negotiation consultations made up of national feasibility studies and impact assessments, and public hearings are only one small component of lengthy procedures, with even a feasibility study taking from 6 months to a year to complete. Box 3.4 in ADB (2008) lists as useful information in the procedures:

- Economic analysis and country trade performance;
- Sector/industry information, measures affecting trade and non-tariff barriers;
- FTA trends and useful resources;
- Domestic and FDI policies and regulations;
- Domestic and trade priorities of the FTA partner; and
- Sensitive issues including trade remedies filed and raised in dispute settlement
- Mechanisms against prospective FTA partners.

The focus in this project in terms of negotiating strategies has been on Vietnam-related FTAs, including through important in-country interviews. However, the quantitative analysis allows an assessment of potential partner's benefits and costs from FTA scenarios, as well as potential trade flow indicators for all FTA partners, all useful inputs to a full negotiating strategy (addressing which sectors benefit and which may lose from FTAs).

In looking at strategies to design, negotiate and implement a FTA, it should not be overlooked that large benefits could be obtained from improving current Vietnam-related FTAs, for example AFTA in relation to rationalising sensitive sectors, ROOs etc, both in terms of this FTA, as well as current and future FTAs involving ASEAN. There are also guidelines that have been developed from past experiences with FTAs such as on openness that all partners need to follow for "high quality" FTAs (e.g. APEC (2006) and PECC (2006)). It should also not be overlooked that strategies aimed at improving economic welfare means more imports in some sectors as well as exports in others, and to go into negotiations with a mentality of gaining concessions and not giving anything away (though such an approach would be "giving away" exports for no cheaper inputs etc), would be misplaced .

## 6.2 Are FTAs beneficial?

The answer to the question of can FTAs be beneficial is a qualified yes, so long as you can get the right design and implementation.

It should be appreciated at the outset that FTAs are always "second best" but can have complementarities with other approaches that may have stalled. For example, unilateral liberalisation which has delivered the main benefits, as evident in Vietnam from "Doi Moi" which preceded ASEAN and WTO accession, can be supported by trade agreements that tie domestic policy reforms, say in competition policy, to the agreement. This complementarity runs both ways because for trade policy to be successful it needs to integrate well with sound domestic policies such as in competition. Multilaterally, with the right design, say in terms of openness, FTAs could act as "building" blocks for multilateral liberalisation rather than "stumbling" blocks by trying to lock in preferences. Multilateral liberalisation would appear the only way to address some issues such as agricultural subsidies that are of prime concern to agrarian countries such as Vietnam.

As mentioned above, the right design of a FTA is critical to whether it will deliver benefits or not. There have been a number of recent references to design characteristics that make one FTA better than another (see for example World Bank 2005, RIRDC (2005), APEC 2006, PECC 2006, PC 2010, and Hill and Menon 2010).

This research shows that open regions do better. That is "open regionalism", in which preferences are multilateralised and rules of origin made least restrictive as in ASEAN, creates more efficient trade through access to competitive low cost suppliers and production network, avoiding trade diversion and adverse terms of trade, and results in a domestic economy that is better placed to compete in an increasingly integrated world market. Low utilisation rates as in ASEAN are not just a sign of low preferences/complex procedures but a regional economy that is trading mainly in duty free intermediate goods in production networks such as electronics under the WTO IT agreement and to, through, or with a free-trading member in Singapore (Hill and Menon 2010).

A comprehensive agreement is another important design feature. A country like Vietnam would benefit much more from a FTA that included broad coverage of agricultural trade. Moreover, a FTA that includes more than goods, such as services, opens up greater "trade-off" options for countries like Vietnam, especially with developed countries (see for example the TAFTA agreement that had more goods concessions for Thailand and service concessions for Australia). This broader range of trade liberalisation options maximises the gains from specialisation and trade, including in terms of more competitive inputs for each domestic economy, whether it be agricultural, service or other inputs.

Being ambitious is related to the comprehensive design feature. Exemptions and partial liberalisations are benefits foregone.

A similar situation applies to implementation, for if what is negotiated "on paper" is not delivered in actuality then expected benefits will not be realised. Tariff reductions may take place but if these are replaced by non-tariff barriers such as restricting points of entry or apply excessively onerous border clearances then the negotiated benefits will not be realised. The sooner the benefits start to be continually realised from proper implementation, and the adjustment costs which are short-term are addressed, the larger are the net benefits. There can be a case for addressing some adjustment costs through retraining, letting capital depreciate etc for a period before implementation that may also be fully undertaken over a set period of time. This is one rationale why tariff liberalisation etc might apply at a different rate for the less developed members of ASEAN.

Path dependence is an aspect that is related to the discussion at the end of the previous paragraph. If capital investments are made on the basis of preferences and these disappear, as they invariably do, then the residual capital could be wasted. This problem points to how tariff driven FDI is a poor allocation of scarce resources.

There are other, dynamic considerations in the question of whether FTAs are beneficial or not. There are logistical issues of whether regional grouping such as ASEAN should negotiate integrated FTAs with partners first (with different timing on implementation) or the easier bilaterals between individual members and the partners first and then integration being undertaken within ASEAN. The pros or cons of these approaches will be dependent on specifics such as the simplicity, consistency, flexibility and liberalness of Rules of Origin (ROOs), or the requirements to receive preferences, that are discussed in more detail elsewhere. Dynamics also relate to FTAs in terms of competitiveness. It has been found that competition required to achieve efficiencies to succeed on world markets from within an FTA is much less dynamic and weaker from within an FTA than from more open external imports (World Bank 2005).

## 6.3 Future partners

There are a number of future partners that have been mentioned in relation to FTAs involving Vietnam, for example the EU, which by its very size has a large potential, Chile and Turkey, all of which were quantitatively analysed in the study. Various guidelines have been developed to determine what might be good or "high value" partners and some of these are listed next:

- Some guidelines have been derived from theoretical model, for example "Johnson rules" (Johnson 1960) such as having low cost partners, but have stood the test of scrutiny in the real world (see World Bank 2005);
- The benefits of openness, which is associated with multilateralising tariffs, was discussed in some detail in the last section;
- The benefits of comprehensiveness, especially in covering sectors such as agriculture, as well the related aspect of being ambitious in offers and concessions, was also discussed in some detail in the last section;
- The needs for Rules of Origin to be simple, consistent, flexible and liberal were also mentioned and these are particularly important given Vietnam's membership of a significant regional grouping such as ASEAN which continues to benefit from its position in international production networks;
- As mentioned in respect of an FTA with the EU, the partner having a large market offers large potential gains but on the other hand large developed country groupings may bring into negotiations issues that might not be in Vietnam's best interests such as some non-trade issues whereas FTAs with smaller partners that are closer to Vietnam's stage of development and with complementary domestic economy and trade situations, could offer significant benefits;
- Having Non-Tariff Barriers (NTBs), Technical Barriers to Trade (TBT), Sanitary and Physo-Sanitary (SPS), investment, dispute settlement forums, Intellectual Property (IP) and other relevant rules that are appropriate to Vietnam's level of development as it continues to develop, increasing certainty in trade, will be important for an FTA to deliver the benefits that might be expected from commitments in more transparent trade barriers such as tariffs;
- Anti-dumping is a specific trade-related mechanism that Vietnam has already experienced some frustration with in relation to a broad range of products such as seafood, shoes, and

bikes. FTAs can be used to address this issue. At a basic level Vietnam being recognised as a market economy can diminish some of the more extreme anti-dumping action practices such as proxying Vietnam's economy with a high cost one in price comparisons. At a more sophisticated level, ANZCERTA has recognised that predatory pricing, which anti-dumping is aimed at addressing, is better addressed through integrated competition policy as a possible anti-competitive action, allowing what might have been treated as anti-dumping to be treated as just international competition;

- In respect of trade-related rules being appropriate to a developing country's level of development, FTAs could offer technical assistance, assistance with mutual recognition etc to facilitate trade as a driver of development; and finally,
- Mention was made in the last section of the benefits of trading arrangements promoting new cross-border competition which can deliver some of the type of competition required to achieve efficiencies to succeed on world markets.

Partners should be based on such guidelines, incorporating quantitative assessments of the net benefits that could arise, realising opportunities arising from strengths and addressing positively the threats that would occur as a result of weaknesses. This assessment could be taken into a broader political framework that would assess trade-offs between economic benefits and costs with other criteria such as the need for political alliances for security or other reasons. However, the costs of such trade-offs should be very transparent so that there is no risk that the economic cost being borne are the least of what society would be willing to be pay for the non-economic society objective and that vested interests are not being favoured in achieving these objectives.

## 6.4 Addressing concerns

A number of concerns on FTAs have been raised in discussions with government, business and other researchers during the study and this section discusses them as a listed group of concerns.

- Preference erosion is where preferential tariffs that might be applied under an FTA are eroded or diminished, for example through multilateral trade arrangements that shrink the gap between MFN and preferential rates; through unilateral liberalisation that mimics this action; through unilateral elimination of preferences as has occurred to Vietnam in respect of the Generalised System of Preferences (GSP); and FTA partners engaging with further preferenced partners (as Vietnam is doing with its continuing dialogues with the EU, Chile, Turkey, the Trans Pacific Partnership etc). It can be appreciated from this list of means by which preferences can be eroded, and Vietnam's own experiences, that this erosion would be inevitable and that countries benefiting from preferences need to take the opportunity to become more competitive to be able to survive in an open market and not fall into the trap of such preferences leading to uncompetitive practices because of the absence of full competition. Preference erosion also points to the importance of FTAs being comprehensive and including other provisions such as trade facilitation that will grow in importance as preferences erode.
- Competition from China was raised in many discussions and surprisingly, relative to many other countries, in an optimistic fashion. Some exporters such as the rubber sector are looking for more liberalisation with China to expand their imports and on the other side, import-competing industries such as pulp and paper appreciate they will be further challenged but are not looking for protection, only time to adjust and develop niche opportunities that may build

off cheap Chinese imports. Trading with China may mean some import surges but it also means greater opportunities, for example the recent growth in wage differentials between Vietnam and China in conjunction with greater integration and other attractions for investment, like more certain policies, will draw investment into Vietnam.

- Unemployment resulting from an FTA was also raised as an issue but the quantitative analysis shows that this is more an issue of redeployment which is already an issue in Vietnam with labour shortages in some vocational areas that are booming due to economic development, including in trade. A key requirement here is a flexible economy that can facilitate the necessary structural adjustment through dynamic sectoral growth, retraining, etc. Specialisation and trade as well as other expansion will need to draw scarce resources such as labour, capital and land from other sectors such as some parts of agriculture and government that will decline with economic development.
- Noodle/Spaghetti Bowl effects which result from a mass of overlapping FTAs with inconsistent, complex, inflexible and narrowly interpreted ROOs etc drew complaints about the amount of paperwork and transaction costs associated with these various FTAs. This can only be addressed by ROOs and other aspects being consistent, simple, flexible and liberal;
- Tariff revenue loss was another aspect that quantitative analysis showed should not be of concern. To ensure this is the case, other forms of taxation that will grow with the positive economy-wide impacts of trade liberalisation should be developed. It should also be appreciated that the tariff revenue loss under a FTA goes to the profits of the foreign exporters obtaining the preferences whereas with multilateralising these lower tariffs, the tariff revenue goes to domestic consumers and could contribute to higher VAT revenues; and finally,
- Balance of payments were an issue that was discussed on occasions but raised often in the media and again the quantitative analysis showed that a FTA would raise exports but also imports, often by similar amounts. The quantitative analysis also showed that narrow trade or investment policy approaches aimed at a better balance of payments could result in poor broader economic outcomes. The trade deficit is a multifaceted issue concerning demand management, inflation control, incoming investment, etc that would require multiple policy instruments, many more directly related to the underlying issues than bilateral trade controls, such as the flexibility of the exchange rate. To appreciate this look at the broader impacts of a control policy based just on raising tariffs which would increase costs, raise inflation, make exports less competitive, deter investment etc. A long-term view needs to be taken with this issue and assessments made of what is driving the deficit and the consequences can be quite different for a deficit driven in the short-term by consumption or intermediate products that are exported in a value-added form or to one driven by longer-term investment in production equipment.

## 6.5 Non-trade concerns and a bottom-line

Similar to the point just made on the balance of payments, there are a number of non-trade issues that can enter FTAs such as environment, social, and labour issues. Little has been said about these issues, as they are beyond the scope of this study and appropriate use of trade policy, but may nonetheless have some bearing on the policymaking process. Although trade flows affect the environment and labour markets, it is usually sound policy to deal with these issues directly rather than through trade policy. Environmental policy should be used to tackle environmental problems, and social policy to tackle social problems. Trade policy is a second best instrument for these issues. On the environment, there was a recent EU report titled “Trade Sustainability Impact Assessment of FTA between the EU and ASEAN” that illustrates this point well. Moreover, it was found in research undertaken in PC

(2010) that FTAs containing non-trade aspects tended to be more trade diverting, though this may be correlated with other common aspects such as the level of development.

So as a bottom line on the implications for strategies to FTAs that the study could make would be that FTAs can be beneficial with the right design and implementation, and often that is about choosing the right partners and addressing concerns through integrating the trade arrangements with sound domestic policies. More specifically, the analysis in the preceding chapters of the report details both more aggregated and more detailed sectoral approaches to identifying what items to liberalise in an FTA with specific partners and what items might be seen as being more sensitive and challenged in such FTAs, perhaps requiring specific treatment in the liberalisation process. It is more than likely, given the fact that these items will vary depending on the partner(s) chosen, that previous approaches which tended to be conservative and had a similar list of sensitive sectors regardless of the partner(s), resulted in lost opportunities in both being conservative in their liberalisation commitments and sensitivity exemptions.

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# Appendices

# Appendix 1 Terms of reference

### *Background*

This activity forms part of the Multilateral Trade Assistance Project III (EU – Vietnam MUTRAP III), which is executed by the Ministry of Industry and Trade of the Socialist Republic of Vietnam in partnership with the European Commission. The MUTRAP III project aims at strengthening the capacity of the Ministry of Industry and Trade (MOIT) concerning its core responsibilities of trade policy making, WTO coordination, regional and free trade agreements and implementation of integration commitments and competition policy. The MOIT needs strengthened analytical and research capacity to sufficiently manage and take on the parallel negotiations which are resulting from the WTO-Doha Development Agenda and the increasing number of regional and bilateral trade agreements.

MUTRAP III is implemented in continuity with its predecessors MUTRAP II and MUTRAP I. MUTRAP I launched a wide range of WTO related backgrounds studies, such as comprehensive studies on agricultural, fishery and industrial products in light of WTO perspectives, modalities of tariff reduction; MFN exemptions in services and investment liberalisation; negotiation of agricultural export subsidies and domestic support mechanisms; implementing the SPS and TBT Agreements. MUTRAP II strengthened the capacity of the Government of Vietnam and Vietnamese stakeholders to manage WTO accession and early implementation of its obligations and commitments meeting the challenges arising from Vietnam's international and regional trade agreements.

Built on such backgrounds, MUTRAP III will be focused on five main areas: i) improvement of capacity of the MOIT to coordinate and implement WTO commitments including progress on sector specific issues; ii) improve the coordination of the MOIT with the private sector, training and research institutions to develop a coherent, social and environmental sustainable trade integration strategy; iii) increase the capacity of the MOIT to effectively negotiate and coordinate regional trade related arrangements such as AFTA, ASEAN plus free trade areas and to engage in FTA negotiations with major trade partners including the EU; iv) improve the facilitation in trade in services through better coordination, statistics and analytical capacity; v) strengthening the capacity of the competition policy stakeholders to ensure consumer protection and a fair and level playing field for all businesses through the implementation of the new competition law.

MUTRAP III started its operations on the 6 of August 2008; in December 2008 the Programme Estimate 2008-2012 and the Programme Estimate 2009 were approved. All the activities planned in the Programme Estimate 2009 have been properly implemented.

This activity, being a constituent part of the activities in area 3 (code FTA) of the MUTRAP programme estimate for 2010, aims at assessing the main economic and social effects brought about to Vietnam by the ASEAN-Korea, ASEAN-India FTA, AFTA, ASEAN-Australia and New Zealand.

In 2009 some activities dedicated to assessing the impact of different FTA on the socio-economic situation of Vietnam were initiated: FTA-1 (ASEAN-China FTA), FTA-2 (ASEAN-Korea FTA) and FTA-9, split into two sub activities, FTA-9 AFTA (dedicated to AFTA) and FTA-9 EU (focused on the prospective impact assessment of the possible future FTA between the EU and Vietnam). In 2010

there is a need to revise the interim reports already prepared and complete the others with a view to homogenizing and allowing a comparison of the results.

### *Objectives*

This activity aims to assist Vietnam to identify the efficiency of the following Free Trade Agreements: ASEAN-Korea, ASEAN-India, ASEAN- Australia New Zealand and AFTA through the *ex-ante* and *ex-post* assessment of the main economic and social effects to Vietnam of these preferential trade agreements.

More specifically, the activity shall help Vietnam's Government and business community to (i) identify the sectors that have been and will be positively and negatively affected by the among-mentioned trade agreements; (ii) provide guidelines on how to support the full exploitation of positive effects and to cope with the negative effects of these FTAs; (iii) identify the commitments that should, or should not, have been made as related to the efficiency of these FTAs; and (iv) advise the Government a possible new strategy for future free trade agreement negotiation. This activity shall also help to strengthen the capacity of the Central Institute for Economic Management (CIEM) in economic analysis.

### *Issue at stake*

This activity is part of Component 3 of MUTRAP III. This component aims at building "*Increased Capacity of the MOIT to Effectively Negotiate and Coordinate Regional Trade-Related Arrangements such as AFTA, ASEAN plus Dialogue Partners and to Engage in FTA Negotiations with Major Trade Partners Including the EU*". In particular, Component 3 aims at assisting Vietnam in relation to the increasingly important front of negotiation of bilateral and regional free trade agreements (FTAs) and preferential trading arrangements (FTAs). These undertakings are very complex in nature and require knowledge, resources and a vision that may go well beyond the level of negotiating proficiency that Vietnam had successfully mustered in the framework of its WTO accession.

The driving rationale of almost all requests put forward by MUTRAP III beneficiaries and of the TRTA activities approved for project implementation focuses on a number of actual or perceived shortcomings and needs faced by the Government of Vietnam, its private sector (i.e., its domestic industry and public at large), and its economic system. They are, in relevant part:

- The need to better forecast and assess the socio-economic, commercial, legal and developmental impacts of FTAs commitments;
- The need to improve the FTA negotiation strategy and skills of Government negotiators and assist them;
- The need to be able to take better advantage of the rights and opportunities stemming from multilateral and regional/bilateral trade agreements (for example, and if need be, through WTO, ASEAN and/or bilateral dispute settlement).

The impact assessment study will be based on quantitative analysis, qualitative analysis and sectoral analysis. This activity shall be implemented taking into consideration the results of the impact

assessment studies already completed in 2009 within the framework of MUTRAP III and focused on the ASEAN-China and ASEAN-Korea FTA.

## Appendix to Chapter 3

**Table A3.1 Change in Vietnam's welfare relative to base: Partial and full implementation and free trade under alternative scenarios**

| | Partial | Full | Free trade |
|---|---|---|---|
| | $m | $m | $m |
| AFTA | 321 | 396 | 407 |
| ANZ | -2 | 70 | 58 |
| CHN | 126 | 671 | 1146 |
| IND | 15 | 32 | 42 |
| JPN | 335 | 679 | 2541 |
| KOR | 574 | 608 | 720 |
| ALL | 945 | 2400 | 3913 |
| EU | n.a. | n.a. | 1438 |
| CHL | n.a. | n.a. | 0 |
| TUR | n.a. | n.a. | 15 |
| UNI | n.a. | n.a. | 2719 |

Source: GTAP simulations

**Table A3.2a Change in output relative to base: Partial scenarios**

| | **Base** | AFTA | ANZ | CHN | IND | JPN | KOR | ALL |
|---|---|---|---|---|---|---|---|---|
| | $m | % | % | % | % | % | % | % |
| Land | 2261 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Unskilled labour | 12915 | 1.2 | 0.01 | 0.19 | 0.01 | 0.37 | 0.35 | 3 |
| Skilled labour | 4125 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Capital | 13117 | 2.75 | 0.01 | 0.79 | 0.03 | 1.2 | 2.27 | 7.21 |
| Natural resources | 1897 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rice | 4255 | 5.05 | -0.01 | -0.04 | 0.05 | -0.02 | -6.59 | -1.81 |
| Vegetables, fruit and nuts | 1582 | -1.92 | 0 | 0.05 | -0.1 | 0.07 | 31.52 | 29.79 |
| Other crops | 2600 | -1.89 | 0.01 | 0.05 | 0.47 | -0.47 | -10.14 | -11.33 |
| Livestock | 1325 | 0.84 | 0.02 | 0.26 | -0.02 | 0.67 | -1.71 | 0.49 |
| Forestry | 735 | 0.86 | 0.01 | 0.33 | 0.03 | -0.26 | -0.08 | 1.3 |
| Fishing | 1576 | 0.25 | -0.01 | 0.16 | 0.03 | 0.38 | -0.01 | 1.07 |
| Petroleum and coal products | 6390 | 0.01 | 0 | 0.13 | 0.02 | -0.23 | -0.2 | -0.13 |
| Meats | 2316 | 0.38 | -0.03 | 0.31 | 0.01 | 0.7 | 0.25 | 2.21 |
| Other processed agriculture | 4698 | -1.35 | -0.02 | 0.2 | 0.15 | 1.17 | -3.37 | -3.32 |
| Textiles | 4251 | 2.43 | 0.03 | 0.74 | -0.29 | 4.05 | 1.84 | 9.39 |
| Leather | 7544 | 2.14 | 0.02 | 1.09 | -0.18 | 0.39 | 2.9 | 6.85 |
| Wearing apparel | 5486 | 1.95 | 0.05 | 1.11 | -0.21 | 8.56 | 4.35 | 16.86 |
| Chemicals | 5370 | 2.5 | 0.01 | 0.48 | 0.13 | -0.04 | 0.37 | 3.9 |
| Metal manufactures | 928 | 4.11 | 0.02 | 0.68 | 0.25 | -0.67 | 0.58 | 5.27 |
| Wood & paper products | 3285 | 1.15 | 0.01 | 0.4 | 0.01 | -0.28 | 0.06 | 1.75 |
| Motor vehicles | 4191 | 0.48 | 0.01 | -0.85 | -0.01 | 0.26 | -2.87 | -1.91 |
| Mineral products | 3083 | 1.63 | 0.01 | -0.11 | -0.05 | 1.03 | 1.51 | 4.47 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Manufactures | 6017 | 4.1 | 0.02 | 0.97 | -0.01 | -0.1 | 1.55 | 6.9 |
| Electronics | 3457 | 3.38 | 0.02 | 0.96 | 0.05 | 0.11 | 1.91 | 6.87 |
| Transport & communications | 2986 | 6.84 | 0.01 | 0.38 | -0.01 | 0.31 | 2.69 | 9.75 |
| Business services | 5346 | 1.09 | 0.01 | 0.42 | -0.04 | 0.07 | 0.39 | 2.49 |
| Services nes | 18755 | 1.86 | 0 | 0.57 | 0.03 | 0.83 | 1.63 | 5.35 |
| Capital goods | | 2.75 | 0.01 | 0.79 | 0.03 | 1.2 | 2.27 | 7.21 |

*Source*: GTAP simulation.

**Table A3.2b Change in output relative to base: Full scenarios**

| | **Base** | AFTA | ANZ | CHN | IND | JPN | KOR | ALL |
|---|---|---|---|---|---|---|---|---|
| | $m | % | % | % | % | % | % | % |
| Land | 2261 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Unskilled labour | 12915 | 1.69 | 0.17 | 1.73 | 0.06 | 1.21 | 0.52 | 3.0 |
| Skilled labour | 4125 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Capital | 13117 | 3.8 | 0.36 | 4.26 | 0.16 | 4.23 | 2.02 | 13.46 |
| Natural resources | 1897 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rice | 4255 | 6.24 | -0.07 | -0.44 | -0.18 | 0.13 | -6.68 | -1.73 |
| Vegetables, fruit and nuts | 1582 | -2.30 | 0 | 0.75 | -0.25 | 0.1 | 31.56 | 28.53 |
| Other crops | 2600 | -2.18 | -0.14 | 0.1 | 1.31 | -0.27 | -10.31 | -11.67 |
| Livestock | 1325 | 0.89 | 0.25 | 1.81 | 0 | 1.33 | -1.6 | 2.24 |
| Forestry | 735 | 1.31 | 0.25 | 1 | 0.09 | 1 | -0.62 | 1.05 |
| Fishing | 1576 | 0.35 | 0 | 0.76 | 0 | 0.97 | 0.09 | 1.6 |
| Petroleum and coal products | 6390 | 0.11 | -0.03 | -0.26 | 0.03 | 0.2 | -0.44 | -0.74 |
| Meats | 2316 | 0.44 | -0.09 | 1.61 | 0.03 | 1.4 | 0.24 | 3.18 |
| Other processed agriculture | 4698 | -1.41 | -0.18 | 0.47 | -0.17 | 1.77 | -3.67 | -4.44 |
| Textiles | 4251 | 3.71 | 0.88 | 3.87 | -0.1 | 7.35 | 1.99 | 14.24 |
| Leather | 7544 | 3.51 | 0.96 | 9.86 | 0.11 | 7.58 | 3.87 | 22.46 |
| Wearing apparel | 5486 | 2.96 | 1.1 | 9.1 | 0.01 | 12.8 | 6.76 | 31.51 |
| Chemicals | 5370 | 3.28 | 0.27 | 3.95 | 0.09 | 1.91 | -0.06 | 6.42 |
| Metal manufactures | 928 | 5.87 | 0.26 | 2.09 | 0.29 | 2.56 | -0.84 | 6.24 |
| Wood & paper products | 3285 | 1.84 | 0.42 | 0.29 | 0.06 | 1.38 | -0.6 | 1.13 |
| Motor vehicles | 4191 | 0.59 | 0.16 | 1.76 | 0.03 | -4.98 | 0.07 | -3.76 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Mineral products | 3083 | 1.85 | 0.48 | 2.27 | 0.09 | 3.13 | 1.16 | 6.53 |
| Manufactures | 6017 | 5.88 | 0.5 | 4.82 | 0.35 | 3.54 | 0.49 | 12.03 |
| Electronics | 3457 | 5.04 | 0.1 | 3.8 | 0.11 | 3.41 | 1.13 | 10.87 |
| Transport & communications | 2986 | 8.13 | 0.14 | 6.98 | 0.15 | 1.86 | 2.42 | 14.83 |
| Business services | 5346 | 1.45 | 0.06 | 0.93 | -0.01 | 1.44 | 0.02 | 2.61 |
| Services nes | 18755 | 2.56 | 0.24 | 2.85 | 0.11 | 2.83 | 1.46 | 8.86 |
| Capital goods | 15073 | 3.80 | 0.36 | 4.26 | 0.16 | 4.23 | 2.02 | 13.46 |

*Source*: GTAP simulation.

**Table A3.3a Absolute change in output relative to base: Partial scenarios**

| | AFTA | ANZ | CHN | IND | JPN | KOR | ALL |
|---|---|---|---|---|---|---|---|
| | $m | $m | $m | $m | $m | $m | $m |
| Land | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Unskilled labour | 155 | 1 | 25 | 1 | 48 | 45 | 387 |
| Skilled labour | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Capital | 361 | 1 | 104 | 4 | 157 | 298 | 946 |
| Natural resources | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rice | 215 | 0 | -2 | 2 | -1 | -280 | -77 |
| Vegetables, fruit and nuts | -30 | 0 | 1 | -2 | 1 | 499 | 471 |
| Other crops | -49 | 0 | 1 | 12 | -12 | -264 | -295 |
| Livestock | 11 | 0 | 3 | 0 | 9 | -23 | 6 |
| Forestry | 6 | 0 | 2 | 0 | -2 | -1 | 10 |
| Fishing | 4 | 0 | 3 | 0 | 6 | 0 | 17 |
| Petroleum and coal products | 1 | 0 | 8 | 1 | -15 | -13 | -8 |
| Meats | 9 | -1 | 7 | 0 | 16 | 6 | 51 |
| Other processed agriculture | -63 | -1 | 9 | 7 | 55 | -158 | -156 |
| Textiles | 103 | 1 | 31 | -12 | 172 | 78 | 399 |
| Leather | 161 | 2 | 82 | -14 | 29 | 219 | 517 |
| Wearing apparel | 107 | 3 | 61 | -12 | 470 | 239 | 925 |
| Chemicals | 134 | 1 | 26 | 7 | -2 | 20 | 209 |
| Metal manufactures | 38 | 0 | 6 | 2 | -6 | 5 | 49 |
| Wood & paper products | 38 | 0 | 13 | 0 | -9 | 2 | 57 |
| Motor vehicles | 20 | 0 | -36 | 0 | 11 | -120 | -80 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Mineral products | 50 | 0 | -3 | -2 | 32 | 47 | 138 |
| Manufactures | 247 | 1 | 58 | -1 | -6 | 93 | 415 |
| Electronics | 117 | 1 | 33 | 2 | 4 | 66 | 238 |
| Transport & communications | 204 | 0 | 11 | 0 | 9 | 80 | 291 |
| Business services | 58 | 1 | 22 | -2 | 4 | 21 | 133 |
| Services nes | 349 | 0 | 107 | 6 | 156 | 306 | 1003 |
| Capital goods | 415 | 2 | 119 | 5 | 181 | 342 | 1087 |

*Source*: GTAP simulation.

**Table A3.3b Absolute change in output relative to base: Full scenarios**

| | AFTA | ANZ | CHN | IND | JPN | KOR | ALL |
|---|---|---|---|---|---|---|---|
| | $m | $m | $m | $m | $m | $m | $m |
| Land | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Unskilled labour | 218 | 22 | 223 | 8 | 156 | 67 | 387 |
| Skilled labour | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Capital | 498 | 47 | 559 | 21 | 555 | 265 | 1766 |
| Natural resources | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rice | 265 | -3 | -19 | -8 | 6 | -284 | -74 |
| Vegetables, fruit and nuts | -36 | 0 | 12 | -4 | 2 | 499 | 451 |
| Other crops | -57 | -4 | 3 | 34 | -7 | -268 | -303 |
| Livestock | 12 | 3 | 24 | 0 | 18 | -21 | 30 |
| Forestry | 10 | 2 | 7 | 1 | 7 | -5 | 8 |
| Fishing | 6 | 0 | 12 | 0 | 15 | 1 | 25 |
| Petroleum and coal products | 7 | -2 | -17 | 2 | 13 | -28 | -47 |
| Meats | 10 | -2 | 37 | 1 | 32 | 6 | 74 |
| Other processed agriculture | -66 | -8 | 22 | -8 | 83 | -172 | -209 |
| Textiles | 158 | 37 | 165 | -4 | 312 | 85 | 605 |
| Leather | 265 | 72 | 744 | 8 | 572 | 292 | 1694 |
| Wearing apparel | 162 | 60 | 499 | 1 | 702 | 371 | 1729 |
| Chemicals | 176 | 14 | 212 | 5 | 103 | -3 | 345 |
| Metal manufactures | 54 | 2 | 19 | 3 | 24 | -8 | 58 |
| Wood & paper | 60 | 14 | 10 | 2 | 45 | -20 | 37 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| products | | | | | | | |
| Motor vehicles | 25 | 7 | 74 | 1 | -209 | 3 | -158 |
| Mineral products | 57 | 15 | 70 | 3 | 96 | 36 | 201 |
| Manufactures | 354 | 30 | 290 | 21 | 213 | 29 | 724 |
| Electronics | 174 | 3 | 131 | 4 | 118 | 39 | 376 |
| Transport & communications | 243 | 4 | 208 | 4 | 56 | 72 | 443 |
| Business services | 78 | 3 | 50 | -1 | 77 | 1 | 140 |
| Services nes | 480 | 45 | 535 | 21 | 531 | 274 | 1662 |
| Capital goods | 573 | 54 | 642 | 24 | 638 | 304 | 2029 |

*Source*: GTAP simulation.

**Table A3.4a Change in Vietnam exports relative to base: Partial scenarios**

| | **Base** | AFTA | ANZ | CHN | IND | JPN | KOR | ALL |
|---|---|---|---|---|---|---|---|---|
| | $m | % | % | % | % | % | % | % |
| Rice | 1003 | 21.35 | -0.03 | 0.09 | 0.23 | -1.39 | -15.29 | 3.8 |
| Vegetables, fruit and nuts | 501 | -3.77 | 0.01 | -0.18 | -0.26 | -1.14 | 163.66 | 162.2 |
| Other crops | 1127 | -0.99 | 0.02 | -0.04 | 1.84 | -1.12 | -14.17 | -14.0 |
| Livestock | 77 | 0.66 | 0.17 | -0.15 | -0.17 | -1.32 | -15.72 | -17.3 |
| Forestry | 44 | -0.46 | 0.01 | -0.01 | 0.08 | -0.07 | 0.12 | -0.2 |
| Fishing | 198 | 0.38 | 0.02 | -0.14 | 0.00 | -1.15 | 0.25 | -1.2 |
| Petroleum and coal products | 5588 | 2.95 | 0.00 | 0.09 | 0.13 | -0.34 | 0.81 | 3.2 |
| Meats | 59 | -4.78 | -0.09 | 0.38 | -0.33 | -2.63 | -13.93 | -20.9 |
| Other processed agriculture | 2544 | 3.30 | 0.12 | 0.20 | 0.37 | 2.31 | -3.08 | 2.7 |
| Textiles | 1512 | 3.39 | 0.03 | 0.76 | -0.41 | 4.88 | 5.97 | 14.9 |
| Leather | 5398 | 2.01 | 0.02 | 1.01 | -0.16 | 0.53 | 3.04 | 6.8 |
| Wearing apparel | 4032 | 1.91 | 0.06 | 1.48 | -0.25 | 11.19 | 4.84 | 20.2 |
| Chemicals | 1147 | 4.15 | 0.02 | 0.48 | 0.82 | -0.92 | 0.34 | 5.0 |
| Metal manufactures | 458 | 5.33 | 0.02 | 1.12 | 0.62 | -1.07 | 0.68 | 6.7 |
| Wood & paper products | 1773 | 2.22 | 0.02 | 0.57 | 0.01 | -0.70 | 0.24 | 2.5 |
| Motor vehicles | 431 | 2.47 | 0.01 | 2.65 | -0.09 | -1.03 | 2.75 | 6.5 |
| Mineral products | 406 | 5.24 | 0.02 | 0.62 | -0.09 | -0.85 | 2.41 | 7.3 |
| Manufactures | 2045 | 6.81 | 0.03 | 1.54 | 0.07 | -0.67 | 3.16 | 11.1 |
| Electronics | 1096 | 5.65 | 0.03 | 1.97 | 0.11 | -0.81 | 3.28 | 10.6 |
| Transport & communications | 743 | 7.16 | 0.01 | 0.16 | 0.05 | -0.27 | 2.45 | 8.6 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Business services | 1375 | 0.53 | 0.02 | 0.32 | -0.10 | -1.15 | -1.10 | -1.2 |
| Services nes | 707 | 0.53 | 0.01 | 0.47 | -0.02 | -0.98 | -0.31 | -0.1 |
| Total | 3.39 | 0.03 | 0.71 | 0.08 | 1.45 | 3.21 | 6.65 | 9.0 |

*Source*: GTAP simulation.

**Table A3.4b Change in Vietnam exports relative to base: Full scenarios**

| | **Base** | AFTA | ANZ | CHN | IND | JPN | KOR | ALL |
|---|---|---|---|---|---|---|---|---|
| | $m | % | % | % | % | % | % | % |
| Rice | 1003 | 26.38 | -0.17 | -1.64 | -0.36 | -2.06 | -15.43 | 5.98 |
| Vegetables, fruit and nuts | 501 | -4.51 | -0.08 | 4.86 | -0.5 | -2.01 | 164.07 | 163.3 |
| Other crops | 1127 | -1.09 | -0.12 | 0.53 | 4.03 | -1.29 | -14.44 | -12.63 |
| Livestock | 77 | 0.15 | 0.57 | 1.71 | -0.38 | -1.46 | -15.96 | -16.54 |
| Forestry | 44 | -0.72 | -0.53 | 14.77 | 0.43 | -0.67 | -0.08 | 12.15 |
| Fishing | 198 | 0.54 | 0.02 | -1.02 | -0.03 | -0.14 | 1.88 | 0.83 |
| Petroleum and coal products | 5588 | 3.46 | -0.06 | 2.51 | 0.22 | -0.17 | 0.63 | 4.46 |
| Meats | 59 | -5.39 | -0.35 | 3.65 | -0.26 | -2.8 | -15.07 | -22.56 |
| Other processed agriculture | 2544 | 3.7 | 0.29 | 0.83 | -0.13 | 3.02 | -3.5 | 2.26 |
| Textiles | 1512 | 5.15 | 1.27 | 8.08 | -0.06 | 8.59 | 7.78 | 26.61 |
| Leather | 5398 | 3.27 | 1.09 | 10.73 | 0.16 | 7.59 | 3.98 | 23.85 |
| Wearing apparel | 4032 | 2.94 | 1.42 | 11.27 | -0.02 | 16.3 | 8.06 | 37.91 |
| Chemicals | 1147 | 6.46 | 0.63 | 7.57 | 0.56 | 0.91 | -0.15 | 12.42 |
| Metal manufactures | 458 | 8.17 | 0.52 | 2.38 | 0.64 | 2.66 | -0.94 | 9.62 |
| Wood & paper products | 1773 | 3.57 | 0.9 | 0.14 | 0.11 | 1.07 | -0.48 | 2.81 |
| Motor vehicles | 431 | 8.2 | 0.08 | -0.44 | -0.35 | 12.42 | -3.56 | 11.98 |
| Mineral products | 406 | 7.13 | 1.36 | 2.46 | 0.22 | 0.79 | 1.7 | 9.88 |
| Manufactures | 2045 | 9.93 | 1.1 | 8.08 | 0.91 | 4.82 | 1.57 | 22.85 |
| Electronics | 1096 | 3.26 | -0.12 | 6.19 | 0.57 | 2.6 | 2.65 | 16.55 |
| Transport & communications | 743 | 8.29 | -0.04 | 6.48 | 0.15 | 0.36 | 2.11 | 12.52 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Business services | 1375 | 0.77 | -0.2 | -1.29 | 1.93 | -0.04 | -1.98 | -4.46 |
| Services nes | 707 | 0.95 | -0.22 | -0.77 | -0.07 | 0.26 | -1.07 | -2.44 |
| Total | 3.39 | 4.7 | 0.56 | 5.31 | 0.26 | 4.43 | 3.42 | 16.19 |

*Source*: GTAP simulation.

**Table A3.5a Absolute change in exports relative to base: Partial scenarios**

| | AFTA | ANZ | CHN | IND | JPN | KOR | ALL |
|---|---|---|---|---|---|---|---|
| | $m | $m | $m | $m | $m | $m | $m |
| Rice | 214 | 0 | 1 | 2 | -14 | -153 | 38 |
| Vegetables, fruit and nuts | -19 | 0 | -1 | -1 | -6 | 819 | 812 |
| Other crops | -11 | 0 | 0 | 21 | -13 | -160 | -158 |
| Livestock | 1 | 0 | 0 | 0 | -1 | -12 | -13 |
| Forestry | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Fishing | 1 | 0 | 0 | 0 | -2 | 0 | -2 |
| Petroleum and coal products | 165 | 0 | 5 | 7 | -19 | 45 | 181 |
| Meats | -3 | 0 | 0 | 0 | -2 | -8 | -12 |
| Other processed agriculture | 84 | 3 | 5 | 9 | 59 | -78 | 69 |
| Textiles | 51 | 0 | 11 | -6 | 74 | 90 | 225 |
| Leather | 108 | 1 | 55 | -9 | 29 | 164 | 368 |
| Wearing apparel | 77 | 2 | 60 | -10 | 451 | 195 | 813 |
| Chemicals | 48 | 0 | 6 | 9 | -11 | 4 | 57 |
| Metal manufactures | 24 | 0 | 5 | 3 | -5 | 3 | 31 |
| Wood & paper products | 39 | 0 | 10 | 0 | -12 | 4 | 44 |
| Motor vehicles | 11 | 0 | 11 | 0 | -4 | 12 | 28 |
| Mineral products | 21 | 0 | 3 | 0 | -3 | 10 | 30 |
| Manufactures | 139 | 1 | 31 | 1 | -14 | 65 | 227 |
| Electronics | 62 | 0 | 22 | 1 | -9 | 36 | 116 |
| Transport & | 53 | 0 | 1 | 0 | -2 | 18 | 64 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| communications | | | | | | | |
| Business services | 7 | 0 | 4 | -1 | -16 | -15 | -17 |
| Services nes | 4 | 0 | 3 | 0 | -7 | -2 | -1 |
| Total | 1094 | 10 | 229 | 26 | 468 | 1036 | 2904 |

*Source*: GTAP simulation.

**Table A3.5b Absolute change in exports relative to base: Full scenarios**

| | AFTA | ANZ | CHN | IND | JPN | KOR | ALL |
|---|---|---|---|---|---|---|---|
| | $m | $m | $m | $m | $m | $m | $m |
| Rice | 265 | -2 | -16 | -4 | -21 | -155 | 60 |
| Vegetables, fruit and nuts | -23 | 0 | 24 | -3 | -10 | 821 | 818 |
| Other crops | -12 | -1 | 6 | 45 | -15 | -163 | -142 |
| Livestock | 0 | 0 | 1 | 0 | -1 | -12 | -13 |
| Forestry | 0 | 0 | 7 | 0 | 0 | 0 | 5 |
| Fishing | 1 | 0 | -2 | 0 | 0 | 4 | 2 |
| Petroleum and coal products | 193 | -3 | 140 | 12 | -9 | 35 | 249 |
| Meats | -3 | 0 | 2 | 0 | -2 | -9 | -13 |
| Other processed agriculture | 94 | 7 | 21 | -3 | 77 | -89 | 58 |
| Textiles | 78 | 19 | 122 | -1 | 130 | 118 | 402 |
| Leather | 177 | 59 | 579 | 9 | 410 | 215 | 1287 |
| Wearing apparel | 119 | 57 | 454 | -1 | 657 | 325 | 1529 |
| Chemicals | 74 | 7 | 87 | 6 | 10 | -2 | 142 |
| Metal manufactures | 37 | 2 | 11 | 3 | 12 | -4 | 44 |
| Wood & paper products | 63 | 16 | 2 | 2 | 19 | -9 | 50 |
| Motor vehicles | 35 | 0 | -2 | -2 | 53 | -15 | 52 |
| Mineral products | 29 | 6 | 10 | 1 | 3 | 7 | 40 |
| Manufactures | 203 | 22 | 165 | 19 | 99 | 32 | 467 |
| Electronics | 36 | -1 | 68 | 6 | 28 | 29 | 181 |
| Transport & communications | 62 | 0 | 48 | 1 | 3 | 16 | 93 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Business services | 11 | -3 | -18 | 27 | -1 | -27 | -61 |
| Services nes | 7 | -2 | -5 | 0 | 2 | -8 | -17 |
| Total | 1516 | 181 | 1713 | 84 | 1429 | 1103 | 5223 |

*Source*: GTAP simulation.

**Table A3.6 Change in Vietnam's bilateral exports: Full ALL scenario (per cent)**

| | EU25 | USA | JPN | KOR | AUS | NZL | EFT | ODV | CHN | CHL | IND | RUS | TUR | IDN | MYS | PHL | THA | SGP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Rice | -42 | -46 | -41 | -57 | -40 | -41 | -40 | -43 | -37 | -37 | -41 | -33 | -41 | 38 | -18 | 168 | 252 | - |
| Vegetables, fruit and nuts | -60 | -61 | -57 | 3692 | -58 | -60 | -56 | -59 | -28 | -58 | -62 | -58 | -58 | -48 | -40 | -64 | -53 | - |
| Other crops | -28 | -28 | -20 | -16 | -27 | -27 | -28 | -28 | 68 | -29 | 137 | -27 | -27 | -22 | 104 | -6 | -30 | - |
| Livestock | -27 | -26 | -20 | 14 | -27 | -28 | -28 | -29 | -13 | -29 | -23 | -28 | -28 | -23 | -14 | -31 | -23 | - |
| Forestry | -10 | -10 | -6 | 11 | -9 | -9 | -10 | -11 | 23 | -12 | 8 | -10 | -10 | -8 | -2 | 5 | 20 | |
| Fishing | -9 | -9 | -2 | 40 | -9 | -9 | -7 | -9 | 1 | -10 | 71 | -10 | -11 | 5 | 1 | 6 | -3 | |
| Petroleum and coal products | -2 | -3 | -1 | 36 | 0 | -1 | -2 | -2 | 1 | -3 | 203 | -1 | -3 | -3 | 30 | 28 | 5 | |
| Meats | -35 | -35 | 6 | 26 | -34 | -19 | -35 | -35 | -23 | -35 | 161 | -34 | -35 | -34 | -30 | -64 | 10 | - |
| Other processed agriculture | -9 | -9 | 1 | 48 | -8 | -7 | -9 | -9 | 20 | -9 | -4 | -8 | -9 | 10 | -18 | -1 | 48 | |
| Textiles | 12 | 12 | 66 | 111 | 155 | 97 | 12 | 11 | 72 | 13 | 161 | 13 | 12 | 7 | -4 | 13 | 86 | |
| Leather | 15 | 16 | 221 | 166 | 146 | 133 | 15 | 15 | 241 | 17 | 21 | 17 | 13 | 42 | -14 | -1 | 62 | |
| Wearing apparel | 26 | 24 | 130 | 204 | 442 | 266 | 26 | 25 | 124 | 27 | 36 | 27 | 26 | 20 | -20 | 8 | -2 | |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chemicals | 2 | 2 | 2 | 22 | 32 | 28 | 2 | 2 | 33 | 2 | 66 | 2 | 2 | 9 | 13 | 21 | 43 |
| Metal manufactures | 3 | 3 | 3 | 34 | 35 | 27 | 3 | 3 | 55 | 3 | 216 | 3 | 3 | -5 | 23 | 18 | 56 |
| Wood & paper products | 0 | 0 | 1 | 23 | 29 | 34 | 0 | 0 | 3 | 0 | 112 | 0 | 0 | 27 | 20 | 14 | 61 |
| Motor vehicles | 12 | 12 | 12 | 73 | 47 | 48 | 12 | 12 | 137 | 13 | 24 | 12 | 13 | 3 | -42 | 26 | 25 |
| Mineral products | 4 | 4 | 5 | 64 | 28 | 24 | 5 | 5 | 111 | 5 | 68 | 5 | 5 | 31 | 4 | 14 | 95 |
| Manufactures | 8 | 8 | 9 | 91 | 63 | 43 | 8 | 9 | 102 | 9 | 209 | 8 | 9 | 15 | 13 | 19 | 46 |
| Electronics | 8 | 8 | 7 | 57 | 14 | 12 | 8 | 8 | 41 | 8 | 64 | 7 | 8 | 10 | 22 | 10 | 25 |
| Transport & communications | 27 | 27 | 27 | 29 | 27 | 27 | 27 | 27 | 28 | 27 | 28 | 27 | 27 | 32 | 34 | 30 | 35 |
| Business services | -6 | -6 | -6 | -5 | -6 | -6 | -6 | -6 | -6 | -6 | -6 | -6 | -6 | -3 | -2 | -3 | -1 |
| Services nes | -4 | -4 | -4 | 18 | -4 | -4 | -4 | -4 | -3 | -4 | 4 | -4 | -4 | 9 | 2 | -4 | 3 |

*Source*: GTAP simulation.

**Table A3.7 Absolute change in Vietnam's bilateral exports: Full ALL scenario ($ million)**

| | EU25 | USA | JPN | KOR | AUS | NZL | EFT | ODV | CHN | CHL | IND | RUS | TUR | IDN | MYS | PHL | THA | SGP | XAS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Rice | -8 | 0 | -5 | 0 | 0 | 0 | -2 | 0 | -3 | 0 | 0 | -12 | -1 | 10 | -24 | 291 | 0 | -5 | 0 |
| Vegetables, fruit and nuts | -57 | -96 | -5 | 997 | -29 | -2 | -2 | -23 | -32 | 0 | 0 | -5 | 0 | -2 | -2 | -1 | -2 | -5 | -5 |
| Other crops | -148 | -44 | -8 | -5 | -4 | -1 | -9 | -12 | 23 | -1 | 45 | -11 | -1 | -2 | 21 | -1 | -4 | -6 | -1 |
| Livestock | -6 | -5 | -1 | 0 | 0 | 0 | 0 | -3 | -1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | -2 | -1 | 0 |
| Forestry | 0 | 0 | -1 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Fishing | -2 | -2 | -1 | 4 | -1 | 0 | 0 | -5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Petroleum and coal products | 0 | -10 | -3 | 30 | 4 | 0 | 0 | 0 | 18 | 0 | 22 | 0 | 0 | -10 | 44 | 2 | 10 | 38 | 0 |
| Meats | -3 | -1 | 0 | 0 | 0 | 0 | 0 | -2 | -8 | 0 | 0 | 0 | 0 | 0 | -1 | 0 | 0 | 0 | 0 |
| Other processed agriculture | -31 | -55 | 10 | 81 | -8 | 0 | -2 | -13 | 32 | 0 | 0 | -2 | 0 | 0 | -9 | 0 | 16 | -26 | -4 |
| Textiles | 33 | 75 | 125 | 105 | 26 | 2 | 1 | 10 | 52 | 0 | 3 | 2 | 1 | 0 | -1 | 1 | 11 | 2 | 6 |
| Leather | 559 | 160 | 384 | 75 | 72 | 12 | 18 | 34 | 147 | 2 | 1 | 3 | 4 | 3 | -2 | 0 | 6 | 6 | 0 |
| Wearing apparel | 238 | 575 | 753 | 69 | 80 | 8 | 6 | 37 | 15 | 1 | 0 | 7 | 2 | 0 | -2 | 0 | 0 | 4 | 1 |

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chemicals | 4 | 1 | 3 | 12 | 11 | 1 | 0 | 1 | 86 | 0 | 7 | 0 | 0 | 2 | 5 | 5 | 13 | 1 | 2 |
| Metal manufactures | 4 | 1 | 2 | 3 | 4 | 1 | 0 | 1 | 9 | 0 | 4 | 0 | 0 | 0 | 5 | 0 | 13 | 0 | 1 |
| Wood & paper products | -2 | -2 | 5 | 10 | 19 | 6 | 0 | 0 | 1 | 0 | 4 | 0 | 0 | 2 | 5 | 0 | 6 | -1 | 0 |
| Motor vehicles | 27 | 2 | 5 | 1 | 2 | 0 | 1 | 5 | 5 | 0 | 0 | 0 | 0 | 0 | -3 | 13 | 3 | -1 | 1 |
| Mineral products | 9 | 3 | 2 | 11 | 9 | 1 | 0 | 2 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 |
| Manufactures | 29 | 12 | 79 | 47 | 23 | 13 | 1 | 9 | 156 | 0 | 25 | 0 | 0 | 3 | 6 | 3 | 104 | 2 | 2 |
| Electronics | 9 | 6 | 22 | 37 | 1 | 0 | 0 | 2 | 51 | 0 | 1 | 1 | 0 | 1 | 7 | 1 | 53 | 2 | 0 |
| Transport & communications | 94 | 31 | 11 | 6 | 4 | 1 | 7 | 6 | 7 | 1 | 3 | 3 | 1 | 1 | 2 | 0 | 1 | 3 | 0 |
| Business services | -45 | -11 | -4 | -1 | -1 | 0 | -2 | -4 | -3 | 0 | -1 | -1 | 0 | 0 | 0 | 0 | 0 | -2 | 0 |
| Services nes | -12 | -7 | -2 | 2 | 0 | 0 | 0 | 0 | -1 | 0 | 0 | -1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Total | 693 | 636 | 1372 | 1485 | 211 | 41 | 18 | 44 | 563 | 4 | 116 | -16 | 6 | 9 | 50 | 315 | 238 | 12 | 3 |

*Source*: GTAP simulation.

**Table A3.8a Change in Vietnam imports relative to base: Partial scenarios**

| | **Base** | AFTA | ANZ | CHN | IND | JPN | KOR | ALL |
|---|---|---|---|---|---|---|---|---|
| | $m | % | % | % | % | % | % | % |
| Rice | 15 | 19 | 0 | 45 | 1 | 2 | 16 | 102 |
| Vegetables, fruit and nuts | 219 | 2 | 0 | 0 | 0 | 1 | 12 | 17 |
| Other crops | 1045 | 5 | 0 | 0 | 1 | 1 | 5 | 12 |
| Livestock | 79 | 1 | 0 | 0 | 0 | 2 | 13 | 17 |
| Forestry | 190 | 2 | 0 | 0 | 0 | 0 | 1 | 4 |
| Fishing | 31 | 1 | 0 | 2 | 0 | 3 | -1 | 6 |
| Petroleum and coal products | 3808 | 10 | 0 | 0 | 0 | 1 | 5 | 13 |
| Meats | 55 | 5 | 1 | 0 | 0 | 3 | 11 | 23 |
| Other processed agriculture | 1149 | 16 | 1 | 0 | 0 | 1 | 2 | 21 |
| Textiles | 3506 | 3 | 0 | 1 | 0 | 5 | 5 | 15 |
| Leather | 988 | 3 | 0 | 1 | 0 | 1 | 5 | 11 |
| Wearing apparel | 244 | 3 | 0 | 6 | 0 | 6 | 7 | 21 |
| Chemicals | 5731 | 2 | 0 | 0 | 0 | 1 | 1 | 5 |
| Metal manufactures | 2851 | 3 | 0 | 1 | 0 | 1 | 1 | 5 |
| Wood & paper products | 1179 | 4 | 0 | 1 | 0 | 1 | 2 | 8 |
| Motor vehicles | 2632 | 4 | 0 | 1 | 0 | 1 | 7 | 12 |
| Mineral products | 410 | 8 | 0 | 4 | 0 | 2 | 2 | 16 |
| Manufactures | 6866 | 3 | 0 | 1 | 0 | 1 | 2 | 7 |
| Electronics | 1637 | 3 | 0 | 1 | 0 | 1 | 2 | 7 |
| Transport & communications | 1026 | -3 | 0 | 0 | 0 | 1 | 0 | -1 |
| Business services | 1926 | 1 | 0 | 0 | 0 | 1 | 2 | 5 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Services nes | 1051 | 1 | 0 | 0 | 0 | 2 | 2 | 5 |
| Total | 36637 | 4 | 0 | 1 | 0 | 1 | 3 | 9 |

*Source*: GTAP simulation.

**Table A3.8b Change in Vietnam imports relative to base: Full scenarios**

| | **Base** | AFTA | ANZ | CHN | IND | JPN | KOR | ALL |
|---|---|---|---|---|---|---|---|---|
| | $m | % | % | % | % | % | % | % |
| Rice | 15 | 25 | 0 | 88 | 1 | 4 | 16 | 173 |
| Vegetables, fruit and nuts | 219 | 2 | 0 | 8 | 0 | 2 | 12 | 26 |
| Other crops | 1045 | 6 | 1 | 3 | 1 | 3 | 5 | 17 |
| Livestock | 79 | 1 | 0 | 3 | 0 | 3 | 13 | 23 |
| Forestry | 190 | 3 | 1 | 2 | 0 | 2 | 1 | 7 |
| Fishing | 31 | 1 | 1 | 7 | 0 | 5 | 0 | 14 |
| Petroleum and coal products | 3808 | 12 | 0 | 11 | 0 | 2 | 5 | 19 |
| Meats | 55 | 8 | 11 | 9 | 1 | 6 | 14 | 56 |
| Other processed agriculture | 1149 | 18 | 3 | 2 | 1 | 3 | 2 | 28 |
| Textiles | 3506 | 4 | 1 | 10 | 0 | 10 | 9 | 32 |
| Leather | 988 | 5 | 1 | 20 | 1 | 7 | 7 | 37 |
| Wearing apparel | 244 | 3 | 1 | 34 | 0 | 20 | 19 | 63 |
| Chemicals | 5731 | 3 | 0 | 4 | 0 | 3 | 2 | 11 |
| Metal manufactures | 2851 | 4 | 0 | 4 | 0 | 2 | 1 | 9 |
| Wood & paper products | 1179 | 6 | 1 | 4 | 0 | 3 | 2 | 14 |
| Motor vehicles | 2632 | 7 | 0 | 3 | 0 | 12 | 2 | 22 |
| Mineral products | 410 | 14 | 1 | 7 | 0 | 5 | 3 | 29 |
| Manufactures | 6866 | 4 | 0 | 4 | 0 | 4 | 2 | 13 |
| Electronics | 1637 | 4 | 0 | 4 | 0 | 2 | 3 | 12 |
| Transport & communications | 1026 | -3 | 0 | -2 | 0 | 2 | 0 | -1 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Business services | 1926 | 1 | 0 | 3 | 0 | 2 | 2 | 9 |
| Services nes | 1051 | 1 | 0 | 3 | 0 | 2 | 3 | 11 |
| Total | 36637 | 5 | 1 | 6 | 0 | 5 | 3 | 17 |

*Source*: GTAP simulation.

**Table A3.9a Absolute change in imports relative to base: Partial scenarios**

| | AFTA | ANZ | CHN | IND | JPN | KOR | ALL |
|---|---|---|---|---|---|---|---|
| | $m | $m | $m | $m | $m | $m | $m |
| Rice | 3 | 0 | 7 | 0 | 0 | 2 | 16 |
| Vegetables, fruit and nuts | 3 | 0 | 1 | 0 | 3 | 27 | 36 |
| Other crops | 47 | 0 | 4 | 8 | 13 | 49 | 123 |
| Livestock | 0 | 0 | 0 | 0 | 1 | 10 | 14 |
| Forestry | 3 | 0 | 1 | 0 | 1 | 2 | 8 |
| Fishing | 0 | 0 | 0 | 0 | 1 | 0 | 2 |
| Petroleum and coal products | 371 | 0 | 15 | 3 | 20 | 180 | 509 |
| Meats | 3 | 1 | 0 | 0 | 2 | 6 | 13 |
| Other processed agriculture | 184 | 7 | 3 | 2 | 16 | 26 | 242 |
| Textiles | 96 | 1 | 35 | -6 | 191 | 192 | 534 |
| Leather | 31 | 0 | 12 | -1 | 8 | 51 | 105 |
| Wearing apparel | 7 | 0 | 13 | 0 | 15 | 17 | 51 |
| Chemicals | 91 | 1 | 27 | 7 | 54 | 84 | 285 |
| Metal manufactures | 71 | 0 | 16 | 2 | 18 | 29 | 148 |
| Wood & paper products | 47 | 0 | 7 | 0 | 13 | 22 | 90 |
| Motor vehicles | 103 | 0 | 36 | 2 | 28 | 175 | 318 |
| Mineral products | 32 | 0 | 17 | 0 | 8 | 9 | 66 |
| Manufactures | 179 | 1 | 45 | 4 | 78 | 126 | 449 |
| Electronics | 48 | 0 | 15 | 1 | 14 | 38 | 120 |
| Transport & communications | -33 | 0 | 3 | 1 | 10 | -4 | -12 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Business services | 16 | 0 | 4 | 2 | 28 | 38 | 98 |
| Services nes | 12 | 0 | 2 | 1 | 17 | 21 | 57 |
| Total | 1315 | 11 | 264 | 29 | 539 | 1099 | 3272 |

*Source*: GTAP simulation.

**Table A3.9b Absolute change in imports relative to base: Full scenarios**

| | AFTA | ANZ | CHN | IND | JPN | KOR | ALL |
|---|---|---|---|---|---|---|---|
| | $m | $m | $m | $m | $m | $m | $m |
| Rice | 4 | 0 | 14 | 0 | 1 | 2 | 27 |
| Vegetables, fruit and nuts | 5 | 0 | 18 | 1 | 5 | 27 | 58 |
| Other crops | 60 | 6 | 32 | 9 | 26 | 51 | 178 |
| Livestock | 1 | 0 | 3 | 0 | 3 | 10 | 18 |
| Forestry | 5 | 1 | 4 | 0 | 4 | 1 | 12 |
| Fishing | 0 | 0 | 2 | 0 | 1 | 0 | 4 |
| Petroleum and coal products | 443 | 9 | 408 | 16 | 83 | 174 | 708 |
| Meats | 4 | 6 | 5 | 1 | 3 | 8 | 31 |
| Other processed agriculture | 211 | 39 | 25 | 7 | 36 | 28 | 316 |
| Textiles | 147 | 35 | 367 | 5 | 363 | 299 | 1111 |
| Leather | 46 | 14 | 195 | 6 | 70 | 64 | 369 |
| Wearing apparel | 8 | 3 | 82 | 0 | 49 | 46 | 153 |
| Chemicals | 149 | 23 | 214 | 15 | 185 | 104 | 615 |
| Metal manufactures | 106 | 8 | 101 | 5 | 69 | 32 | 259 |
| Wood & paper products | 68 | 8 | 45 | 2 | 36 | 26 | 164 |
| Motor vehicles | 181 | 9 | 89 | 4 | 316 | 51 | 575 |
| Mineral products | 57 | 2 | 30 | 1 | 20 | 14 | 120 |
| Manufactures | 253 | 30 | 268 | 15 | 260 | 126 | 863 |
| Electronics | 62 | 4 | 68 | 2 | 39 | 44 | 203 |
| Transport & communications | -34 | 3 | -16 | 0 | 21 | -1 | -7 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Business services | 19 | 6 | 52 | 3 | 39 | 48 | 174 |
| Services nes | 15 | 4 | 34 | 2 | 25 | 27 | 111 |
| Total | 1810 | 212 | 2041 | 95 | 1652 | 1180 | 6060 |

*Source*: GTAP simulation.

**Table A3.10a Change in Vietnam's bilateral imports: Partial ALL scenario (per cent)**

| | EU25 | USA | JPN | KOR | AUS | NZL | EFT | ODV | CHN | CHL | IND | RUS | TUR | IDN | MYS | PHL | THA | SGP | XAS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Rice | 7 | 7 | 52 | 65 | 111 | 7 | 6 | 7 | 191 | -2 | 2 | -5 | -1 | 77 | 99 | 153 | 89 | -50 | 1 |
| Vegetables, fruit and nuts | 16 | 17 | 30 | 155 | 19 | 17 | 16 | 16 | 45 | -12 | 72 | -12 | -12 | -1 | -23 | 30 | -2 | -67 | |
| Other crops | -1 | -1 | 9 | 57 | -1 | 1 | -1 | -1 | 16 | 0 | 13 | -1 | -1 | 30 | 85 | 11 | 10 | -30 | |
| Livestock | 16 | 16 | 22 | 59 | 16 | 17 | 16 | 16 | 44 | 19 | 34 | 18 | 18 | 20 | 22 | 23 | 20 | -16 | |
| Forestry | 4 | 4 | 6 | 17 | 4 | 4 | 4 | 4 | 30 | 8 | 33 | 7 | 7 | 22 | 2 | 33 | 20 | -5 | |
| Fishing | 1 | 1 | 5 | 11 | 1 | 3 | 1 | 1 | 28 | 1 | 47 | 0 | 1 | 4 | -1 | 0 | 2 | -11 | |
| Petroleum and coal products | -52 | -51 | -50 | 156 | -52 | -34 | -52 | -51 | 65 | -67 | 66 | -67 | -67 | -32 | 20 | 80 | -2 | -68 | |
| Meats | 12 | 12 | 52 | 121 | 24 | 21 | 12 | 12 | 199 | 1 | 151 | 0 | 0 | 28 | 33 | 387 | 250 | -35 | 1 |
| Other processed agriculture | -31 | -31 | -22 | 15 | -26 | -14 | -31 | -31 | -16 | -36 | 4 | -36 | -36 | -14 | 64 | 342 | -4 | -42 | 2 |
| Textiles | -5 | -5 | 14 | 50 | -3 | -4 | -5 | -5 | 70 | -23 | 43 | -23 | -23 | 28 | 13 | 73 | 53 | -12 | |
| Leather | -5 | -5 | 19 | 52 | -2 | 0 | -5 | -5 | 150 | -17 | 30 | -17 | -17 | 12 | 119 | 55 | 40 | -2 | |
| Wearing apparel | -15 | -15 | 22 | 63 | -9 | -14 | -15 | -14 | 107 | -48 | 113 | -48 | -47 | 48 | 59 | 47 | -12 | -33 | |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chemicals | -1 | -1 | 8 | 17 | 2 | 19 | -1 | -1 | 10 | -4 | 15 | -4 | -4 | 12 | 17 | 19 | 18 | -2 |
| Metal manufactures | -4 | -4 | 2 | 32 | -1 | 8 | -4 | -4 | 18 | -9 | -2 | -9 | -9 | 7 | 24 | 42 | 23 | -6 |
| Wood & paper products | -11 | -11 | 0 | 62 | -10 | -10 | -11 | -11 | 73 | -19 | 32 | -19 | -19 | 18 | 13 | 128 | 26 | -19 |
| Motor vehicles | -28 | -28 | -25 | 180 | -19 | -22 | -28 | -28 | -29 | -41 | -38 | -41 | -41 | 185 | 72 | 60 | 114 | -33 |
| Mineral products | -13 | -13 | -7 | 32 | 2 | -3 | -13 | -13 | 31 | -19 | 28 | -19 | -19 | 35 | -2 | 62 | 66 | -15 |
| Manufactures | -5 | -5 | 2 | 37 | -4 | 0 | -5 | -5 | 30 | -10 | 9 | -10 | -10 | 22 | 34 | 22 | 58 | -2 |
| Electronics | -5 | -5 | -3 | 19 | -5 | -4 | -6 | -5 | 50 | -8 | 5 | -8 | -8 | 30 | 17 | -6 | 39 | 0 |
| Transport & communications | -1 | -1 | -1 | -3 | -1 | -1 | -1 | -1 | -1 | -1 | 0 | -1 | -1 | -4 | 1 | 1 | -3 | 26 |
| Business services | 5 | 5 | 5 | 2 | 5 | 5 | 5 | 5 | 8 | 9 | 10 | 9 | 9 | 4 | 6 | 9 | 6 | 2 |
| Services nes | 6 | 6 | 6 | 4 | 6 | 6 | 5 | 6 | 12 | 10 | 15 | 10 | 10 | 6 | 6 | 14 | 11 | 6 |

*Source*: GTAP simulation.

**Table A3.10b Change in Vietnam's bilateral imports: Full ALL scenario (per cent)**

| | EU25 | USA | JPN | KOR | AUS | NZL | EFT | ODV | CHN | CHL | IND | RUS | TUR | IDN | MYS | PHL | THA | SGP | XAS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Rice | -1 | -1 | 646 | 51 | 620 | 640 | -2 | -1 | 191 | -2 | 2 | -5 | -1 | 77 | 99 | 153 | 89 | -50 | 110 |
| Vegetables, fruit and nuts | -12 | -12 | 49 | 147 | 32 | 25 | -12 | -12 | 45 | -12 | 72 | -12 | -12 | -1 | -23 | 30 | -2 | -67 | 6 |
| Other crops | -1 | 0 | 94 | 66 | 14 | 9 | -1 | 0 | 16 | 0 | 13 | -1 | -1 | 30 | 85 | 11 | 10 | -30 | 75 |
| Livestock | 18 | 18 | 39 | 62 | 27 | 28 | 18 | 18 | 44 | 19 | 34 | 18 | 18 | 20 | 22 | 23 | 20 | -16 | 26 |
| Forestry | 7 | 7 | 12 | 21 | 8 | 7 | 7 | 8 | 30 | 8 | 33 | 7 | 7 | 22 | 2 | 33 | 20 | -5 | 26 |
| Fishing | 1 | 0 | 15 | 11 | 17 | 23 | 0 | 0 | 28 | 1 | 47 | 0 | 1 | 4 | -1 | 0 | 2 | -11 | 8 |
| Petroleum and coal products | -67 | -67 | -11 | 77 | -50 | 6 | -67 | -66 | 65 | -67 | 66 | -67 | -67 | -32 | 20 | 80 | -2 | -68 | 58 |
| Meats | 0 | 0 | 265 | 227 | 98 | 108 | 0 | 1 | 199 | 1 | 151 | 0 | 0 | 28 | 33 | 387 | 250 | -35 | 188 |
| Other processed agriculture | -36 | -36 | 27 | 8 | -3 | 19 | -36 | -36 | -16 | -36 | 4 | -36 | -36 | -14 | 64 | 342 | -4 | -42 | 239 |
| Textiles | -23 | -23 | 72 | 61 | 53 | 28 | -23 | -22 | 70 | -23 | 43 | -23 | -23 | 28 | 13 | 73 | 53 | -12 | 25 |
| Leather | -17 | -17 | 146 | 46 | 106 | 121 | -17 | -17 | 150 | -17 | 30 | -17 | -17 | 12 | 119 | 55 | 40 | -2 | 85 |
| Wearing apparel | -48 | -48 | 104 | 109 | 100 | -32 | -48 | -47 | 107 | -48 | 113 | -48 | -47 | 48 | 59 | 47 | -12 | -33 | 34 |

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chemicals | -4 | -4 | 34 | 26 | 20 | 85 | -4 | -4 | 10 | -4 | 15 | -4 | -4 | 12 | 17 | 19 | 18 | -2 | 9 |
| Metal manufactures | -9 | -9 | 22 | 27 | 12 | 40 | -9 | -8 | 18 | -9 | -2 | -9 | -9 | 7 | 24 | 42 | 23 | -6 | 3 |
| Wood & paper products | -19 | -19 | 55 | 61 | 23 | -9 | -19 | -18 | 73 | -19 | 32 | -19 | -19 | 18 | 13 | 128 | 26 | -19 | 35 |
| Motor vehicles | -41 | -41 | 371 | -35 | 0 | 30 | -41 | -41 | -29 | -41 | -38 | -41 | -41 | 185 | 72 | 60 | 114 | -33 | -1 |
| Mineral products | -19 | -19 | 31 | 49 | 68 | 47 | -19 | -19 | 31 | -19 | 28 | -19 | -19 | 35 | -2 | 62 | 66 | -15 | 11 |
| Manufactures | -10 | -10 | 32 | 30 | 0 | 22 | -10 | -10 | 30 | -10 | 9 | -10 | -10 | 22 | 34 | 22 | 58 | -2 | 7 |
| Electronics | -8 | -8 | -1 | 31 | 0 | 12 | -8 | -7 | 50 | -8 | 5 | -8 | -8 | 30 | 17 | -6 | 39 | 0 | 3 |
| Transport & communications | -1 | -1 | 0 | -2 | -1 | -1 | -1 | 0 | -1 | -1 | 0 | -1 | -1 | -4 | 1 | 1 | -3 | 26 | -4 |
| Business services | 9 | 9 | 9 | 7 | 9 | 9 | 9 | 10 | 8 | 9 | 10 | 9 | 9 | 4 | 6 | 9 | 6 | 2 | 5 |
| Services nes | 10 | 10 | 13 | 10 | 10 | 13 | 10 | 11 | 12 | 10 | 15 | 10 | 10 | 6 | 6 | 14 | 11 | 6 | 6 |

*Source*: GTAP simulation.

**Table A3.11a Absolute change in Vietnam's bilateral imports: Partial ALL scenario ($ million)**

| | EU25 | USA | JPN | KOR | AUS | NZL | EFT | ODV | CHN | CHL | IND | RUS | TUR | IDN | MYS | PHL | THA | SGP | XAS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Rice | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Vegetables, fruit and nuts | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 4 |
| Other crops | 0 | -1 | 1 | 4 | -1 | 0 | 0 | 0 | 3 | 0 | 46 | 0 | 0 | 1 | 51 | 1 | 4 | 17 | 0 |
| Livestock | 1 | 2 | 0 | 1 | 1 | 0 | 0 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Forestry | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 |
| Fishing | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Petroleum and coal products | -26 | -7 | -11 | 427 | -2 | 0 | -1 | -148 | -499 | 0 | -9 | -76 | -1 | -2 | 17 | 14 | 122 | 951 | -1 |
| Meats | 1 | 2 | 0 | 3 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 |
| Other processed agriculture | -70 | -23 | -10 | 2 | -23 | -9 | -2 | -8 | -44 | -4 | -7 | 0 | 0 | -8 | 37 | 89 | -7 | 348 | -2 |
| Textiles | -6 | -2 | 36 | 410 | 0 | 0 | 0 | -47 | 28 | 0 | 5 | 0 | 0 | 23 | 13 | 3 | 56 | 16 | 0 |
| Leather | -3 | -2 | 2 | 75 | 0 | 0 | 0 | -15 | 7 | 0 | 1 | 0 | 0 | 3 | 1 | 0 | 35 | 4 | 0 |
| Wearing apparel | -2 | -1 | 8 | 26 | 0 | -1 | 0 | -4 | 19 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 2 | 2 | 0 |

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chemicals | -6 | -2 | 40 | 102 | 1 | 0 | -1 | -7 | 19 | 0 | 26 | -1 | 0 | 6 | 25 | 3 | 53 | 26 | 0 |
| Metal manufactures | -6 | -4 | 8 | 68 | 0 | 0 | -1 | -10 | 59 | 0 | 1 | -10 | 0 | 1 | 31 | 2 | 16 | 3 | 0 |
| Wood & paper products | -13 | -11 | 0 | 46 | -2 | -3 | 0 | -11 | 14 | -1 | 0 | -3 | 0 | 22 | 10 | 4 | 21 | 28 | -8 |
| Motor vehicles | -193 | -115 | -77 | 526 | 0 | 0 | -1 | -60 | 117 | 0 | 0 | -12 | -5 | 13 | 6 | 1 | 127 | 1 | 0 |
| Mineral products | -6 | -1 | -2 | 7 | 0 | 0 | 0 | -2 | 24 | 0 | 0 | 0 | 0 | 1 | -2 | 1 | 47 | 0 | 0 |
| Manufactures | -56 | -11 | 32 | 250 | -9 | 0 | -30 | -38 | 101 | -1 | 1 | -5 | 0 | 19 | 33 | 5 | 128 | 31 | 0 |
| Electronics | -12 | -4 | -7 | 47 | -1 | 0 | 0 | -4 | 49 | 0 | 0 | 0 | 0 | 5 | 23 | 0 | 14 | 10 | 0 |
| Transport & communications | -5 | -2 | 0 | 0 | 0 | 0 | 0 | 0 | -1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Business services | 56 | 15 | 2 | 0 | 1 | 0 | 3 | 3 | 3 | 0 | 3 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 |
| Services nes | 22 | 12 | 4 | 0 | 1 | 0 | 1 | 1 | 8 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | -501 | -234 | 2115 | 1273 | 51 | 16 | -64 | -710 | 2291 | -8 | 94 | -158 | -10 | 225 | 311 | 140 | 623 | 1021 | -18 |

*Source*: GTAP simulation.

**Table A3.11b Absolute change in Vietnam's bilateral imports: Full ALL scenario ($ million)**

| | EU25 | USA | JPN | KOR | AUS | NZL | EFT | ODV | CHN | CHL | IND | RUS | TUR | IDN | MYS | PHL | THA | SGP | XAS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Rice | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Vegetables, fruit and nuts | 0 | -1 | 0 | 0 | 1 | 0 | 0 | 0 | 61 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | -2 |
| Other crops | 0 | 0 | 6 | 4 | 14 | 0 | 0 | 0 | 14 | 0 | 18 | 0 | 0 | 21 | 67 | 1 | 6 | 23 | 0 |
| Livestock | 2 | 2 | 0 | 2 | 2 | 1 | 0 | 7 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Forestry | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 3 |
| Fishing | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Petroleum and coal products | -34 | -8 | -3 | 210 | -2 | 0 | -1 | -191 | 632 | 0 | 11 | -98 | -1 | -4 | 6 | 8 | -14 | 500 | -2 |
| Meats | 0 | 0 | 2 | 5 | 9 | 4 | 0 | 0 | 6 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 2 | 1 | 0 |
| Other processed agriculture | -83 | -27 | 12 | 1 | -3 | 12 | -2 | -9 | -26 | -5 | 1 | 0 | 0 | -5 | 39 | 93 | -3 | 342 | -2 |
| Textiles | -30 | -8 | 189 | 494 | 3 | 0 | -2 | -225 | 597 | 0 | 10 | 0 | -1 | 23 | 10 | 4 | 53 | 11 | -1 |
| Leather | -11 | -7 | 15 | 67 | 8 | 0 | -1 | -53 | 311 | 0 | 8 | 0 | 0 | 2 | 2 | 0 | 33 | 5 | 0 |
| Wearing apparel | -8 | -2 | 36 | 45 | 1 | -2 | -1 | -13 | 98 | 0 | 0 | -1 | 0 | 1 | 0 | 1 | -1 | 1 | 0 |

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chemicals | -21 | -6 | 164 | 152 | 10 | 1 | -4 | -24 | 105 | 0 | 32 | -4 | 0 | 19 | 48 | 13 | 81 | 58 | -1 |
| Metal manufactures | -13 | -10 | 106 | 57 | 1 | 1 | -1 | -23 | 96 | 0 | -1 | -23 | 0 | 2 | 54 | 3 | 32 | 4 | 0 |
| Wood & paper products | -23 | -19 | 35 | 46 | 5 | -3 | 0 | -19 | 72 | -1 | 2 | -6 | 0 | 23 | 8 | 6 | 21 | 36 | -14 |
| Motor vehicles | -284 | -168 | 1124 | -102 | 0 | 0 | -1 | -88 | -107 | 0 | -1 | -18 | -7 | 105 | 8 | 1 | 135 | -1 | 0 |
| Mineral products | -9 | -1 | 9 | 10 | 1 | 0 | 0 | -4 | 32 | 0 | 0 | 0 | 0 | 3 | -1 | 2 | 79 | 1 | 0 |
| Manufactures | -109 | -21 | 407 | 203 | -1 | 1 | -58 | -71 | 243 | -2 | 6 | -10 | -1 | 27 | 43 | 8 | 181 | 30 | 0 |
| Electronics | -17 | -6 | -2 | 76 | 0 | 0 | 0 | -5 | 103 | 0 | 0 | 0 | 0 | 7 | 25 | -1 | 16 | 8 | 0 |
| Transport & communications | -3 | -1 | 0 | 0 | 0 | 0 | 0 | 0 | -1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | -1 | 0 |
| Business services | 101 | 28 | 4 | 1 | 1 | 0 | 6 | 6 | 5 | 0 | 4 | 1 | 1 | 0 | 1 | 0 | 1 | 2 | 0 |
| Services nes | 40 | 22 | 9 | 1 | 1 | 0 | 2 | 2 | 18 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 |

*Source*: GTAP simulation.

**Appendix to Chapter 4**

**Model E: OLS, n = 502 (22 x 23)**

**Dependent variable: ln_BiExports**

| | *Coefficient* | *Std. Error* | *t-ratio* | *p-value* |
|---|---|---|---|---|
| const | -10.0807 | 0.729428 | -13.8199 | <0.00001 *** |
| FTADum1 | 1.83074 | 0.182237 | 10.0459 | <0.00001 *** |
| FTADum2 | 1.00528 | 0.0982425 | 10.2326 | <0.00001 *** |
| FTADum3 | 0.824446 | 0.0943423 | 8.7389 | <0.00001 *** |
| IslandDum | -0.147071 | 0.0816763 | -1.8007 | 0.07237 * |
| ln_Distance | -0.869336 | 0.0515396 | -16.8673 | <0.00001 *** |
| ln_SDBilatExc | -0.526722 | 0.0750276 | -7.0204 | <0.00001 *** |
| ln_GDP_GDP | 1.71232 | 0.0395902 | 43.2512 | <0.00001 *** |
| ln_GDPSim | 0.883405 | 0.0409905 | 21.5514 | <0.00001 *** |
| ln_SurfaceSum | 0.161541 | 0.0304608 | 5.3033 | <0.00001 *** |
| ln_EaseSum | -0.381529 | 0.0484957 | -7.8673 | <0.00001 *** |

| | | | |
|---|---|---|---|
| Mean dependent var | 7.852200 | S.D. dependent var | 2.053208 |
| Sum squared resid | 268.2240 | S.E. of regression | 0.739108 |
| R-squared | 0.873003 | Adjusted R-squared | 0.870416 |
| F(10, 491) | 337.5227 | P-value(F) | 8.8e-213 |
| Log-likelihood | -554.9859 | Akaike criterion | 1131.972 |
| Schwarz criterion | 1178.376 | Hannan-Quinn | 1150.178 |

**Model I: OLS, n = 502 (22 x 23)**

**Dependent variable: ln_BiImports**

| | *Coefficient* | *Std. Error* | *t-ratio* | *p-value* |
|---|---|---|---|---|
| Const | -10.2855 | 0.725247 | -14.1820 | <0.00001 *** |
| FTADum1 | 1.7769 | 0.180302 | 9.8551 | <0.00001 *** |
| FTADum2 | 0.921228 | 0.0953373 | 9.6628 | <0.00001 *** |
| FTADum3 | 0.87473 | 0.0943261 | 9.2735 | <0.00001 *** |
| ln_Distance | -0.876056 | 0.0514369 | -17.0317 | <0.00001 *** |
| ln_SDBilatExc | -0.563621 | 0.0744066 | -7.5749 | <0.00001 *** |
| ln_GDP_GDP | 1.71727 | 0.0395857 | 43.3809 | <0.00001 *** |
| ln_GDPSim | 0.8865 | 0.0409822 | 21.6314 | <0.00001 *** |
| ln_SurfaceSum | 0.163109 | 0.030398 | 5.3658 | <0.00001 *** |
| ln_EaseSum | -0.366753 | 0.0479503 | -7.6486 | <0.00001 *** |

| | | | |
|---|---|---|---|
| Mean dependent var | 7.849970 | S.D. dependent var | 2.055661 |
| Sum squared resid | 268.7360 | S.E. of regression | 0.739061 |
| R-squared | 0.873064 | Adjusted R-squared | 0.870742 |
| F(9, 492) | 375.9961 | P-value(F) | 3.9e-214 |
| Log-likelihood | -555.4647 | Akaike criterion | 1130.929 |
| Schwarz criterion | 1173.115 | Hannan-Quinn | 1147.480 |

**Model Met: OLS, n = (22 x 23)**

**Dependent variable: ln_MET**

| | *Coefficient* | *Std. Error* | *t-ratio* | *p-value* |
|---|---|---|---|---|
| const | -10.8208 | 1.22753 | -8.8151 | <0.00001 *** |
| FTADum1 | 0.811035 | 0.293312 | 2.7651 | <0.00592 *** |
| FTADum2 | 1.31742 | 0.163844 | 8.0407 | <0.00001 *** |
| FTADum3 | 0.320023 | 0.162026 | 1.9751 | <0.04885 ** |
| ln_Distance | -1.21354 | 0.0850273 | -14.2723 | <0.00001 *** |
| ln_SDBilatExc | -0.526452 | 0.120593 | -4.3655 | 0.00002 *** |
| ln_GDP_GDP | 1.84523 | 0.0647607 | 28.4930 | <0.00001 *** |
| ln_GDPSim | 1.8043 | 0.0695618 | 16.9695 | <0.00001 *** |
| ln_EaseSum | -0.116692 | 0.0670328 | -1.7408 | 0.08239 * |

| | | | |
|---|---|---|---|
| Mean dependent var | 4.482686 | S.D. dependent var | 2.175166 |
| Sum squared resid | 634.2354 | S.E. of regression | 1.178059 |
| R-squared | 0.711721 | Adjusted R-squared | 0.706675 |
| F(8, 493) | 141.0338 | P-value(F) | 2.7e-118 |
| Log-likelihood | -733.0440 | Akaike criterion | 1484.088 |
| Schwarz criterion | 1521.386 | Hannan-Quinn | 1498.767 |

| | *Coefficient* | *Std. Error* | *t-ratio* | *p-value* |
|---|---|---|---|---|
| const | -3.05906 | 1.05749 | -2.893 | <0.0040 *** |
| FTADum1 | 0.842994 | 0.297697 | 2.832 | <0.0048 *** |
| FTADum2 | 1.16380 | 0.160351 | 7.258 | <1.70e-012 *** |
| FTADum3 | 0.148531 | 0.158422 | 0.9376 | <0.3490 |
| ln_Distance | -1.13234 | 0.0844697 | -13.41 | <8.62e-035 *** |
| ln_SDBilatExc | -0.641957 | 0.121215 | -5.296 | 1.84e-07 *** |
| ln_VoP_VoP | 0.773682 | 0.0275812 | 28.05 | <2.02e-101 *** |
| ln_VoPSim | 0.0583710 | 0.0457288 | 1.276 | <0.2024 |

| | | | | |
|---|---|---|---|---|
| ln_EaseSum | -0.0827107 | 0.0668844 | -1.237 | 0.2169 |

| | | | |
|---|---|---|---|
| Mean dependent var | 45.482686 | S.D. dependent var | 2.175166 |
| Sum squared resid | 633.7398 | S.E. of regression | 1.177599 |
| R-squared | 0.711946 | Adjusted R-squared | 0.706904 |
| F(8, 493) | 141.1888 | P-value(F) | 2.3e-118 |
| Log-likelihood | -732.8619 | Akaike criterion | 1482.724 |
| Schwarz criterion | 1521.021 | Hannan-Quinn | 1498.403 |

## Appendix to Chapter 5

Note: Tables A5.1, A5.1supplement, A5.2, A5.2supplement are quite large and available electronically.

**Table 5.2 Vietnam export shares and revealed comparative advantage**

| HS Code | Product Description | | | VN Growth of exports in value (% p.a.) | VN Growth of share in world exports (% p.a.) | VN Growth of world exports in value (% p.a.) | RCA VN (preferred method) | RCA VN (alternative method) |
|---|---|---|---|---|---|---|---|---|
| 00 | 00 All industries | | | 23 | | | 1.00 | 1.00 |
| 01 | 01 Live animals | | | 12 | 0 | 12 | 0.06 | 0.29 |
| 02 | 02 Meat and edible meat offal | | | 12 | -3 | 15 | 0.13 | 0.16 |
| 03 | 03 Fish, crustaceans, molluscs, aquatic invertebrates nes | | | 17 | 9 | 8 | 12.94 | 11.29 |
| 04 | 04 Dairy products, eggs, honey, edible animal product nes | | | 16 | 2 | 14 | 0.24 | 0.24 |
| 05 | 05 Products of animal origin, nes | | | -2 | -13 | 12 | 0.24 | 0.47 |
| 06 | 06 Live trees, plants, bulbs, roots, cut flowers etc | | | 18 | 10 | 8 | 0.16 | 0.24 |
| 07 | 07 Edible vegetables and certain roots and tubers | | | 20 | 8 | 12 | 1.10 | 1.00 |
| 08 | 08 Edible fruit, nuts, peel of citrus fruit, melons | | | 25 | 12 | 13 | 3.73 | 3.79 |
| 09 | 09 Coffee, tea, mate and spices | | | 29 | 9 | 20 | 19.59 | 18.21 |
| 10 | 10 Cereals | | | 45 | 22 | 24 | 6.24 | 5.26 |
| 11 | 11 Milling products, malt, starches, inulin, wheat gluten | | | 20 | 0 | 20 | 3.29 | 2.08 |
| 12 | 12 Oil seed, oleagic fruits, grain, seed, fruit, etc, nes | | | -9 | -31 | 21 | 0.28 | 0.11 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 13 | 13 Lac, gums, resins, vegetable saps and extracts nes | | | 9 | -4 | 13 | 0.33 | 0.11 |
| 14 | 14 Vegetable plaiting materials, vegetable products nes | | | -24 | -33 | 9 | 2.40 | 1.82 |
| 15 | 15 Animal,vegetable fats and oils, cleavage products, etc | | | 26 | 1 | 25 | 0.31 | 0.18 |
| 16 | 16 Meat, fish and seafood food preparations nes | | | 14 | -1 | 15 | 3.66 | 4.66 |
| 17 | 17 Sugars and sugar confectionery | | | 52 | 39 | 13 | 0.54 | 0.39 |
| 18 | 18 Cocoa and cocoa preparations | | | 10 | -2 | 12 | 0.02 | 0.00 |
| **Table 5.2 (continued)** | | | | | | | | |
| 19 | 19 Cereal, flour, starch, milk preparations and products | | | 22 | 8 | 14 | 1.26 | 0.87 |
| 20 | 20 Vegetable, fruit, nut, etc food preparations | | | 31 | 16 | 15 | 0.80 | 0.84 |
| 21 | 21 Miscellaneous edible preparations | | | 16 | 3 | 13 | 0.32 | 0.37 |
| 22 | 22 Beverages, spirits and vinegar | | | 27 | 15 | 13 | 0.19 | 0.11 |
| 23 | 23 Residues, wastes of food industry, animal fodder | | | 45 | 28 | 17 | 0.23 | 0.18 |
| 24 | 24 Tobacco and manufactured tobacco substitutes | | | 5 | -4 | 9 | 0.91 | 0.26 |
| 25 | 25 Salt, sulphur, earth, stone, plaster, lime and cement | | | 72 | 51 | 21 | 0.74 | 1.87 |
| 26 | 26 Ores, slag and ash | | | 24 | -10 | 34 | 0.29 | 0.55 |
| 27 | 27 Mineral fuels, oils, distillation products, etc | | | 20 | -9 | 29 | 1.38 | 1.18 |
| 28 | 28 Inorganic chemicals, precious metal compound, isotopes | | | 76 | 54 | 22 | 0.10 | 0.16 |
| 29 | 29 Organic chemicals | | | 15 | 4 | 11 | 0.09 | 0.11 |
| 30 | 30 Pharmaceutical | | | 40 | 26 | 15 | 0.02 | 0.03 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | products | | | | | | | |
| 31 | 31 Fertilizers | | | 267 | 229 | 38 | 0.83 | 0.82 |
| 32 | 32 Tanning, dyeing extracts, tannins, derivs, pigments etc | | | 48 | 39 | 9 | 0.07 | 0.08 |
| 33 | 33 Essential oils, perfumes, cosmetics, toileteries | | | 4 | -8 | 12 | 0.18 | 0.16 |
| 34 | 34 Soaps, lubricants, waxes, candles, modelling pastes | | | 61 | 47 | 13 | 1.20 | 1.63 |
| 35 | 35 Albuminoids, modified starches, glues, enzymes | | | 42 | 32 | 10 | 0.54 | 0.47 |
| 36 | 36 Explosives, pyrotechnics, matches, pyrophorics, etc | | | -5 | -16 | 11 | 0.07 | 0.08 |
| 37 | 37 Photographic or cinematographic goods | | | -26 | -24 | -3 | 0.01 | 0.03 |
| 38 | 38 Miscellaneous chemical products | | | 47 | 30 | 17 | 0.17 | 0.21 |
| 39 | 39 Plastics and articles of | | | 49 | 36 | 13 | 0.57 | 0.55 |
| 40 | 40 Rubber and articles thereof | | | 19 | 4 | 15 | 2.93 | 1.53 |
| 41 | 41 Raw hides and skins (other than furskins) and leather | | | 66 | 65 | 1 | 2.15 | 2.34 |
| 42 | 42 Articles of leather, animal gut, harness, travel goods | | | 14 | 3 | 11 | 3.31 | 4.42 |
| 43 | 43 Furskins and artificial fur, manufactures thereof | | | 99 | 99 | 1 | 0.29 | 0.37 |
| **Table 5.2 (continued)** | | | | | | | | |
| 44 | 44 Wood and articles of wood, wood charcoal | | | 32 | 27 | 5 | 1.11 | 1.47 |
| 45 | 45 Cork and articles of cork | | | -9 | -9 | 1 | 0.01 | 0.05 |
| 46 | 46 Manufactures of plaiting material, basketwork, etc. | | | 7 | -6 | 13 | 12.93 | 14.32 |
| 47 | 47 Pulp of wood, fibrous cellulosic | | | -25 | -38 | 13 | 0.00 | 0.00 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | material, waste etc | | | | | | |
| 48 | 48 Paper & paperboard, articles of pulp, paper and board | | | 34 | 27 | 8 | 0.42 | 0.37 |
| 49 | 49 Printed books, newspapers, pictures etc | | | 19 | 10 | 10 | 0.07 | 0.05 |
| 50 | 50 Silk | | | 12 | 7 | 6 | 2.44 | 2.00 |
| 51 | 51 Wool, animal hair, horsehair yarn and fabric thereof | | | 170 | 170 | 1 | 0.18 | 0.13 |
| 52 | 52 Cotton | | | 43 | 41 | 2 | 1.29 | 0.76 |
| 53 | 53 Vegetable textile fibres nes, paper yarn, woven fabric | | | 13 | 16 | -4 | 1.93 | 1.21 |
| 54 | 54 Manmade filaments | | | 44 | 41 | 3 | 1.80 | 1.68 |
| 55 | 55 Manmade staple fibres | | | 33 | 29 | 4 | 1.80 | 1.53 |
| 56 | 56 Wadding, felt, nonwovens, yarns, twine, cordage, etc | | | 28 | 18 | 11 | 0.95 | 1.03 |
| 57 | 57 Carpets and other textile floor coverings | | | 22 | 15 | 7 | 0.40 | 0.39 |
| 58 | 58 Special woven or tufted fabric, lace, tapestry etc | | | 19 | 10 | 8 | 0.42 | 0.39 |
| 59 | 59 Impregnated, coated or laminated textile fabric | | | 71 | 63 | 8 | 1.18 | 0.45 |
| 60 | 60 Knitted or crocheted fabric | | | 53 | 47 | 6 | 1.02 | 0.58 |
| 61 | 61 Articles of apparel, accessories, knit or crochet | | | 27 | 16 | 11 | 5.67 | 6.03 |
| 62 | 62 Articles of apparel, accessories, not knit or crochet | | | 16 | 9 | 7 | 6.54 | 7.45 |
| 63 | 63 Other made textile articles, sets, worn clothing etc | | | 13 | 2 | 11 | 2.37 | 2.58 |
| 64 | 64 Footwear, gaiters and the like, parts thereof | | | 13 | 3 | 11 | 13.36 | 19.97 |
| 65 | 65 Headgear and parts thereof | | | 13 | 4 | 9 | 5.30 | 8.34 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 66 | 66 Umbrellas, walking-sticks, seat-sticks, whips, etc | | | 11 | -1 | 12 | 0.34 | 0.68 |
| 67 | 67 Bird skin, feathers, artificial flowers, human hair | | | 44 | 36 | 9 | 0.48 | 0.32 |
| 68 | 68 Stone, plaster, cement, asbestos, mica, etc articles | | | 24 | 11 | 13 | 0.65 | 0.66 |
| **Table 5.2 (continued)** | | | | | | | | |
| 69 | 69 Ceramic products | | | 10 | 1 | 10 | 1.91 | 2.68 |
| 70 | 70 Glass and glassware | | | 66 | 56 | 10 | 0.83 | 0.89 |
| 71 | 71 Pearls, precious stones, metals, coins, etc | | | 36 | 17 | 19 | 0.62 | 0.32 |
| 72 | 72 Iron and steel | | | 104 | 84 | 20 | 0.78 | 0.34 |
| 73 | 73 Articles of iron or steel | | | 39 | 18 | 21 | 0.53 | 0.58 |
| 74 | 74 Copper and articles thereof | | | 143 | 119 | 25 | 0.19 | 0.24 |
| 75 | 75 Nickel and articles thereof | | | 346 | 330 | 16 | 0.00 | 0.00 |
| 76 | 76 Aluminium and articles thereof | | | 37 | 22 | 16 | 0.18 | 0.16 |
| 78 | 78 Lead and articles thereof | | | 92 | 66 | 27 | 0.12 | 1.32 |
| 79 | 79 Zinc and articles thereof | | | 12 | -4 | 16 | 0.23 | 0.34 |
| 80 | 80 Tin and articles thereof | | | 38 | 16 | 21 | 2.11 | 1.92 |
| 81 | 81 Other base metals, cermets, articles thereof | | | 58 | 38 | 20 | 0.11 | 0.68 |
| 82 | 82 Tools, implements, cutlery, etc of base metal | | | 29 | 18 | 12 | 0.68 | 0.97 |
| 83 | 83 Miscellaneous articles of base metal | | | 8 | -5 | 13 | 0.26 | 0.29 |
| 84 | 84 Boilers, machinery; nuclear reactors, etc | | | 50 | 38 | 12 | 0.32 | 0.42 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 85 | 85 Electrical, electronic equipment | | | 27 | 17 | 11 | 0.49 | 0.55 |
| 86 | 86 Railway, tramway locomotives, rolling stock, equipment | | | 83 | 69 | 14 | 0.02 | 0.05 |
| 87 | 87 Vehicles other than railway, tramway | | | 9 | -1 | 10 | 0.12 | 0.11 |
| 88 | 88 Aircraft, spacecraft, and parts thereof | | | 35 | 21 | 13 | 0.02 | 0.03 |
| 89 | 89 Ships, boats and other floating structures | | | 112 | 90 | 22 | 0.66 | 0.32 |
| 90 | 90 Optical, photo, technical, medical, etc apparatus | | | 40 | 30 | 10 | 0.22 | 0.26 |
| 91 | 91 Clocks and watches and parts thereof | | | 7 | -3 | 10 | 0.15 | 0.18 |
| 92 | 92 Musical instruments, parts and accessories | | | 24 | 16 | 8 | 0.62 | 0.66 |
| 93 | 93 Arms and ammunition, parts and accessories thereof | | | 56 | 44 | 12 | 0.00 | 0.05 |
| 94 | 94 Furniture, lighting, signs, prefabricated buildings | | | 27 | 15 | 12 | 3.58 | 5.53 |
| **Table 5.2 (continued)** | | | | | | | | |
| 95 | 95 Toys, games, sports requisites | | | 26 | 10 | 16 | 0.59 | 0.82 |
| 96 | 96 Miscellaneous manufactured articles | | | 23 | 13 | 10 | 1.09 | 1.68 |
| 97 | 97 Works of art, collectors pieces and antiques | | | 6 | -5 | 11 | 0.01 | 0.08 |
| 99 | 99 Commodities not elsewhere specified | | | 38 | 16 | 23 | | 0.11 |

**Table A5.3 Vietnam growth in export shares**

| HS Code | Product Description | | RCA VN | VN Growth of exports in value (% p.a.) | VN Growth of share in world exports (% p.a.) | VN Growth of world exports in value (% p.a.) |
|---|---|---|---|---|---|---|
| 09 | 09 Coffee, tea, mate and spices | | 19.59 | 29 | 9 | 20 |
| 64 | 64 Footwear, gaiters and the like, parts thereof | | 13.36 | 13 | 3 | 11 |
| 03 | 03 Fish, crustaceans, molluscs, aquatic invertebrates nes | | 12.94 | 17 | 9 | 8 |
| 46 | 46 Manufactures of plaiting material, basketwork, etc. | | 12.93 | 7 | -6 | 13 |
| 62 | 62 Articles of apparel, accessories, not knit or crochet | | 6.54 | 16 | 9 | 7 |
| 10 | 10 Cereals | | 6.24 | 45 | 22 | 24 |
| 61 | 61 Articles of apparel, accessories, knit or crochet | | 5.67 | 27 | 16 | 11 |
| 65 | 65 Headgear and parts thereof | | 5.30 | 13 | 4 | 9 |
| 08 | 08 Edible fruit, nuts, peel of citrus fruit, melons | | 3.73 | 25 | 12 | 13 |
| 16 | 16 Meat, fish and seafood food preparations nes | | 3.66 | 14 | -1 | 15 |
| 94 | 94 Furniture, lighting, signs, prefabricated buildings | | 3.58 | 27 | 15 | 12 |
| 42 | 42 Articles of leather, animal gut, harness, travel goods | | 3.31 | 14 | 3 | 11 |
| 11 | 11 Milling products, malt, starches, inulin, wheat gluten | | 3.29 | 20 | 0 | 20 |
| 40 | 40 Rubber and articles thereof | | 2.93 | 19 | 4 | 15 |
| 50 | 50 Silk | | 2.44 | 12 | 7 | 6 |
| 14 | 14 Vegetable plaiting materials, vegetable products nes | | 2.40 | -24 | -33 | 9 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 63 | 63 Other made textile articles, sets, worn clothing etc | | 2.37 | 13 | 2 | 11 |
| 41 | 41 Raw hides and skins (other than furskins) and leather | | 2.15 | 66 | 65 | 1 |
| 80 | 80 Tin and articles thereof | | 2.11 | 38 | 16 | 21 |
| 53 | 53 Vegetable textile fibres nes, paper yarn, woven fabric | | 1.93 | 13 | 16 | -4 |
| 69 | 69 Ceramic products | | 1.91 | 10 | 1 | 10 |
| 55 | 55 Manmade staple fibres | | 1.80 | 33 | 29 | 4 |
| 54 | 54 Manmade filaments | | 1.80 | 44 | 41 | 3 |
| 27 | 27 Mineral fuels, oils, distillation products, etc | | 1.38 | 20 | -9 | 29 |
| 52 | 52 Cotton | | 1.29 | 43 | 41 | 2 |
| 19 | 19 Cereal, flour, starch, milk preparations and products | | 1.26 | 22 | 8 | 14 |
| **Table 5.3 (continued)** | | | | | | |
| 34 | 34 Soaps, lubricants, waxes, candles, modelling pastes | | 1.20 | 61 | 47 | 13 |
| 59 | 59 Impregnated, coated or laminated textile fabric | | 1.18 | 71 | 63 | 8 |
| 44 | 44 Wood and articles of wood, wood charcoal | | 1.11 | 32 | 27 | 5 |
| 07 | 07 Edible vegetables and certain roots and tubers | | 1.10 | 20 | 8 | 12 |
| 96 | 96 Miscellaneous manufactured articles | | 1.09 | 23 | 13 | 10 |
| 60 | 60 Knitted or crocheted fabric | | 1.02 | 53 | 47 | 6 |
| 00 | 00 All industries | | 1.00 | 23 | | |
| 56 | 56 Wadding, felt, nonwovens, yarns, twine, cordage, etc | | 0.95 | 28 | 18 | 11 |
| 24 | 24 Tobacco and manufactured tobacco substitutes | | 0.91 | 5 | -4 | 9 |
| 31 | 31 Fertilizers | | 0.83 | 267 | 229 | 38 |
| 70 | 70 Glass and glassware | | 0.83 | 66 | 56 | 10 |
| 20 | 20 Vegetable, fruit, nut, etc food preparations | | 0.80 | 31 | 16 | 15 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 72 | 72 Iron and steel | | 0.78 | 104 | 84 | 20 |
| 25 | 25 Salt, sulphur, earth, stone, plaster, lime and cement | | 0.74 | 72 | 51 | 21 |
| 82 | 82 Tools, implements, cutlery, etc of base metal | | 0.68 | 29 | 18 | 12 |
| 89 | 89 Ships, boats and other floating structures | | 0.66 | 112 | 90 | 22 |
| 68 | 68 Stone, plaster, cement, asbestos, mica, etc articles | | 0.65 | 24 | 11 | 13 |
| 92 | 92 Musical instruments, parts and accessories | | 0.62 | 24 | 16 | 8 |
| 71 | 71 Pearls, precious stones, metals, coins, etc | | 0.62 | 36 | 17 | 19 |
| 95 | 95 Toys, games, sports requisites | | 0.59 | 26 | 10 | 16 |
| 39 | 39 Plastics and articles of | | 0.57 | 49 | 36 | 13 |
| **Table 5.3 (continued)** | | | | | | |
| 35 | 35 Albuminoids, modified starches, glues, enzymes | | 0.54 | 42 | 32 | 10 |
| 17 | 17 Sugars and sugar confectionery | | 0.54 | 52 | 39 | 13 |
| 73 | 73 Articles of iron or steel | | 0.53 | 39 | 18 | 21 |
| 85 | 85 Electrical, electronic equipment | | 0.49 | 27 | 17 | 11 |
| 67 | 67 Bird skin, feathers, artificial flowers, human hair | | 0.48 | 44 | 36 | 9 |
| 58 | 58 Special woven or tufted fabric, lace, tapestry etc | | 0.42 | 19 | 10 | 8 |
| 48 | 48 Paper & paperboard, articles of pulp, paper and board | | 0.42 | 34 | 27 | 8 |
| 57 | 57 Carpets and other textile floor coverings | | 0.40 | 22 | 15 | 7 |
| 66 | 66 Umbrellas, walking-sticks, seat-sticks, whips, etc | | 0.34 | 11 | -1 | 12 |
| 13 | 13 Lac, gums, resins, vegetable saps and extracts nes | | 0.33 | 9 | -4 | 13 |
| 21 | 21 Miscellaneous edible preparations | | 0.32 | 16 | 3 | 13 |
| 84 | 84 Boilers, machinery; nuclear reactors, etc | | 0.32 | 50 | 38 | 12 |

| | | | | | |
|---|---|---|---|---|---|
| 15 | 15 Animal,vegetable fats and oils, cleavage products, etc | 0.31 | 26 | 1 | 25 |
| 43 | 43 Furskins and artificial fur, manufactures thereof | 0.29 | 99 | 99 | 1 |
| 26 | 26 Ores, slag and ash | 0.29 | 24 | -10 | 34 |
| 12 | 12 Oil seed, oleagic fruits, grain, seed, fruit, etc, nes | 0.28 | -9 | -31 | 21 |
| 83 | 83 Miscellaneous articles of base metal | 0.26 | 8 | -5 | 13 |
| 05 | 05 Products of animal origin, nes | 0.24 | -2 | -13 | 12 |
| 04 | 04 Dairy products, eggs, honey, edible animal product nes | 0.24 | 16 | 2 | 14 |
| 79 | 79 Zinc and articles thereof | 0.23 | 12 | -4 | 16 |
| 23 | 23 Residues, wastes of food industry, animal fodder | 0.23 | 45 | 28 | 17 |
| 90 | 90 Optical, photo, technical, medical, etc apparatus | 0.22 | 40 | 30 | 10 |
| 74 | 74 Copper and articles thereof | 0.19 | 143 | 119 | 25 |
| 22 | 22 Beverages, spirits and vinegar | 0.19 | 27 | 15 | 13 |
| 76 | 76 Aluminium and articles thereof | 0.18 | 37 | 22 | 16 |
| 51 | 51 Wool, animal hair, horsehair yarn and fabric thereof | 0.18 | 170 | 170 | 1 |
| 33 | 33 Essential oils, perfumes, cosmetics, toileteries | 0.18 | 4 | -8 | 12 |
| 38 | 38 Miscellaneous chemical products | 0.17 | 47 | 30 | 17 |
| 06 | 06 Live trees, plants, bulbs, roots, cut flowers etc | 0.16 | 18 | 10 | 8 |
| 91 | 91 Clocks and watches and parts thereof | 0.15 | 7 | -3 | 10 |
| 02 | 02 Meat and edible meat offal | 0.13 | 12 | -3 | 15 |
| 78 | 78 Lead and articles thereof | 0.12 | 92 | 66 | 27 |
| 87 | 87 Vehicles other than railway, tramway | 0.12 | 9 | -1 | 10 |
| 81 | 81 Other base metals, cermets, articles thereof | 0.11 | 58 | 38 | 20 |

| | | | | | |
|---|---|---|---|---|---|
| 28 | 28 Inorganic chemicals, precious metal compound, isotopes | 0.10 | 76 | 54 | 22 |
| 29 | 29 Organic chemicals | 0.09 | 15 | 4 | 11 |
| 49 | 49 Printed books, newspapers, pictures etc | 0.07 | 19 | 10 | 10 |
| 32 | 32 Tanning, dyeing extracts, tannins, derivs,pigments etc | 0.07 | 48 | 39 | 9 |
| 36 | 36 Explosives, pyrotechnics, matches, pyrophorics, etc | 0.07 | -5 | -16 | 11 |
| 01 | 01 Live animals | 0.06 | 12 | 0 | 12 |
| 86 | 86 Railway, tramway locomotives, rolling stock, equipment | 0.02 | 83 | 69 | 14 |
| 18 | 18 Cocoa and cocoa preparations | 0.02 | 10 | -2 | 12 |
| 30 | 30 Pharmaceutical products | 0.02 | 40 | 26 | 15 |
| 88 | 88 Aircraft, spacecraft, and parts thereof | 0.02 | 35 | 21 | 13 |
| 97 | 97 Works of art, collectors pieces and antiques | 0.01 | 6 | -5 | 11 |
| 37 | 37 Photographic or cinematographic goods | 0.01 | -26 | -24 | -3 |
| 45 | 45 Cork and articles of cork | 0.01 | -9 | -9 | 1 |
| 47 | 47 Pulp of wood, fibrous cellulosic material, waste **Table 5.3 (continued)** | 0.00 | -25 | -38 | 13 |
| 75 | 75 Nickel and articles thereof | 0.00 | 346 | 330 | 16 |
| 93 | 93 Arms and ammunition, parts and accessories thereof | 0.00 | 56 | 44 | 12 |
| 99 | 99 Commodities not elsewhere specified | | 38 | 16 | 23 |

**Table A5.4 Vietnam export sector characteristics**

| Industry | | Exports in value | Exports as a share of total exports (%) | Exports as a share of world exports (%) | Growth of exports in value (% p.a.) |
|---|---|---|---|---|---|
| 00 All industries | | 61,733,756 | 100 | 0.38 | 23 |
| 27 Mineral fuels, oils, distillation products, etc | | 12,308,405 | 19.94 | 0.45 | 20 |
| 64 Footwear, gaiters and the like, parts thereof | | 6,957,894 | 11.27 | 7.59 | 13 |
| 62 Articles of apparel, accessories, not knit or crochet | | 5,082,681 | 8.23 | 2.83 | 16 |
| 61 Articles of apparel, accessories, knit or crochet | | 4,087,121 | 6.62 | 2.29 | 27 |
| 85 Electrical, electronic equipment | | 4,080,338 | 6.61 | 0.21 | 27 |
| 94 Furniture, lighting, signs, prefabricated buildings | | 3,679,777 | 5.96 | 2.1 | 27 |
| 84 Boilers, machinery; nuclear reactors, etc | | 3,171,192 | 5.14 | 0.16 | 50 |
| 03 Fish, crustaceans, molluscs, aquatic invertebrates nes | | 3,041,423 | 4.93 | 4.29 | 17 |
| 09 Coffee, tea, mate and spices | | 2,256,136 | 3.65 | 6.92 | 29 |
| 10 Cereals | | 2,065,058 | 3.35 | 2 | 45 |
| 08 Edible fruit, nuts, peel of citrus fruit, melons | | 1,032,254 | 1.67 | 1.44 | 25 |
| 39 Plastics and articles thereof | | 997,361 | 1.62 | 0.21 | 49 |
| 40 Rubber and articles thereof | | 889,993 | 1.44 | 0.58 | 19 |
| 42 Articles of leather, animal gut, harness, travel goods | | 833,251 | 1.35 | 1.68 | 14 |
| 16 Meat, fish and seafood food preparations nes | | 678,988 | 1.1 | 1.77 | 14 |
| 73 Articles of iron or steel | | 671,816 | 1.09 | 0.22 | 39 |
| 72 Iron and steel | | 657,252 | 1.06 | 0.13 | 104 |
| 44 Wood and articles of wood, wood charcoal | | 653,065 | 1.06 | 0.56 | 32 |

| | | | | |
|---|---|---|---|---|
| 90 Optical, photo, technical, medical, etc apparatus | 468,372 | 0.76 | 0.1 | 40 |
| 87 Vehicles other than railway, tramway | 457,393 | 0.74 | 0.04 | 9 |
| 71 Pearls, precious stones, metals, coins, etc | 440,838 | 0.71 | 0.12 | 36 |
| 63 Other made textile articles, sets, worn clothing etc | 430,868 | 0.7 | 0.98 | 13 |
| 69 Ceramic products | 406,734 | 0.66 | 1.02 | 10 |
| 25 Salt, sulphur, earth, stone, plaster, lime and cement | 346,336 | 0.56 | 0.71 | 72 |
| 95 Toys, games, sports requisites | 305,579 | 0.49 | 0.31 | 26 |
| 26 Ores, slag and ash | 302,783 | 0.49 | 0.21 | 24 |
| 99 Commodities not elsewhere specified | 298,012 | 0.48 | 0.04 | 38 |
| 34 Soaps, lubricants, waxes, candles, modelling pastes | 285,503 | 0.46 | 0.62 | 61 |
| 54 Manmade filaments | 262,200 | 0.42 | 0.64 | 44 |
| 41 Raw hides and skins (other than furskins) and leather | 255,206 | 0.41 | 0.89 | 66 |
| 48 Paper & paperboard, articles of pulp, paper and bd | 249,572 | 0.4 | 0.14 | 34 |
| **Table 5.4 (continued)** | | | | |
| 70 Glass and glassware | 219,217 | 0.36 | 0.34 | 66 |
| 31 Fertilizers | 218,361 | 0.35 | 0.31 | 267 |
| 82 Tools, implements, cutlery, etc of base metal | 196,190 | 0.32 | 0.37 | 29 |
| 07 Edible vegetables and certain roots and tubers | 188,583 | 0.31 | 0.38 | 20 |
| 65 Headgear and parts thereof | 186,060 | 0.3 | 3.17 | 13 |
| 55 Manmade staple fibres | 183,518 | 0.3 | 0.58 | 33 |
| 96 Miscellaneous manufactured articles | 164,919 | 0.27 | 0.64 | 23 |
| 20 Vegetable, fruit, nut, etc food preparations | 159,972 | 0.26 | 0.32 | 31 |
| 52 Cotton | 152,904 | 0.25 | 0.29 | 43 |
| 46 Manufactures of plaiting material, basketwork, etc. | 152,874 | 0.25 | 5.44 | 7 |
| 19 Cereal, flour, starch, milk preparations and products | 150,118 | 0.24 | 0.33 | 22 |
| 29 Organic chemicals | 144,334 | 0.23 | 0.04 | 15 |

| | | | | |
|---|---|---|---|---|
| 89 Ships, boats and other floating structures | 135,641 | 0.22 | 0.12 | 112 |
| 74 Copper and articles thereof | 129,673 | 0.21 | 0.09 | 143 |
| 11 Milling products, malt, starches, inulin, wheat gluten | 123,306 | 0.2 | 0.79 | 20 |
| 38 Miscellaneous chemical products | 121,378 | 0.2 | 0.08 | 47 |
| 68 Stone, plaster, cement, asbestos, mica, etc articles | 104,412 | 0.17 | 0.25 | 24 |
| 76 Aluminium and articles thereof | 93,819 | 0.15 | 0.06 | 37 |
| 56 Wadding, felt, nonwovens, yarns, twine, cordage, etc | 74,275 | 0.12 | 0.39 | 28 |
| 28 Inorganic chemicals, precious metal compound, isotopes | 71,322 | 0.12 | 0.06 | 76 |
| 04 Dairy products, eggs, honey, edible animal product nes | 60,032 | 0.1 | 0.09 | 16 |
| 21 Miscellaneous edible preparations | 59,923 | 0.1 | 0.14 | 16 |
| 83 Miscellaneous articles of base metal | 57,803 | 0.09 | 0.11 | 8 |
| 15 Animal,vegetable fats and oils, cleavage products, etc | 57,560 | 0.09 | 0.07 | 26 |
| 02 Meat and edible meat offal | 55,203 | 0.09 | 0.06 | 12 |
| 33 Essential oils, perfumes, cosmetics, toileteries | 54,815 | 0.09 | 0.06 | 4 |
| 81 Other base metals, cermets, articles thereof | 54,504 | 0.09 | 0.26 | 58 |
| 60 Knitted or crocheted fabric | 51,253 | 0.08 | 0.22 | 53 |
| 80 Tin and articles thereof | 49,141 | 0.08 | 0.73 | 38 |
| 17 Sugars and sugar confectionery | 48,056 | 0.08 | 0.15 | 52 |
| 35 Albuminoids, modified starches, glues, enzymes | 39,117 | 0.06 | 0.18 | 42 |
| 22 Beverages, spirits and vinegar | 37,405 | 0.06 | 0.04 | 27 |
| 23 Residues, wastes of food industry, animal fodder | 36,977 | 0.06 | 0.07 | 45 |
| 59 Impregnated, coated or laminated textile fabric | 36,073 | 0.06 | 0.17 | 71 |
| 24 Tobacco and manufactured tobacco substitutes | 34,599 | 0.06 | 0.1 | 5 |
| 78 Lead and articles thereof | 32,759 | 0.05 | 0.5 | 92 |

| | | | | |
|---|---|---|---|---|
| 30 Pharmaceutical products | 27,531 | 0.04 | 0.01 | 40 |
| 50 Silk | 26,187 | 0.04 | 0.76 | 12 |
| 91 Clocks and watches and parts thereof | 24,597 | 0.04 | 0.07 | 7 |
| **Table 5.4 (continued)** | | | | |
| 12 Oil seed, oleagic fruits, grain, seed, fruit, etc, nes | 23,198 | 0.04 | 0.04 | -9 |
| 88 Aircraft, spacecraft, and parts thereof | 22,715 | 0.04 | 0.01 | 35 |
| 58 Special woven or tufted fabric, lace, tapestry etc | 20,687 | 0.03 | 0.15 | 19 |
| 57 Carpets and other textile floor coverings | 20,317 | 0.03 | 0.15 | 22 |
| 32 Tanning, dyeing extracts, tannins, derivs,pigments etc | 20,038 | 0.03 | 0.03 | 48 |
| 01 Live animals | 18,519 | 0.03 | 0.11 | 12 |
| 79 Zinc and articles thereof | 16,347 | 0.03 | 0.13 | 12 |
| 92 Musical instruments, parts and accessories | 15,730 | 0.03 | 0.25 | 24 |
| 06 Live trees, plants, bulbs, roots, cut flowers etc | 15,532 | 0.03 | 0.09 | 18 |
| 53 Vegetable textile fibres nes, paper yarn, woven fabric | 14,717 | 0.02 | 0.46 | 13 |
| 05 Products of animal origin, nes | 13,083 | 0.02 | 0.18 | -2 |
| 49 Printed books, newspapers, pictures etc | 10,588 | 0.02 | 0.02 | 19 |
| 43 Furskins and artificial fur, manufactures thereof | 10,089 | 0.02 | 0.14 | 99 |
| 86 Railway, tramway locomotives, rolling stock, equipment | 7,198 | 0.01 | 0.02 | 83 |
| 97 Works of art, collectors pieces and antiques | 7,188 | 0.01 | 0.03 | 6 |
| 51 Wool, animal hair, horsehair yarn and fabric thereof | 6,889 | 0.01 | 0.05 | 170 |
| 66 Umbrellas, walking-sticks, seat-sticks, whips, etc | 6,414 | 0.01 | 0.26 | 11 |
| 67 Bird skin, feathers, artificial flowers, human hair | 4,500 | 0.01 | 0.12 | 44 |
| 14 Vegetable plaiting materials, vegetable products nes | 4,470 | 0.01 | 0.69 | -24 |
| 13 Lac, gums, resins, vegetable saps and extracts nes | 2,108 | 0 | 0.04 | 9 |

| | | | | |
|---|---|---|---|---|
| 93 Arms and ammunition, parts and accessories thereof | 1,485 | 0 | 0.02 | 56 |
| 37 Photographic or cinematographic goods | 1,365 | 0 | 0.01 | -26 |
| 18 Cocoa and cocoa preparations | 1,071 | 0 | 0 | 10 |
| 36 Explosives, pyrotechnics, matches, pyrophorics, etc | 956 | 0 | 0.03 | -5 |
| 75 Nickel and articles thereof | 395 | 0 | 0 | 346 |
| 45 Cork and articles of cork | 306 | 0 | 0.02 | -9 |
| 47 Pulp of wood, fibrous cellulosic material, waste etc | 39 | 0 | 0 | -25 |

**Table A5.5 Viet Nam exports HS 09 (coffee, tea, mate and spices)**

| Industry | Exports in value | Exports as a share of total exports (%) | Exports as a share of world exports (%) | Growth of exports in value (% p.a.) | Growth of exports in volume (% p.a.) |
|---|---|---|---|---|---|
| 0900 All industries in sector 09 | 2,256,136 | 3.65 | 6.92 | 29 | 1 |
| 0901 Coffee | 1,860,487 | 3.01 | 8.56 | 33 | 2 |
| 0904 Pepper, peppers and capsicum | 274,540 | 0.44 | 12.97 | 16 | |
| 0902 Tea | 91,926 | 0.15 | 1.61 | 11 | |
| 0906 Cinnamon and cinnamon-tree flowers | 14,766 | 0.02 | 7.42 | 24 | 16 |
| 0910 Ginger,saffron,turmeric, thyme, bay leaves & curry | 6,719 | 0.01 | 0.45 | 20 | 18 |
| 0909 Seeds of anise, badian,fennel,coriander, cumin, etc. | 4,491 | 0.01 | 0.84 | 11 | 7 |
| 0908 Nutmeg, mace and cardamons | 3,120 | 0.01 | 0.75 | 108 | |
| 0907 Cloves | 83 | 0 | 0.05 | 51 | |
| 0905 Vanilla | 2 | 0 | 0 | -10 | |
| 0903 Maté | 2 | 0 | 0 | | |
| *Sources : ITC calculations based on COMTRADE statistics.* | | | | | |
| | | | | | |
| **FURTHER DISAGGREGATION OF HS 0901 (coffee, tea, mate and spices)** | | | | | |
| Existing and potential trade between Viet Nam and India in 2008 | | | | | |
| Product : 0901 Coffee | | | | | |
| Sources : ITC calculations based on COMTRADE statistics. | | | | | |
| Viet Nam's exports have been reported by Viet Nam | | | | | |
| India's imports have been reported by India | | | | | |

| Product Code | Product Label | Viet Nam's exports to India | | | |
|---|---|---|---|---|---|
| | | Value in 2008, USD thousand | Annual growth in value between 2004-2008, %, p.a. | Share in Viet Nam's exports, % | Equivalent ad valorem tariff applied by India to Viet Nam |
| '090111 | Coffee, not roasted, not decaffeinated | 10606 | 19 | 0.5 | 100 |
| '090112 | Coffee, not roasted, decaffeinated | 0 | | 0 | 100 |
| '090121 | Coffee, roasted, not decaffeinated | 0 | | 0 | 100 |
| '090122 | Coffee, roasted, decaffeinated | 0 | | 0 | 100 |
| '090190 | Coffee husks and skins, coffee substitutes | 0 | | 0 | 100 |

**Table A5.7b Viet Nam export similarity with partners**

| HS Code and Industry Description | VN RCA | ES Korea | ES AUS | ES India | ES NZ | ES China | ES Indones | ES Malay | ES EU-27 |
|---|---|---|---|---|---|---|---|---|---|
| 64 Footwear, gaiters and the like, parts thereof | 19.97 | 47.93 | 19.53 | 206.53 | 18.48 | 125.71 | 89.81 | 96.65 | 13.40 |
| 09 Coffee, tea, mate and spices | 18.21 | 46.83 | 20.28 | 41.53 | 20.26 | 408.65 | 94.56 | 20.72 | 8.42 |
| 46 Manufactures of plaiting material, basketwork, etc. | 14.32 | 31.33 | 19.42 | 709.28 | 16.42 | 373.40 | 229.58 | 81.09 | 8.23 |
| 03 Fish, crustaceans, molluscs, aquatic invertebrates nes | 11.29 | 8.48 | 17.72 | 272.61 | 28.85 | 15.30 | 60.25 | 15.50 | 5.92 |
| 65 Headgear and parts thereof | 8.34 | 22.29 | 4.21 | 245.32 | 3.60 | 139.50 | 24.60 | 66.32 | 4.84 |
| 62 Articles of apparel, accessories, not knit or crochet | 7.45 | 13.17 | 7.78 | 297.26 | 6.91 | 76.28 | 93.95 | 54.51 | 4.14 |
| 61 Articles of apparel, accessories, knit or crochet | 6.03 | 22.63 | 6.77 | 415.50 | 5.34 | 87.82 | 71.47 | 57.16 | 3.60 |
| 94 Furniture, lighting, signs, prefabricated buildings | 5.53 | 14.53 | 3.88 | 29.43 | 4.56 | 44.22 | 25.24 | 16.81 | 5.13 |
| 10 Cereals | 5.26 | 3.37 | 37.00 | 38.49 | 4.80 | 54.32 | 1.97 | 2.69 | 9.16 |
| 16 Meat, fish and seafood food preparations nes | 4.66 | 11.15 | 3.91 | 982.88 | 4.30 | 156.77 | 78.43 | 23.26 | 3.58 |
| 42 Articles of leather, animal gut, harness, travel goods | 4.42 | 5.97 | 3.34 | 43.15 | 3.93 | 21.82 | 21.86 | 13.35 | 2.49 |
| 08 Edible fruit, nuts, peel of citrus fruit, melons | 3.79 | 10.97 | 6.45 | 4.50 | 2.60 | 15.28 | 4.78 | 10.97 | 1.99 |
| 69 Ceramic products | 2.68 | 2.80 | 2.07 | 3.98 | 1.94 | 16.72 | 4.02 | 5.13 | 2.96 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 63 Other made textile articles, sets, worn clothing etc | 2.58 | 8.55 | 1.61 | 12.08 | 1.38 | 28.33 | 22.58 | 6.33 | 1.67 |
| 41 Raw hides and skins (other than furskins) and leather | 2.34 | 2.30 | 6.95 | 2.67 | 17.98 | 0.82 | 1.58 | 4.49 | 2.33 |
| 11 Milling products, malt, starches, inulin, wheat gluten | 2.08 | 3.77 | 4.44 | 29.81 | 1.63 | 9.68 | 0.59 | 1.21 | 26.84 |
| 50 Silk | 2.00 | 1.21 | 4.54 | 0.34 | 3.47 | 3.88 | 3.95 | 3.30 | 1.56 |
| | | | | | | | | | |
| **Table A5.7b (continued)** | | | | | | | | | |
| 80 Tin and articles thereof | 1.92 | 1.01 | 7.38 | 2.23 | 0.89 | 1.93 | 3.13 | 0.50 | 1.52 |
| 25 Salt, sulphur, earth, stone, plaster, lime and cement | 1.87 | 2.21 | 1.90 | 0.70 | 0.37 | 1.04 | 0.86 | 1.70 | 1.53 |
| 14 Vegetable plaiting materials, vegetable products nes | 1.82 | 2.02 | 4.43 | 6.25 | 3.22 | 1.44 | 16.83 | 1.63 | 1.17 |
| 54 Manmade filaments | 1.68 | 2.32 | 2.91 | 2.45 | 2.81 | 1.30 | 0.75 | 2.94 | 2.57 |
| 96 Miscellaneous manufactured articles | 1.68 | 3.34 | 1.55 | 3.64 | 1.38 | 3.68 | 1.51 | 2.63 | 1.59 |
| 34 Soaps, lubricants, waxes, candles, modelling pastes | 1.63 | 3.11 | 1.78 | 4.55 | 0.93 | 2.37 | 1.40 | 1.61 | 3.86 |
| 40 Rubber and articles thereof | 1.53 | 2.51 | 1.07 | 2.50 | 1.30 | 1.37 | 1.31 | 1.06 | 1.65 |
| 55 Manmade staple fibres | 1.53 | 1.56 | 3.39 | 3.30 | 1.76 | 1.35 | 0.63 | 3.01 | 2.08 |
| 44 Wood and articles of wood, wood charcoal | 1.47 | 1.79 | 1.80 | 2.15 | 2.61 | 1.50 | 3.94 | 3.40 | 1.42 |
| 78 Lead and articles thereof | 1.32 | 0.85 | 4.89 | 0.35 | 3.38 | 4.47 | 0.31 | 0.63 | 1.22 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 53 Vegetable textile fibres nes, paper yarn, woven fabric | 1.21 | 1.59 | 2.10 | 0.70 | 0.68 | 0.55 | 0.72 | 7.08 | 0.99 |
| 27 Mineral fuels, oils, distillation products, etc | 1.18 | 0.61 | 1.27 | 0.54 | 1.13 | 1.33 | 0.84 | 1.83 | 0.70 |
| 56 Wadding, felt, nonwovens, yarns, twine, cordage, etc | 1.03 | 1.53 | 1.22 | 3.64 | 0.77 | 1.36 | 0.95 | 2.33 | 1.83 |
| 00 All industries | 1.00 | | | | | | | | |
| 07 Edible vegetables and certain roots and tubers | 1.00 | 2.52 | 2.79 | 0.67 | 1.59 | 6.01 | 1.37 | 1.12 | 1.37 |
| 82 Tools, implements, cutlery, etc of base metal | 0.97 | 2.14 | 0.75 | 1.79 | 0.74 | 1.56 | 1.32 | 0.83 | 0.88 |
| 70 Glass and glassware | 0.89 | 0.61 | 1.11 | 2.43 | 0.54 | 1.19 | 1.75 | 1.07 | 1.30 |
| 19 Cereal, flour, starch, milk preparations and products | 0.87 | 2.82 | 0.79 | 21.85 | 0.35 | 3.78 | 2.42 | 0.88 | 3.90 |
| | | | | | | | | | |
| **Table A5.7b (continued)** | | | | | | | | | |
| 20 Vegetable, fruit, food nut, etc preparations | 0.84 | 1.78 | 0.72 | 20.51 | 0.41 | 9.79 | 5.08 | 2.40 | 0.97 |
| 31 Fertilizers | 0.82 | 2.03 | 0.35 | 0.09 | 0.20 | 1.14 | 0.18 | 0.27 | 1.25 |
| 95 Toys, games, sports requisites | 0.82 | 1.69 | 0.41 | 6.88 | 0.51 | 4.65 | 3.81 | 3.35 | 0.43 |
| 52 Cotton | 0.76 | 0.84 | 4.64 | 1.11 | 2.92 | 0.38 | 0.16 | 1.36 | 1.31 |
| 66 Umbrellas, walking-sticks, seat-sticks, whips, etc | 0.68 | 0.64 | 0.68 | 1.74 | 0.43 | 17.60 | 1.28 | 8.37 | 0.32 |
| 81 Other base metals, cermets, articles thereof | 0.68 | 0.31 | 1.39 | 1.23 | 2.71 | 0.77 | 2.61 | 1.39 | 0.41 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 68 Stone, plaster, cement, asbestos, et | 0.66 | 0.54 | 0.71 | 1.73 | 0.59 | 2.18 | 1.42 | 1.21 | 0.82 |
| 92 Musical instruments, parts and accessories | 0.66 | 0.69 | 0.40 | 4.54 | 0.47 | 1.72 | 0.26 | 0.88 | 0.44 |
| 60 Knitted or crocheted fabric | 0.58 | 3.54 | 1.70 | 1.74 | 1.07 | 0.39 | 0.15 | 0.67 | 1.53 |
| 73 Articles of iron or steel | 0.58 | 0.75 | 0.50 | 0.94 | 0.55 | 1.17 | 0.42 | 0.48 | 0.83 |
| 26 Ores, slag and ash | 0.55 | 0.19 | 2.16 | 0.29 | 44.01 | 0.06 | 1.30 | 1.04 | 0.32 |
| 39 Plastics and articles thereof | 0.55 | 0.94 | 0.69 | 1.14 | 0.46 | 0.38 | 0.53 | 0.53 | 0.97 |
| 85 Electrical, electronic equipment | 0.55 | 0.46 | 0.67 | 0.93 | 0.80 | 0.28 | 0.60 | 0.21 | 0.64 |
| 05 Products of animal origin, nes | 0.47 | 0.62 | 0.58 | 4.45 | 0.32 | 0.89 | 1.02 | 2.62 | 0.29 |
| 35 Albuminoids, modified starches, glues, enzymes | 0.47 | 0.52 | 0.52 | 1.26 | 0.33 | 0.44 | 0.28 | 0.57 | 0.74 |
| 59 Impregnated, coated or laminated textile fabric | 0.45 | 0.82 | 0.85 | 0.35 | 0.54 | 0.39 | 0.28 | 1.03 | 0.94 |
| 84 Boilers, machinery; nuclear reactors, etc | 0.42 | 0.55 | 0.35 | 0.57 | 0.40 | 0.42 | 0.36 | 0.37 | 0.48 |
| 17 Sugars and sugar confectionery | 0.39 | 0.43 | 0.86 | 3.63 | 0.18 | 2.14 | 0.23 | 0.25 | 0.59 |
| 57 Carpets and other textile floor coverings | 0.39 | 1.38 | 0.20 | 1.72 | 0.15 | 3.35 | 1.48 | 1.10 | 0.38 |
| 58 Special woven or tufted fabric, lace, tapestry etc | 0.39 | 1.85 | 1.02 | 0.99 | 0.75 | 0.46 | 0.18 | 1.38 | 0.71 |
| 21 Miscellaneous edible preparations | 0.37 | 0.62 | 0.16 | 5.60 | 0.10 | 2.43 | 0.26 | 0.39 | 0.76 |
| **Table A5.7b (continued)** | | | | | | | | | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 43 Furskins and artificial fur, manufactures thereof | 0.37 | 0.57 | 1.47 | 22.56 | 0.64 | 0.50 | 19.46 | 34.15 | 0.61 |
| 48 Paper & paperboard, articles of pulp, paper and board | 0.37 | 1.19 | 0.31 | 0.68 | 0.19 | 1.04 | 0.53 | 0.37 | 0.83 |
| 72 Iron and steel | 0.34 | 0.13 | 0.67 | 0.31 | 0.66 | 0.49 | 0.17 | 0.25 | 0.41 |
| 79 Zinc and articles thereof | 0.34 | 0.87 | 3.05 | 0.45 | 0.35 | 0.38 | 0.14 | 0.27 | 0.53 |
| 67 Bird skin, feathers, artificial flowers, human hair | 0.32 | 0.88 | 0.52 | 2.89 | 0.68 | 0.59 | 2.04 | 6.46 | 0.27 |
| 71 Pearls, precious stones, metals, coins, etc | 0.32 | 0.88 | 0.14 | 0.06 | 1.29 | 1.07 | 11.97 | 0.34 | 0.32 |
| 89 Ships, boats and other floating structures | 0.32 | 0.28 | 0.37 | 0.14 | 0.28 | 1.93 | 0.20 | 0.48 | 0.27 |
| 01 Live animals | 0.29 | 2.89 | 0.49 | 11.13 | 0.37 | 3.26 | 0.10 | 0.70 | 1.35 |
| 83 Miscellaneous articles of base metal | 0.29 | 0.84 | 0.22 | 0.89 | 0.25 | 0.76 | 0.31 | 0.35 | 0.33 |
| 24 Tobacco and manufactured tobacco substitutes | 0.26 | 0.83 | 0.72 | 10.95 | 0.38 | 0.86 | 0.19 | 0.27 | 0.49 |
| 90 Optical, photo, technical, medical, etc apparatus | 0.26 | 0.26 | 0.24 | 0.52 | 0.28 | 0.11 | 0.67 | 0.27 | 0.28 |
| 04 Dairy products, eggs, honey, edible animal product nes | 0.24 | 1.06 | 0.34 | 17.36 | 0.44 | 1.30 | 0.15 | 0.21 | 1.62 |
| 06 Live trees, plants, bulbs, roots, cut flowers etc | 0.24 | 2.00 | 1.18 | 7.87 | 1.22 | 3.74 | 50.41 | 4.30 | 0.30 |
| 74 Copper and articles thereof | 0.24 | 0.15 | 0.47 | 0.45 | 0.43 | 0.09 | 0.26 | 0.11 | 0.26 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 38 Miscellaneous chemical products | 0.21 | 0.14 | 0.27 | 0.27 | 0.19 | 0.23 | 0.22 | 0.29 | 0.29 |
| 15 Animal,vegetable fats and oils, cleavage products, etc | 0.18 | 0.34 | 0.31 | 0.09 | 0.14 | 0.09 | 0.82 | 0.09 | 0.17 |
| 23 Residues, wastes of food industry, animal fodder | 0.18 | 0.14 | 0.24 | 1.47 | 0.04 | 0.36 | 0.04 | 0.13 | 0.11 |
| | | | | | | | | | |
| **Table A5.7b (continued)** | | | | | | | | | |
| 91 Clocks and watches and parts thereof | 0.18 | 0.59 | 0.23 | 0.85 | 0.31 | 0.24 | 1.71 | 0.14 | 0.12 |
| 02 Meat and edible meat offal | 0.16 | 0.19 | 0.46 | 382.79 | 0.27 | 0.44 | 0.54 | 0.35 | 0.39 |
| 33 Essential oils, perfumes, cosmetics, toileteries | 0.16 | 0.36 | 0.16 | 1.00 | 0.10 | 0.91 | 0.21 | 0.22 | 0.31 |
| 76 Aluminium and articles thereof | 0.16 | 0.12 | 0.24 | 0.30 | 0.22 | 0.25 | 0.16 | 0.12 | 0.14 |
| 51 Wool, animal hair, horsehair yarn and fabric thereof | 0.13 | 0.13 | 0.14 | 0.10 | 0.11 | 0.04 | 0.21 | 0.32 | 0.11 |
| 12 Oil seed, oleagic fruits, grain, seed, fruit, etc, nes | 0.11 | 0.12 | 0.50 | 0.81 | 0.33 | 0.02 | 0.06 | 0.14 | 0.07 |
| 13 Lac, gums, resins, vegetable saps and extracts nes | 0.11 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 22 Beverages, spirits and vinegar | 0.11 | 0.37 | 0.09 | 0.89 | 0.06 | 0.60 | 0.99 | 0.31 | 0.18 |
| 29 Organic chemicals | 0.11 | 0.09 | 0.13 | 0.08 | 0.29 | 0.07 | 0.06 | 0.12 | 0.10 |
| 87 Vehicles other than railway, tramway | 0.11 | 0.45 | 0.06 | 0.72 | 0.07 | 0.31 | 0.14 | 0.29 | 0.20 |
| 99 Commodities not elsewhere specified | 0.11 | 2115.10 | 0.44 | 0.36 | 0.62 | 1.23 | 40792.44 | 0.62 | 0.42 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 32 Tanning, dyeing extracts, tannins, derivs,pigments etc | 0.08 | 0.07 | 0.10 | 0.11 | 0.05 | 0.08 | 0.05 | 0.07 | 0.12 |
| 36 Explosives, pyrotechnics, matches, pyrophorics, etc | 0.08 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 97 Works of art, collectors pieces and antiques | 0.08 | 0.06 | 0.12 | 1.12 | 0.12 | 5.13 | 3.48 | 1.36 | 0.05 |
| 45 Cork and articles of cork | 0.05 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 49 Printed books, newspapers, pictures etc | 0.05 | 0.24 | 0.04 | 0.12 | 0.02 | 0.28 | 0.38 | 0.10 | 0.10 |
| 93 Arms and ammunition, parts and accessories th/of | 0.05 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | | | | | | | | |
| **Table A5.7b (continued)** | | | | | | | | | |
| 30 Pharmaceutical products | 0.03 | 0.06 | 0.01 | 0.14 | 0.02 | 0.09 | 0.15 | 0.08 | 0.02 |
| 37 Photographic or cinematographic goods | 0.03 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 88 Aircraft, spacecraft, and parts thereof | 0.03 | 0.09 | 0.02 | 0.01 | 0.02 | 0.05 | 0.03 | 0.04 | 0.02 |
| 18 Cocoa and cocoa preparations | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 47 Pulp of wood, fibrous cellulosic material, waste etc | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 75 Nickel and articles thereof | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

**Table 5.7a Products with revealed comparative advantage**

| HS Code | Product Description | RCA VN | RCA AUS | RCA CAM | RCA China | RCA India | RCA Indo | RCA Malay | RCA NZ | RCA ROK | RCA EU27 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 09 | Coffee, tea, mate and spices | 19.59 | 0.08 | 0.02 | 0.43 | 4.54 | 4.97 | 0.21 | 0.06 | 0.02 | 0.41 |
| 64 | Footwear, gaiters and the like, parts thereof | 13.36 | 0.04 | 0.40 | 3.55 | 1.50 | 2.35 | 0.17 | 0.23 | 0.20 | 0.76 |
| 03 | Fish, crustaceans, molluscs, aquatic invertebrates nes | 12.94 | 0.98 | 0.05 | 0.75 | 1.53 | 2.97 | 0.69 | 6.10 | 0.55 | 0.37 |
| 46 | Manufactures of plaiting material, basketwork, etc. | 12.93 | 0.01 | 0.02 | 7.51 | 0.14 | 2.09 | 0.02 | 0.04 | 0.02 | 0.10 |
| 62 | Articles of apparel, accessories, not knit or crochet | 6.54 | 0.04 | 0.68 | 3.25 | 2.89 | 2.19 | 0.26 | 0.28 | 0.14 | 0.77 |
| 10 | Cereals | 6.24 | 3.26 | 0.37 | 0.06 | 2.91 | 0.05 | 0.00 | 0.05 | 0.00 | 0.56 |
| 61 | Articles of apparel, accessories, knit or crochet | 5.67 | 0.05 | 0.06 | 3.86 | 2.20 | 1.73 | 0.40 | 0.24 | 0.19 | 0.41 |
| 65 | Headgear and parts thereof | 5.30 | 0.16 | 0.82 | 4.34 | 0.31 | 0.54 | 0.24 | 1.01 | 0.85 | 0.62 |
| 08 | Edible fruit, nuts, peel of citrus fruit, melons | 3.73 | 0.58 | 0.22 | 0.31 | 1.34 | 0.47 | 0.08 | 7.47 | 0.05 | 0.41 |
| 16 | Meat, fish and seafood food preparations nes | 3.66 | 0.31 | 0.12 | 1.56 | 0.52 | 1.37 | 0.28 | 1.93 | 0.13 | 0.32 |
| 94 | Furniture, lighting, signs, prefabricated buildings | 3.58 | 0.09 | 0.33 | 2.43 | 0.24 | 1.18 | 1.15 | 0.37 | 0.15 | 1.05 |
| 42 | Articles of leather, animal gut, harness, travel goods | 3.31 | 0.07 | 0.15 | 3.91 | 2.96 | 0.43 | 0.10 | 0.16 | 0.08 | 1.36 |
| 11 | Milling products, malt, starches, | 3.29 | 3.37 | 3.60 | 0.34 | 0.30 | 0.35 | 0.33 | 0.30 | 0.07 | 1.37 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | inulin, wheat gluten | | | | | | | | | |
| 40 | Rubber and articles thereof | 2.93 | 0.13 | 0.88 | 0.78 | 0.89 | 5.34 | 3.04 | 0.16 | 1.26 | 0.75 |
| 50 | Silk | 2.44 | 0.02 | 0.33 | 4.27 | 8.51 | 0.04 | 0.01 | 0.16 | 1.18 | 0.86 |
| 14 | Vegetable plaiting | 2.40 | 0.04 | 0.14 | 1.15 | 5.09 | 8.45 | 1.14 | 1.93 | 0.02 | 0.71 |

**Table 5.7a (continued)**

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 63 | Other made textile articles, sets, worn clothing etc | 2.37 | 0.15 | 3.98 | 3.81 | 4.36 | 0.51 | 0.20 | 0.37 | 0.50 | 0.53 |

**Table 5.8 Products with revealed comparative advantage in the manufacturing sector**

| Code | Sector | RCA VN | RCA China | RCA Korea | RCA EU27 |
|---|---|---|---|---|---|
| 76 | Aluminium and articles thereof | 0.18 | 0.88 | 0.51 | 0.63 |
| 78 | Lead and articles thereof | 0.12 | 0.41 | 0.78 | 0.52 |
| 79 | Zinc and articles thereof | 0.23 | 0.31 | 2.33 | 0.47 |
| 80 | Tin and articles thereof | 2.11 | 0.51 | 0.34 | 0.39 |
| 81 | Other base metals, cermets, articles thereof | 0.11 | 2.31 | 0.57 | 0.92 |
| 82 | Tools, implements, cutlery, etc of base metal | 0.68 | 1.43 | 0.86 | 1.20 |
| 83 | Miscellaneous articles of base metal | 0.26 | 1.65 | 0.48 | 1.21 |
| 84 | Boilers, machinery; nuclear reactors, etc | 0.32 | 1.39 | 0.8 | 1.45 |
| 85 | Electrical, electronic equipment | 0.49 | 1.99 | 1.94 | 0.85 |
| 86 | Railway, tramway locomotives, rolling stock, equipment | 0.02 | 2.65 | 0.46 | 0.94 |
| 87 | Vehicles other than railway, tramway | 0.12 | 0.31 | 1.31 | 1.13 |
| 88 | Aircraft, spacecraft, and parts thereof | 0.02 | 0.08 | 0.12 | 2.07 |
| 89 | Ships, boats and other floating structures | 0.66 | 1.37 | 9.69 | 1.16 |
| 90 | Optical, photo, technical, medical, etc apparatus | 0.22 | 1.02 | 2.27 | 1.37 |
| 91 | Clocks and watches and parts thereof | 0.15 | 0.95 | 0.11 | 0.75 |

| | | | | |
|---|---|---|---|---|
| 92 Musical instruments, parts and accessories | 0.62 | 2.64 | 1.09 | 0.89 |
| 93 Arms and ammunition, parts and accessories thereof | 0 | 0.09 | 0.91 | 2.39 |
| 94 Furniture, lighting, signs, prefabricated buildings | 3.58 | 2.43 | 0.15 | 1.05 |
| 95 Toys, games, sports requisites | 0.59 | 4.08 | 0.16 | 0.48 |
| 96 Miscellaneous manufactured articles | 1.09 | 3.07 | 0.69 | 0.91 |
| 97 Works of art, collectors pieces and antiques | 0.01 | 0.04 | 1.45 | 2.48 |

**Table 5.9 Challenged sectors**

| HS Code | Product | RCA VN |
|---|---|---|
| 49 | Printed books, newspapers, pictures etc | 0.07 |
| 32 | Tanning, dyeing extracts, tannins, derivs,pigments etc | 0.07 |
| 36 | Explosives, pyrotechnics, matches, pyrophorics, etc | 0.07 |
| 01 | Live animals | 0.06 |
| 86 | Railway, tramway locomotives, rolling stock, equipment | 0.02 |
| 18 | Cocoa and cocoa preparations | 0.02 |
| 30 | Pharmaceutical products | 0.02 |
| 88 | Aircraft, spacecraft, and parts thereof | 0.02 |
| 97 | Works of art, collectors pieces and antiques | 0.01 |
| 37 | Photographic or cinematographic goods | 0.01 |
| 45 | Cork and articles of cork | 0.01 |
| 47 | Pulp of wood, fibrous cellulosic material, waste etc | 0.00 |
| 75 | Nickel and articles thereof | 0.00 |
| 93 | Arms and ammunition, parts and accessories thereof | 0.00 |

**Table 5.10 Sectors subject to competition**

| HS Code | Product Description | Potentially Strong Exporter to Vietnam with Preferences |
|---|---|---|
| 040210 | Milk powder not exceeding 1.5% fat | New Zealand |
| 040221 | Milk and cream powder unsweetened exceeding 1.5% fat | New Zealand |
| 080131 | Cashew nuts, in shell, fresh or dried | India |
| 080132 | Cashew nuts, without shell, fresh or dried | India |
| 080290 | Nuts edible, fresh or dried, whether or not shelled or peeled, nes | New Zealand |
| 080610 | Grapes, fresh | New Zealand |
| 080810 | Apples, fresh | New Zealand |
| 190110 | Prep of cereals,flour,starch/milk f infant use,put up f retail sale | Korea |
| 190190 | Malt extract&food prep of Ch 19 <50% cocoa&hd 0401 to 0404 < 10% cocoa | New Zealand |
| 190531 | Sweet biscuits | Korea |
| 200969 | Grape juice, incl. grape must, unfermented, Brix value > 30 at 20°C, w | Australia |
| 200971 | Apple juice, unfermented, Brix value <= 20 at 20°C, whether or not con | New Zealand |
| 220210 | Waters incl mineral&aeratd,containg sugar o sweeteng matter o flavourd | Korea |
| 220290 | Non-alcoholic beverages nes,excludg fruit/veg juices of headg No 20.09 | Korea |
| 220421 | Grape wines nes,incl fort&grape must,unfermntd by add alc in ctnr< td> | New Zealand |
| 220600 | Fermented beverages nes (for example, cider, perry, mead, etc) | Korea |
| 240110 | Tobacco, unmanufactured, not stemmed or stripped | India |
| 240120 | Tobacco, unmanufactured, partly or wholly stemmed or stripped | India |
| 240130 | Tobacco refuse | India |

| | | |
|---|---|---|
| 271011 | Aviation spirit | China |
| 271019 | Light petroleum distillates nes | China |
| 600191 | Pile knitted or crocheted fabrics, of cotton, nes | India |
| 600192 | Pile knitted or crocheted fabrics, of man-made fibres, nes | India |
| 630710 | Floor-cloths,dish-cloths,dusters & similar cleaning cloths,of tex mat | Korea |
| 721420 | Bars & rods,i/nas,hr,hd or he,cntg indent,ribs,etc,prod dur rp/tar,nes | China |
| 840790 | Engines, spark-ignition type nes | China |
| 841510 | Air conditioning machines window or wall types, self-contained | China |
| 841590 | Parts of air conditioning machines | China |
| 845090 | Parts of household or laundry-type washg machines, | China |
| 850910 | Domestic vacuum cleaners | China |
| 850940 | Domestic food grinders and mixers; fruit or vegetable juice extractors | China |
| 871120 | Motorcycles with reciprocatg piston engine displacg > 50 cc to 250 cc | India |

**Table 5.10 (continued)**

| | | |
|---|---|---|
| 55xxxx | Woven fabrics of all sorts | China |
| 60xxxx | Fabrics of all sorts | Korea, New Zealand (600199 only) |
| 61xxxx | Parts of garments/of clothg accessories of all sorts | Korea |
| 85xxxx | Electrical and electronics of all sorts | China |
| 87xxxx | Motor vehicles and parts of all sorts | Korea, China |
| 080810 | Apples, fresh | New Zealand |

**Table 5.11 Sectors of interest in Indian FTA**

| HS Code | Product Name |
|---|---|
| 09 | Coffee, tea, matï and spices. |
| 85 | Electrical mchy equip parts thereof; sound record |
| 72 | Iron and steel. |
| 27 | Mineral fuels, oils & product of their distillati |
| 25 | Salt; sulphur; earth & ston; plastering mat; lime |
| 40 | Rubber and articles thereof. |
| 73 | Articles of iron or steel. |
| 31 | Fertilisers. |
| 39 | Plastics and articles thereof. |
| 13 | Lac; gums, resins & other vegetable saps & extrac |
| 64 | Footwear, gaiters and the like; parts of such art |
| 44 | Wood and articles of wood; wood charcoal. |
| 41 | Raw hides and skins (other than furskins) and lea |
| 84 | Nuclear reactors, boilers, mchy & mech appliance; |
| 08 | Edible fruit and nuts; peel of citrus fruit or me |
| 60 | Knitted or crocheted fabrics. |
| 68 | Art of stone, plaster, cement, asbestos, mica/sim |
| 28 | Inorgn chem; compds of prec mtl, radioact element |
| 34 | Soap, organic surface-active agents, washing prep |
| 50 | Silk. |

**Table 5.11a Tariff lines of interest in Indian FTA**

| HS Code | Product Description | Tariff % |
|---|---|---|
| 620469 | Womens/girls trousers & shorts,of other textile materials,not knitted | 32.6 |
| 620463 | Womens/girls trousers and shorts, of synthetic fibres, not knitted | 10 |
| 620439 | Womens/girls jackets, of other textile materials, not knitted | 26.1 |
| 620349 | Mens/boys trousers and shorts, of other textile materials, not knitted | 34.9 |
| 620343 | Mens/boys trousers and shorts, of synthetic fibres, not knitted | 27.6 |
| 620342 | Mens/boys trousers and shorts, of cotton, not knitted | 39.5 |
| 620339 | Mens/boys jackets and blazers, of other textile materials, not knitted | 107.6 |
| 620323 | Mens/boys ensembles, of synthetic fibres, not knitted | 28.6 |
| 611020 | Pullovers, cardigans and similar articles of cotton, knitted | 22.8 |
| 611030 | Pullovers, cardigans and similar articles of man-made fibres, knitted | 27.9 |
| 611090 | Pullovers,cardigans&similar articles of oth textile materials,knittd | 20 |
| 610429 | Womens/girls ensembles, of other textile materials, knitted | 10 |
| 610439 | Womens/girls jackets, of other textile materials, knitted | 10 |
| 080132 | Cashew nuts, without shell, fresh or dri ed | 30 |
| 854460 | Electric conductors, for a voltage exceeding 1,000 V, nes | 7.5 |
| 160510 | Crab, prepared or preserved | 30 |
| 160520 | Shrimps and prawns, prepared or preserved | 30 |
| 160540 | Crustaceans nes, prepared or preserved | 30 |
| 160590 | Molluscs and other aquatic invertebrates prepared or preserved | 30 |

**Table 5.12 Sectors of interest in Korea FTA**

| HS Code | Product Name |
|---|---|
| 07 | Edible vegetables and certain roots and tubers. |
| 09 | Coffee, tea, matï and spices. |
| 03 | Fish & crustacean, mollusc & other aquatic invert |
| 64 | Footwear, gaiters and the like; parts of such art |
| 16 | Prep of meat, fish or crustaceans, molluscs etc |
| 62 | Art of apparel & clothing access, not knitted/cro |
| 85 | Electrical mchy equip parts thereof; sound record |
| 55 | Man-made staple fibres. |
| 27 | Mineral fuels, oils & product of their distillati |
| 63 | Other made up textile articles; sets; worn clothi |
| 52 | Cotton. |
| 11 | Prod.mill.indust; malt; starches; inulin; wheat g |
| 40 | Rubber and articles thereof. |
| 61 | Art of apparel & clothing access, knitted or croc |
| 44 | Wood and articles of wood; wood charcoal. |
| 35 | Albuminoidal subs; modified starches; glues; enzy |
| 94 | Furniture; bedding, mattress, matt support, cushi |
| 76 | Aluminium and articles thereof. |
| 12 | Oil seed, oleagi fruits; miscell grain, seed, fru |

**Table 5.12a Tariff lines of interest in Korea FTA**

| HS Code | Product Description | Tariff % |
|---|---|---|
| 121120 | Ginseng roots usd primly in pharm,perf,insecticide,fungicide/sim purp | 18.6 |
| 110814 | Manioc (cassava) starch | 306.3 |
| 71410 | Manioc (cassava), fresh or dried, whether or not sliced or pelleted | 21.3 |
| 350510 | Dextrins and other modified starches | 195.5 |
| 030799 | Molluscs nes,shelld o not&aquatic invert nes,fz,drid,saltd o in brine | 14.2 |
| 030759 | Octopus, frozen, dried, salted or in brine | 13 |
| 030791 | Molluscs nes,shelld/not,and aquatic invertebrates nes,live,fr/chilld | 11.4 |
| 030741 | Cuttle fish and squid, shelled or not, live, fresh or chilled | 10 |
| 030749 | Cuttle fish and squid,shelled or not,frozen,dried,salted or in brine | 10 |
| 030729 | Scallops,incl queen scallops,shelld o not,frozen,drid,saltd o in brine | 8.7 |
| 030613 | Shrimps and prawns, frozen, in shell or not, including boiled in shell | 20 |
| 030623 | Shrimps & prawns,not frozen,in shell or not,including boiled in shell | 20 |
| 030624 | Crabs, not frozen, in shell or not, including boiled in shell | 17.2 |
| 030614 | Crabs frozen, in shell or not, including boiled in shell | 13.5 |
| 030619 | Crustaceans nes, frozen, in shell or not including boiled in shell | 13 |
| 030621 | Rock lobster&oth sea crawfish not fz,in shell/not,incl boild in shell | 13 |
| 030622 | Lobsters nes, not frozen, in shell or not, including boiled in shell | 13 |
| 030629 | Crustaceans nes,not frozen,in shell or not,including boiled in shell | 13 |
| 030611 | Rock lobster&oth sea crawfish,frozen in shell/not,incl boild in shell | 13 |
| 030612 | Lobsters nes, frozen, in shell or not, including boiled in shell | 13 |
| 030569 | Fish nes, salted and in brine, but not dried or smoked | 14.6 |
| 030559 | Fish nes, dried, whether or not salted but not smoked | 13.8 |
| 030510 | Fish meal fit for human consumption | 13 |
| 030530 | Fish fillets, dried, salted or in brine but not smoked | 13 |

**Table 5.13 Sectors of interest in China FTA**

| HS Code | Product Name |
|---|---|
| 27 | Mineral fuels, oils & product of their distillati |
| 08 | Edible fruit and nuts; peel of citrus fruit or me |
| 85 | Electrical mchy equip parts thereof; sound record |
| 07 | Edible vegetables and certain roots and tubers. |
| 64 | Footwear, gaiters and the like; parts of such art |
| 40 | Rubber and articles thereof. |
| 84 | Nuclear reactors, boilers, mchy & mech appliance; |
| 52 | Cotton. |
| 11 | Prod.mill.indust; malt; starches; inulin; wheat g |
| 70 | Glass and glassware. |
| 44 | Wood and articles of wood; wood charcoal. |
| 41 | Raw hides and skins (other than furskins) and lea |
| 62 | Art of apparel & clothing access, not knitted/cro |
| 09 | Coffee, tea, matï and spices. |
| 54 | Man-made filaments. |
| 03 | Fish & crustacean, mollusc & other aquatic invert |
| 39 | Plastics and articles thereof. |
| 94 | Furniture; bedding, mattress, matt support, cushi |
| 95 | Toys, games & sports requisites; parts & access t |
| 61 | Art of apparel & clothing access, knitted or croc |

**Table 5.14 Sectors of interest in AANZFTA (Australia)**

| HS Code | Product Name |
|---|---|
| 71 | Natural/cultured pearls, prec stones & metals, co |
| 71 | Natural/cultured pearls, prec stones & metals, co |
| 94 | Furniture; bedding, mattress, matt support, cushi |
| 94 | Furniture; bedding, mattress, matt support, cushi |
| 64 | Footwear, gaiters and the like; parts of such art |
| 64 | Footwear, gaiters and the like; parts of such art |
| 62 | Art of apparel & clothing access, not knitted/cro |
| 62 | Art of apparel & clothing access, not knitted/cro |
| 61 | Art of apparel & clothing access, knitted or croc |
| 61 | Art of apparel & clothing access, knitted or croc |

**Table 5.14 Sectors of interest in AANZFTA (New Zealand)**

| HS Code | Product Name |
|---|---|
| 64 | Footwear, gaiters and the like; parts of such art |
| 94 | Furniture; bedding, mattress, matt support, cushi |
| 62 | Art of apparel & clothing access, not knitted/cro |
| 85 | Electrical mchy equip parts thereof; sound record |
| 61 | Art of apparel & clothing access, knitted or croc |
| 42 | Articles of leather; saddlery/harness; travel goo |

**Table 5.14a Tariff lines of interest in AANZ FTA**

| HS Code | Product Description | Tariff (Aus) | Tariff (NZ) |
|---|---|---|---|
| 640319 | Sports footwear,o/t ski,outr sole of rbr/plas/leather&upper of leather | 10 | 8.3 |
| 640399 | Footwear, outer soles of rubber/plastics uppers of leather, nes | 10 | 8.3 |
| 640320 | Footwear,outr sole/uppr of leathr,strap across the instep/arnd big toe | 0 | 8.3 |
| 640391 | Footwear,outer soles of rubber/plast uppers of leather covg ankle nes | 10 | 8.3 |
| 620462 | Womens/girls trousers and shorts, of cotton, not knitted | 17.5 | 12.5 |
| 620439 | Womens/girls jackets, of other textile materials, not knitted | 17.5 | 12.5 |
| 620469 | Womens/girls trousers & shorts,of other textile materials,not knitted | 17.5 | 12.5 |
| 620463 | Womens/girls trousers and shorts, of synthetic fibres, not knitted | 17.5 | 12.5 |
| 620442 | Womens/girls dresses, of cotton, not knitted | 17.5 | 12.5 |
| 620433 | Womens/girls jackets, of synthetic fibres, not knitted | 17.5 | 12.5 |
| 620449 | Womens/girls dresses, of other textile materials, not knitted | 17.5 | 12.5 |
| 620413 | Womens/girls suits, of synthetic fibres, not knitted | 17.5 | 12.5 |
| 620339 | Mens/boys jackets and blazers, of other textile materials, not knitted | 17.5 | 12.5 |
| 620343 | Mens/boys trousers and shorts, of synthetic fibres, not knitted | 17.5 | 12.5 |
| 620349 | Mens/boys trousers and shorts, of other textile materials, not knitted | 17.5 | 12.5 |
| 620342 | Mens/boys trousers and shorts, of cotton, not knitted | 17.5 | 12.5 |
| 620329 | Mens/boys ensembles, of other textile materials, not knitted | 17.5 | 12.5 |
| 620333 | Mens/boys jackets and blazers, of synthetic fibres, not knitted | 17.5 | 12.5 |
| 620312 | Mens/boys suits, of synthetic fibres, not knitted | 17.5 | 12.5 |
| 611030 | Pullovers, cardigans and similar articles of man-made fibres, knitted | 17.5 | 12.5 |
| 611020 | Pullovers, cardigans and similar articles of cotton, knitted | 17.5 | 12.5 |
| 611090 | Pullovers,cardigans&similar articles of oth textile materials,knittd | 17.5 | 12.5 |
| 610439 | Womens/girls jackets, of other textile materials, knitted | 17.5 | 12.5 |
| 610463 | Womens/girls trousers and shorts, of synthetic fibres, knitted | 17.5 | 12.5 |

| | | | |
|---|---|---|---|
| 610469 | Womens/girls trousers and shorts, of other textile materials, knitted | 17.5 | 12.5 |
| 610459 | Womens/girls skirts, of other textile materials, knitted | 17.5 | 12.5 |
| 610433 | Womens/girls jackets, of synthetic fibres, knitted | 17.5 | 12.5 |
| 610462 | Womens/girls trousers and shorts, of cotton, knitted | 17.5 | 12.5 |
| 610452 | Womens/girls skirts, of cotton, knitted | 17.5 | 12.5 |
| 610449 | Womens/girls dresses, of other textile materials, knitted | 17.5 | 12.5 |

**Table 5.16 Sectors of greatest potential import penetration into Vietnam in Indian FTA**

| HS Code | Product Name |
|---|---|
| 23 | Residues & waste from the food indust; prepr ani |
| 39 | Plastics and articles thereof. |
| 03 | Fish & crustacean, mollusc & other aquatic invert |
| 52 | Cotton. |
| 24 | Tobacco and manufactured tobacco substitutes |
| 48 | Paper & paperboard; art of paper pulp, paper/pape |
| 76 | Aluminium and articles thereof. |
| 30 | Pharmaceutical products. |
| 55 | Man-made staple fibres. |
| 72 | Iron and steel. |
| 85 | Electrical mchy equip parts thereof; sound record |
| 38 | Miscellaneous chemical products. |
| 41 | Raw hides and skins (other than furskins) and lea |

More specifically, products at the 6-digit level include:

| | |
|---|---|
| 871120 | Motorcycles with reciprocatg piston engine displacg > 50 cc to 250 cc |

| | |
|---|---|
| 600192 | Pile knitted or crocheted fabrics, of man-made fibres, nes |
| 240110 | Tobacco, unmanufactured, not stemmed or stripped |
| 240120 | Tobacco, unmanufactured, partly or wholly stemmed or stripped |
| 080131 | Cashew nuts, in shell, fresh or dried |

**Table 5.17 Sectors of greatest potential import penetration in Korea FTA**

| HS Code | Product Name |
|---|---|
| 87 | Vehicles o/t railw/tramw roll-stock, pts & access |
| 55 | Man-made staple fibres. |
| 85 | Electrical mchy equip parts thereof; sound record |
| 39 | Plastics and articles thereof. |
| 58 | Special woven fab; tufted tex fab; lace; tapestri |
| 52 | Cotton. |
| 62 | Art of apparel & clothing access, not knitted/cro |
| 54 | Man-made filaments. |
| 60 | Knitted or crocheted fabrics. |
| 27 | Mineral fuels, oils & product of their distillati |
| 84 | Nuclear reactors, boilers, mchy & mech appliance; |
| 64 | Footwear, gaiters and the like; parts of such art |
| 96 | Miscellaneous manufactured articles. |
| 48 | Paper & paperboard; art of paper pulp, paper/pape |
| 72 | Iron and steel. |

**Table 5.18 Sectors of greatest potential import penetration in China FTA**

| HS code | Product Name |
|---|---|
| 27 | Mineral fuels, oils & product of their distillati |
| 08 | Edible fruit and nuts; peel of citrus fruit or me |
| 85 | Electrical mchy equip parts thereof; sound record |
| 07 | Edible vegetables and certain roots and tubers. |
| 64 | Footwear, gaiters and the like; parts of such art |
| 40 | Rubber and articles thereof. |
| 84 | Nuclear reactors, boilers, mchy & mech appliance; |
| 52 | Cotton. |
| 11 | Prod.mill.indust; malt; starches; inulin; wheat g |
| 70 | Glass and glassware. |
| 44 | Wood and articles of wood; wood charcoal. |
| 41 | Raw hides and skins (other than furskins) and lea |
| 62 | Art of apparel & clothing access, not knitted/cro |
| 09 | Coffee, tea, matï and spices. |
| 54 | Man-made filaments. |
| 03 | Fish & crustacean, mollusc & other aquatic invert |
| 39 | Plastics and articles thereof. |
| 94 | Furniture; bedding, mattress, matt support, cushi |
| 95 | Toys, games & sports requisites; parts & access t |
| 61 | Art of apparel & clothing access, knitted or croc |

**Table 5.19 Sectors of greatest potential import penetration in AANZFTA (Australia)**

| HS Code | Product Name |
|---|---|
| 10 | Cereals |
| 11 | Prod.mill.indust; malt; starches; inulin; wheat g |
| 71 | Natural/cultured pearls, prec stones & metals, co |
| 04 | Dairy prod; birds' eggs; natural honey; edible pr |
| 76 | Aluminium and articles thereof. |
| 08 | Edible fruit and nuts; peel of citrus fruit or me |
| 85 | Electrical mchy equip parts thereof; sound record |
| 74 | Copper and articles thereof. |
| 39 | Plastics and articles thereof. |
| 44 | Wood and articles of wood; wood charcoal. |
| 72 | Iron and steel. |
| 19 | Prep.of cereal, flour, starch/milk; pastrycooks' |
| 84 | Nuclear reactors, boilers, mchy & mech appliance; |
| 52 | Cotton. |
| 03 | Fish & crustacean, mollusc & other aquatic invert |
| 22 | Beverages, spirits and vinegar. |
| 30 | Pharmaceutical products. |
| 55 | Man-made staple fibres. |
| 32 | Tanning/dyeing extract; tannins & derivs; pigm et |
| 41 | Raw hides and skins (other than furskins) and lea |
| 23 | Residues & waste from the food indust; prepr ani |
| 02 | Meat and edible meat offal |
| 48 | Paper & paperboard; art of paper pulp, paper/pape |
| 20 | Prep of vegetable, fruit, nuts or other parts of |

**Table 5.20 Sectors of greatest potential import penetration in ASNZFTA (New Zealand)**

| HS Code | Product Name |
|---|---|
| 04 | Dairy prod; birds' eggs; natural honey; edible pr |
| 44 | Wood and articles of wood; wood charcoal. |
| 19 | Prep.of cereal, flour, starch/milk; pastrycooks' |
| 23 | Residues & waste from the food indust; prepr ani |
| 84 | Nuclear reactors, boilers, mchy & mech appliance; |
| 48 | Paper & paperboard; art of paper pulp, paper/pape |
| 03 | Fish & crustacean, mollusc & other aquatic invert |
| 47 | Pulp of wood/of other fibrous cellulosic mat; was |
| 02 | Meat and edible meat offal |
| 35 | Albuminoidal subs; modified starches; glues; enzy |
| 21 | Miscellaneous edible preparations. |
| 85 | Electrical mchy equip parts thereof; sound record |
| 76 | Aluminium and articles thereof. |
| 10 | Cereals |
| 94 | Furniture; bedding, mattress, matt support, cushi |

**Table 5.21 The most affected products based on Table A5.21:**

| Tariff Line Code | Exports Before ($'000) | Exports After ($'000) | Exports Change in Revenue ($'000) | Description |
|---|---|---|---|---|
| TOTAL | 387,536.27 | 775,649.32 | 388,113.06 | |
| 090111 | 10,605.90 | 103,534.36 | 92,928.45 | Coffee (excl. roasted and decaffeinated) |
| 730840 | 11,837.32 | 101,450.63 | 89,613.31 | Equipment for scaffolding, shuttering, propping or pit-propping (excl. composite sheetpiling products and formwork panels for poured-in-place concrete, which have the characteristics of moulds) |
| 090220 | 1,386.88 | 76,062.99 | 74,676.11 | Green tea in immediate packings of > 3 kg |
| 350691 | 975.603 | 11,113.25 | 10,137.65 | Adhesives based on polymers of heading 3901 to 3913 or on rubber (excl. products suitable for use as glues or adhesives put up for retail sale as glues or adhesives, with a net weight of <= 1 kg) |
| 252210 | 1,607.61 | 11,176.47 | 9,568.87 | Quicklime |
| 441879 | 844.084 | 8,446.62 | 7,602.53 | Assembled flooring panels |
| 090411 | 9,037.21 | 15,818.83 | 6,781.63 | Pepper of the genus Piper, neither crushed nor ground |

**Table 5.22 The most affected products**

| Tariff Line Code | Exports Before ($'000) | Exports After ($'000) | Export Change in Revenue ($'000) | Description |
|---|---|---|---|---|
| TOTAL: | 1096553.391 | 1296308.160 | 199754.769 | |
| 271011 | 23,969.87 | 55,453.66 | 31,483.80 | Upholstered seats, with wooden frames (excl. convertible into beds) |
| 030613 | 63,532.82 | 83,637.47 | 20,104.66 | Frozen shrimps and prawns, whether in shell or not, incl. shrimps and prawns in shell, cooked by steaming or by boiling in water |
| 030759 | 49,646.72 | 60,220.76 | 10,574.04 | Octopus "Octopus spp.", frozen, dried, salted or in brine, with or without shell |
| 270900 | 121,582.32 | 130,393.52 | 8,811.20 | Petroleum oils and oils obtained from bituminous minerals, crude |
| 071410 | 5,733.54 | 13,369.88 | 7,636.34 | Bituminous or oil shale and tar sands |
| 030749 | 47,513.02 | 54,133.17 | 6,620.16 | Cuttle fish "Sepia officinalis, Rossia macrosoma, Sepiola spp." and squid "Ommastrephes spp., Loligo spp., Nototodarus spp., Sepioteuthis spp.", frozen, dried, salted or in brine, with or without shell |
| 160419 | 29,689.77 | 35,742.40 | 6,052.64 | Prepared or preserved fish, whole or in pieces (excl. minced and salmon, herrings, sardines, sardinella, brisling or sprats, tunas, skipjack and Atlantic bonito, bonito "sarda spp.", mackerel and anchovies) |
| 030559 | 7,915.65 | 13,555.16 | 5,639.51 | Dried fish, salted, not smoked (excl. cod and other fillets) |
| 854460 | 36,678.87 | 41,622.28 | 4,943.41 | Electric conductors, for a voltage > 1.000 V, insulated, n.e.s. |

**Table 5.22**
**(continued)**

| | | | | |
|---|---|---|---|---|
| 640319 | 28,672.43 | 32,984.03 | 4,311.60 | Sports footwear, with outer soles of rubber, plastics, leather or composition leather and uppers of leather (excl. ski-boots, cross-country ski footwear, snowboard boots and skating boots with ice or roller skates attached) |
| 160520 | 14,314.88 | 18,155.18 | 3,840.30 | Shrimps and prawns, prepared or preserved |

**Table 5.23 The most affected products**

| Tariff Line Code | Exports Before ($'000) | Exports After ($'000) | Export Change In Revenue ($'000) | Description |
|---|---|---|---|---|
| TOTAL: | 1,157,098.539 | 1,270,956.803 | 113,858.264 | |
| 090111 | 27,511.34 | 43,538.93 | 16,027.60 | Coffee (excl. roasted and decaffeinated) |
| 640299 | 22,687.35 | 33,787.35 | 11,100.01 | Footwear with outer soles and uppers of rubber or plastics (excl. covering the ankle or with upper straps or thongs assembled to the sole by means of plugs, waterproof footwear of heading 6401, sports footwear, orthopaedic footwear and toy footwear) |
| 850110 | 111,615.46 | 121,682.81 | 10,067.35 | Motors of an output <= 37,5 W |
| 271019 | 16,993.83 | 26,065.03 | 9,071.20 | Medium oils and preparations, of petroleum or bituminous minerals, n.e.s. |
| 702000 | 53,063.95 | 58,589.73 | 5,525.78 | Articles of glass, n.e.s. |
| 640399 | 63,835.23 | 68,308.69 | 4,473.46 | Footwear with outer soles of rubber, plastics or composition leather, with uppers of leather (excl. covering the ankle, incorporating a protective metal toecap, made on a base or platform of wood, without in-soles, sports footwear, orthopaedic footwear and toy footwear) |
| 852990 | 74,132.14 | 77,335.22 | 3,203.07 | Parts suitable for use solely or principally with transmission and reception apparatus for radio-telephony, radio-telegraphy, radio-broadcasting, television, television cameras, still image video cameras and other video camera recorders, radar apparatus, radio navigational aid apparatus or radio remote control apparatus, n.e.s. (excl. for aerials and aerial reflectors of all kinds) |

**Table 5.23 (continued)**

| | | | | |
|---|---|---|---|---|
| 400129 | 16,408.70 | 19,363.43 | 2,954.73 | Natural rubber in primary forms or in plates, sheets or strip (excl. smoked sheets, technically specified natural rubber "TSNR" and natural rubber latex, whether or not prevulcanised) |
| 841459 | 24,193.38 | 26,777.53 | 2,584.15 | Fans (excl. table, floor, wall, window, ceiling or roof fans, with a self-contained electric motor of an output <= 125 W) |
| 110814 | 73,124.16 | 74,829.30 | 1,705.13 | Manioc starch |

**Table 5.24 The most affected products *AANZFTA***

| Australia | Exports | Exports | Export | |
|---|---|---|---|---|
| **Tariff Line Code** | **Before ($'000)** | **After ($'000)** | **Change In Revenue ($'000)** | **Description** |
| TOTAL: | 356,608.121 | 409,788.895 | 53,180.77 | |
| 711319 | 16,391.18 | 19,334.56 | 2,943.38 | Articles of jewellery and parts thereof, of precious metal other than silver, whether or not plated or clad with precious metal (excl. articles > 100 years old) |
| 640399 | 12,544.39 | 15,301.44 | 2,757.05 | Footwear with outer soles of rubber, plastics or composition leather, with uppers of leather (excl. covering the ankle, incorporating a protective metal toecap, made on a base or platform of wood, without in-soles, sports footwear, orthopaedic footwear and toy footwear) |
| 841989 | 13,800.65 | 16,506.14 | 2,705.50 | Machinery, plant or labouratory equipment, whether or not electrically heated, for the treatment of materials by a process involving a change of temperature such as heating, cooking, roasting, sterilizing, pasteurizing, steaming, evaporating, vapourizing, condensing or cooling, n.e.s. (excl. machinery used for domestic purposes and furnaces, ovens and other equipment of heading 8514) |
| 940360 | 30,522.12 | 32,993.43 | 2,471.32 | Wooden furniture (excl. for offices, kitchens and bedrooms, and seats) |

**Table 5.25 The most affected products *AANZFTA***

| New | Exports | Exports | Export |
|---|---|---|---|

| Zealand | | | | |
|---|---|---|---|---|
| **Tariff Line Code** | **Before ($'000)** | **After ($'000)** | **Change In Revenue ($'000)** | **Description** |
| TOTAL | 76,490.49 | 84,758.63 | 8,268.15 | |
| 640399 | 4,608.03 | 5,447.55 | 839.519 | Footwear with outer soles of rubber, plastics or composition leather, with uppers of leather (excl. covering the ankle, incorporating a protective metal toecap, made on a base or platform of wood, without in-soles, sports footwear, orthopaedic footwear and toy fw) |
| 940360 | 11,123.49 | 11,960.49 | 837.002 | Wooden furniture (excl. for offices, kitchens and bedrooms, and seats) |
| 940350 | 7,844.14 | 8,408.00 | 563.863 | Wooden furniture for bedrooms (excl. seats) |

**Table 5.26 The most affected products AIFTA**

| Tariff Line Code | Imports Before ($'000) | Imports After ($'000) | Import Change in Revenue ($'000) | Description |
|---|---|---|---|---|
| TOTAL: | 239,273.792 | 328,983.833 | 89,710.04 | |
| 240120 | 12,450.16 | 27,186.61 | 14,736.45 | Tobacco, partly or wholly stemmed/stripped, otherwise unmanufactured |
| 030349 | 1,310.60 | 13,208.91 | 11,898.31 | Frozen tunas of the genus "Thunnus" (excl. Thunnus alalunga, Thunnus albacares, Thunnus obesus, Thunnus thynnus and Thunnus maccoyii) |
| 030613 | 5,867.37 | 11,627.61 | 5,760.25 | Frozen shrimps and prawns, whether in shell or not, incl. shrimps and prawns in shell, cooked by steaming or by boiling in water |
| 300490 | 28,254.97 | 31,856.59 | 3,601.62 | Medicaments consisting of mixed or unmixed products for therapeutic or prophylactic purposes, put up in measured doses "incl. those in the form of transdermal administration" or in forms or packings for retail sale (excl. medicaments containing antibiotics, medicaments containing hormones or steroids used as hormones, but not containing antibiotics, medicaments containing alkaloids or derivates thereof but not containing hormones or antibiotics and medicaments containing provitamins, vitamins or derivates thereof used as vitamins) |
| 080131 | 224.427 | 3,062.83 | 2,838.41 | Fresh or dried cashew nuts, in shell |
| 410441 | 1,044.42 | 3,839.75 | 2,795.33 | Full grains leather, unsplit and grain splits leather, in the dry state "crust", of hides and skins of bovine "incl. buffalo" or equine animals, without hair on (excl. further prepared) |

**Table 5.27 The most affected products *AKFTA***

| Tariff Line Code | Imports Before ($'000) | Imports After ($'000) | Imports Change in Revenue ($'000) | Description |
|---|---|---|---|---|
| TOTAL: | 2,744,205.06 | 4,568,537.42 | 1,824,332.35 | |
| 551599 | 66,397.76 | 221,885.70 | 155,487.94 | Woven fabrics containing predominantly, but < 85% synthetic staple fibres, other than those mixed principally or solely with wool, fine animal hair, man-made filament or cotton (excl. those of acrylic, modacrylic or polyester staple fibres) |
| 271019 | 431,108.80 | 572,862.20 | 141,753.40 | Medium oils and preparations, of petroleum or bituminous minerals, n.e.s. |
| 870410 | 51,812.67 | 184,760.80 | 132,948.12 | Dumpers for off-highway use |
| 551219 | 41,308.16 | 172,086.18 | 130,778.02 | Woven fabrics containing >= 85% polyester staple fibres by weight, dyed, made of yarn of different colours, or printed |
| 540742 | 6,178.78 | 112,970.54 | 106,791.76 | Woven fabrics of filament yarn containing >= 85% nylon or other polyamides by weight, incl. monofilament of >= 67 decitex and a maximum diameter of <= 1 mm, dyed |
| 560410 | 3,375.63 | 50,628.78 | 47,253.15 | Textile-covered rubber thread and cord |
| 410799 | 44,471.80 | 90,802.57 | 46,330.78 | Leather "incl. parchment-dressed leather" of the portions, strips or sheets of hides and skins of bovine "incl. buffalo" or equine animals, further prepared after tanning or crusting, without hair on (excl. unsplit full grains leather, grain splits leather, chamois leather, patent leather and patent laminated leather, and metallized leather) |
| 271011 | 12,195.56 | 54,691.02 | 42,495.46 | Light oils and preparations, of petroleum or bituminous minerals which >= 90% by volume distil at 210°C |

**Table 5.27 (continued)**

| | | | | |
|---|---|---|---|---|
| 521112 | 8,523.61 | 46,671.02 | 38,147.41 | Woven fabrics of cotton, containing predominantly, but < 85% cotton by weight, mixed principally or solely with man-made fibres and weighing > 200 g/m², in three-thread or four-thread twill, incl. cross twill, unbleached |
| 551339 | 5,054.33 | 38,958.27 | 33,903.94 | Woven fabrics containing predominantly, but < 85% synthetic staple fibres by weight, mixed principally or solely with cotton and weighing <= 170 g/m², made of yarn of different colours (excl. those of polyester staple fibres) |
| 611790 | 2,068.92 | 33,274.49 | 31,205.57 | Parts of garments or clothing accessories, knitted or crocheted, n.e.s. |
| 551519 | 53,300.12 | 83,815.10 | 30,514.97 | Woven fabrics containing predominantly, but < 85% polyester staple fibres by weight, other than those mixed principally or solely with wool or fine animal hair, made-made filament, viscose staple fibres or cotton |
| 540810 | 17,553.42 | 45,499.91 | 27,946.48 | Woven fabrics of high tenacity viscose yarn, incl. monofilament of >= 67 decitex and a maximum diameter of <= 1 mm |
| 870421 | 66,025.86 | 88,325.54 | 22,299.68 | Motor vehicles for the transport of goods, with compression-ignition internal combustion piston engine "diesel or semi-diesel" of a gross vehicle weight <= 5 tonnes (excl. dumpers for off-highway use of subheading 8704.10 and special purpose motor vehicles of heading 8705) |

**Table 5.28 The most affected products *ACFTA***

| Tariff Line Code | Imports Before ($'000) | Imports After ($'000) | Imports Change in Revenue ($'000) | Description |
|---|---|---|---|---|
| TOTAL: | 4,267,310.789 | 7,767,507.468 | 3,500,196.679 | |
| 271011 | 515,708.35 | 2,024,765.08 | 1,509,056.72 | Light oils and preparations, of petroleum or bituminous minerals which >= 90% by volume distil at 210°C |
| 551599 | 98,617.71 | 280,871.11 | 182,253.40 | Woven fabrics containing predominantly, but < 85% synthetic staple fibres, other than those mixed principally or solely with wool, fine animal hair, man-made filament or cotton (excl. those of acrylic, modacrylic or polyester staple fibres) |
| 720719 | 62,821.78 | 229,294.52 | 166,472.74 | Semi-finished products of iron or non-alloy steel containing, by weight, < 0,25% of carbon, of circular cross-section, or of a cross-section other than rectangular or square |
| 271019 | 368,599.43 | 502,243.62 | 133,644.19 | Medium oils and preparations, of petroleum or bituminous minerals, n.e.s. |
| 551219 | 23,413.84 | 99,278.69 | 75,864.85 | Woven fabrics containing >= 85% polyester staple fibres by weight, dyed, made of yarn of different colours, or printed |
| 640620 | 43,623.71 | 118,101.15 | 74,477.43 | Outer soles and heels, of rubber or plastics |
| 521112 | 18,014.52 | 81,645.64 | 63,631.12 | Woven fabrics of cotton, containing predominantly, but < 85% cotton by weight, mixed principally or solely with man-made fibres and weighing > 200 g/m², etc. |

**Table 5.28 (continued)**

| | | | | |
|---|---|---|---|---|
| 870410 | 33,038.03 | 82,566.45 | 49,528.41 | Dumpers for off-highway use |
| 252310 | 11,411.84 | 58,350.81 | 46,938.98 | Cement clinkers |
| 611790 | 2,372.36 | 44,183.58 | 41,811.22 | Parts of garments or clothing accessories, knitted or crocheted, n.e.s. |

**Table 5.29 The most affected products *AANZFTA***

| Australia | Imports | Imports | Imports | |
|---|---|---|---|---|
| **Tariff Line Code** | **Before ($'000)** | **After ($'000)** | **Change in Revenue ($'000)** | **Description** |
| TOTAL: | 345,238.678 | 432,299.698 | 87,061.020 | |
| 100190 | 94,545.39 | 117,000.72 | 22,455.330 | Wheat and meslin (excl. durum wheat) |
| 230110 | 3,303.67 | 13,397.50 | 10,093.824 | Flours, meals and pellets, of meat or offal, unfit for human consumption; greaves |
| 710812 | 76,982.37 | 81,706.49 | 4,724.115 | Gold, incl. gold plated with platinum, unwrought, for non-monetary purposes (excl. gold in powder form) |

| New Zealand | Imports | Imports | Imports | |
|---|---|---|---|---|
| **Tariff Line Code** | **Before ($'000)** | **After ($'000)** | **Change in Revenue ($'000)** | **Description** |
| TOTAL: | 79,554.69 | 113,749.278 | 34,194.59 | |
| 040221 | 28,070.89 | 39,482.47 | 11,411.58 | Milk and cream in solid forms, of a fat content by weight of > 1,5%, unsweetened |
| 230110 | 1,925.14 | 7,810.76 | 5,885.62 | Flours, meals and pellets, of meat or offal, unfit for human consumption; greaves |
| 040210 | 16,971.16 | 22,769.39 | 5,798.23 | Milk and cream in solid forms, of a fat content by weight of <= 1,5% |