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The Vietnamese approach to agriculture in the ASEAN-China FTA

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Abstract

Vietnam, as a member of ASEAN, has negotiated a free trade agreement with China. ASEAN Member States can independently negotiate their tariff reductions. While generally aware of the opportunities access to the large Chinese market may present, Vietnam is concerned about being flooded with Chinese imports, including agricultural products. Hence, in the negotiated agreement there is a long list of exemptions for sensitive products.

A global general equilibrium model, GTAP, is used to assess the potential impacts of the ASEAN-China Free Trade Agreement on the Vietnamese economy with a particular focus on agriculture. Tariff line data are aggregated to eight primary and four processed agricultural sectors. The simulated results following full implementation show estimated static annual national welfare gains of \$1018 million if the agreement is implemented as negotiated and tariff cuts are effective, and this would rise to \$1444 million if the exemptions were removed. In the agricultural sector, the most significant increases in exports would occur in vegetable oils, rice, vegetables and fruit, and processed agricultural products. These are also the sectors with the most notable increases in imports. The negotiated exemptions are limiting imports of beverages and tobacco products. Outside the agricultural sector, there is a projected increase of a wide range of manufactured imports, including fuel and textiles. Textiles are the major source of increasing exports.

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1. Introduction

Vietnam has a relatively open economy with a low average tariff and a high ratio of trade to GDP. However, its tariffs on imports from China are relatively high, while tariffs on Vietnamese exports to China are relatively low. As a member of ASEAN, Vietnam has negotiated a free trade agreement with China (ASEAN China Free Trade Agreement - ACFTA) in which ASEAN Member States can independently negotiate their tariff reductions. Policy makers are aware of the opportunities access to the large Chinese market presents, given Vietnam is a significant trader with China, but nonetheless they are concerned about being flooded with Chinese imports, including agricultural products.

The purpose of this paper is to analyse the potential impacts of the ACFTA on the Vietnamese agricultural sectors using a global general equilibrium model, GTAP. Aggregated tariff line data with some modification enables the differential impact of separate sensitive sectors for Vietnam to be identified and analysed.

The simulated results following full implementation indicate Vietnam would improve its trade and welfare if the agreement is implemented as negotiated and tariff cuts are effective, although the extent of exemptions for sensitive products represent a missed opportunity. At the sectoral level, some reductions can be expected, compared with the baseline, in output of some agricultural sectors. However, generally these changes are relatively small. From an economic perspective, structural adjustment should not be constrained in such circumstances.

The paper is structured as follows. The next section presents trade flows and tariffs, plus aspects of ACFTA such as exemptions of sensitive sectors. The third section describes the GTAP CGE model, the data, sectors and regions, and two scenarios. The fourth section presents the results, setting out trade, welfare and sectoral impacts, while conclusions, limitations and implications are drawn in the final section.

2. Existing trade flows, tariffs and institutional arrangements

Vietnam has diversified away from agriculture in terms of contribution to GDP, employment and trade in what has become a very open economy with few export constraints. Agriculture, though still contributing significantly to the Vietnamese economy, is becoming less important politically than other sectors. Nonetheless, Vietnam has become a major exporter of rice, coffee, and other horticultural products such as cashew nuts with its reforms. Unilateral liberalisation under Doi Moi, which abandoned central planning for effective property rights over land and making production decisions based on market signals, increased

production incentives, production and in some cases exports. Vietnam subsequently entered into multilateral, regional and bilateral trade agreements following these unilateral reforms. The focus here is Vietnam's FTA with China, as a member of ASEAN.

(i) Trade flows

Vietnam is a significant trader with China. In 2008, some 22 per cent of Vietnam's merchandise imports came from China and 6 per cent of its exports went in that direction. China supplies 12 per cent of Vietnam's primary agricultural imports, and is the major supplier of horticultural products, including apples, garlic, mandarins and pears (table 1). However, the main agricultural imports from China are animal feeds and tobacco.²

Table 1 Vietnam's ten most significant imports from China, 2009

HS code	Item	Imports \$m
230400	Oil-cake & other solid residues, whether/not ground/in pellets, from extraction of soyabean oil	78
230990	Preparations of a kind used in animal feeding other than dog/cat food put up for RS	55
240110	Tobacco, not stemmed/stripped	47
100610	Rice in the husk (paddy/rough)	39
080520	Mandarins, incl. tangerines & satsumas; clementines, wilkings & similar citrus hybrids, fresh/dried	28
110710	Malt, not roasted	25
080810	Apples, fresh	23
240120	Tobacco, partly/wholly stemmed/stripped	15
070320	Garlic, fresh/chilled	14
080820	Pears & quinces, fresh	13

Source: Comtrade via WITS.

Notably, China supplies none of Vietnam's most sensitive agricultural import, sugar. In processed agriculture, China is the source of a large share of non-ruminant (pig and poultry) meat, other processed agriculture and tobacco. Outside of agriculture, China is a significant supplier of a range of industrial products, including textiles and apparel.

China is not as important to Vietnam as an export market for agricultural products. It takes 9 per cent of agricultural exports, the most significant of which is manioc (HS 071410), manioc starch (HS 110814), fresh fruit (HS 081090 and 080711), cashew nuts (HS 080132), coffee (HS 090111) and fish products (HS 030499, HS 030379). Outside of

² This listing depends on the level of aggregation, here HS six digit. A four or two digit classification would generate a different ranking.

agriculture, resources (oil), textiles, chemicals, rubber and plastics, wood & paper products and various manufactured goods are of greater importance.

Table 2 provides a summary at a broader level of classification, including the share of trade with China. Industrial products are of greater significance than agriculture. There is a significant trade each way in petroleum products. In agriculture vegetables and fruit is the most significant trade, with around 40 of Vietnam's imports coming from China and a similar share of exports going in the other direction. No doubt a lot of this is cross-border trade, particularly of fresh produce.

Table 2 Vietnam's trade with China, 2008

Sector	Total imports	Share from China	Total exports	Share to China
	\$m	%	\$m	%
Rice	17	82.4	1432	0.6
Other cereals	472	14.0	3	33.3
Oilseeds	51	33.3	71	1.4
Vegetable oils and fats	1263	1.8	40	42.5
Sugar	54	0.0	17	0.0
Vegetables, fruit and nuts	432	40.7	895	38.1
Other crops	521	11.5	2357	1.8
Livestock	182	2.7	157	23.6
Primary agriculture	2992	12	4972	9
Forestry	300	0.3	162	87.7
Fishing	32	6.3	73	11.0
Petroleum and coal products	3691	29.6	5740	11.7
Resources	4023	27	5975	14
Ruminant meat	148	0.0	3	0.0
Non-ruminant meat	188	10.1	70	61.4
Other processed agriculture	1384	9.9	4408	5.7
Beverages and tobacco	485	34.2	113	14.2
Processed agriculture	2205	15	4594	7
Textiles & apparel	6867	28.5	14385	1.8
Chemicals	9178	17.9	2298	14.1
Metal manufactures	8651	24.6	1456	4.2
Wood & paper products	2007	13.5	3347	4.0

Manufactures	17930	23.2	7692	5.3
Industrial	44633	23	29178	4
Total merchandise	53853	22	44719	6

Source: GTAP v8.

(ii) Tariffs and other trade-related policies

Vietnam has a high share of trade to GDP, around 160 per cent over 2007-09, illustrating the country's openness to trade. Vietnam has rather low applied tariffs, 11 per cent, partly because it recently acceded to the WTO, although it previously undertook a great deal of autonomous liberalisation. In spite of the generally low tariffs, it has a relatively high tariffs on agriculture and relatively high tariffs on imports from China. This is summarized in table 3.

Table 3 Bound and applied simple average tariffs

	China	Vietnam
	%	%
Bound tariff	10.0	11.4
Bound tariff agriculture	15.7	18.5
Applied tariff	9.6	10.8
Applied tariff agriculture	15.6	18.9
Applied tariffs on imports from China	-	22.6
Applied tariffs on agricultural imports from China	-	15.3
Applied tariffs on imports from Vietnam	6.3	-
Applied tariffs on agricultural imports from Vietnam	5.2	-

Source: WTO Country Profiles and UNCTAD TRAINS via WITS.

Vietnam's protection in primary agriculture is dominated by sugar. Sugar has a strict licensing regime for governing imports. It was the focus of government rural development and agricultural diversification programs that was strong enough to have survived the opportunity for reform during the WTO accession (Athukorala et al. 2007).

(iii) The ACFTA agreement – exemptions under sensitive, highly sensitive etc

The ASEAN-China FTA was signed in 2002 and renegotiated in 2006 when the more recent ASEAN members, Vietnam, Cambodia, Laos and Myanmar, specified their exemptions for sensitive and highly sensitive products (ASEAN Secretariat 2006). Implementation was to commence in 2010. As far as trade in goods is concerned, tariff

reductions phased in over a number of years. Tariffs on products in the sensitive list were to be reduced to 20 per cent by 2012 and to between 0 and five per cent within the implementation period, and highly sensitive track products were to be reduced to a maximum of 50 per cent. Each ASEAN member has a different list of exemptions. Countries tend to exempt products with high tariffs although not exclusively (see Scollay and Trewin (2006) for analysis of this issue in ASEAN which showed member states exempt products that they did not need to protect for survival as well as products that were always going to require protection to survive). Vietnam was allowed 150 items in its highly sensitive list, plus a longer implementation period than more developed members that joined earlier. The main chapters include 17 (sugar), 24 (tobacco), 40 (rubber), 69 (ceramics), 70 (glass), 72 (steel), 84 (motor bikes), 85 (audio devices) and 87 (motor vehicles).

China with its much broader and larger economy has 101 items in its highly sensitive list. The main items are chapters 10 (rice), 11 (maize), 15 (oils), 17 (sugar), 24 (tobacco), 40 (rubber), 44 (wood products), 48 (paper products), 52 (cotton) and 87 (motor vehicles).

These exemptions are specified at the six digit level from a possible list of 5113 tariffs (so for example Vietnam's sensitive list is about 3 per cent in number of tariff lines but is generally much larger in terms of the domestic production they are attempting to protect. Bilateral tariffs reductions are calculated at the six digit level, using the Gempack utility TASTE, and aggregated to the 23 user specified GTAP sectors shown in table 5. The bilateral tariffs before and after the simulations are shown in this table. From a Vietnamese perspective, the most significant changes are for agricultural products of 'Rice' and 'Vegetables etc' as well as 'Textiles and apparel'. There are relatively small changes to highly protected 'Sugar' and 'Other crops', as well as 'Beverages and Tobacco'. From the perspective of Vietnam's exports to China, most tariffs are reduced to near zero with the exception of 'Rice' which maintains a very high tariff and 'Other cereal', reflecting China's strong grain self-sufficiency policy and its protection against competitive suppliers like Vietnam.

Table 4 Base and final Vietnamese and Chinese bilateral tariffs

Sector	Vietnamese tariffs on imports from China		Tariffs facing Vietnamese exports to China	
	Base	Final	Base	Final
	%	%	%	%
Rice	20.3	0.0	62.4	45.8
Other cereals	3.1	0.0	16.2	11.9
Oilseeds	5.2	0.0	8.0	0.0
Vegetable oils and fats	2.1	0.0	21.2	1.8

Sugar	20.6	16.4	6.9	1.6
Vegetables, fruit and nuts	15.1	0.0	13.5	0.0
Other crops	13.9	10.6	9.1	0.0
Livestock	5.8	0.1	4.2	0.0
Forestry	4.2	0.0	6.2	0.0
Fishing	10.7	0.0	4.1	0.0
Petroleum and coal products	17.9	0.0	0.4	0.0
Ruminant meat	10.0	0.0	10.7	0.0
Non-ruminant meat	15.1	0.1	1.6	0.0
Other processed agriculture	19.4	0.2	7.6	0.0
Beverages and tobacco	78.4	69.7	4.3	0.0
Textiles & apparel	12.8	0.2	10.0	0.0
Chemicals	2.4	0.2	12.2	7.3
Metal manufactures	6.5	2.8	5.7	0.0
Wood & paper products	15.3	2.2	1.6	0.9
Manufactures	14.2	8.3	6.2	0.0

Source: GTAP version 7 database and author's calculations.

3. The model

The Global Trade Analysis Project (GTAP) model is used to measure the impact of changes in trade policy on the traded goods sector. The version 8 database, with a base year of 2008, is used for this application. GTAP is ideal for modelling preferential trade agreements because it contains bilateral trade and tariff data. It can also handle non-tariff measures if these can be converted into ad valorem equivalents. However, it has difficulty incorporating rules of origin in its analysis. It is a multi-country and multi-sectoral computable general equilibrium (CGE) model and fully documented in Hertel and Tsigas (1997). For each country or region, there are multistage production processes which combine primary factors of land, labour, capital and natural resources with intermediate inputs assuming a constant elasticity of substitution technology. Returns to factors, i.e. income, are taxed by the government, saved or spent by the single representative household. While there is no substitution between intermediate inputs and primary factors or among the intermediate inputs, there is substitution between different sources of intermediate inputs, namely domestic and imports from each region. The regions are linked together by imports and exports of commodities. Similar commodities, which are produced by different countries, are assumed to be imperfect substitutes for one another. The degree of substitution is determined by the Armington elasticities.

In this application, the standard closure is modified to allow capital to flow between countries in response to changes in demand for capital intensive goods. In addition, a semi-flexible labour market for unskilled labour is assumed, implying a change in the demand for labour leads to some increase in both wages and employment. Skilled labour is assumed to be

mobile in each country but in a fixed supply, with no surplus labour. This is the standard GTAP closure.

GTAP is used here to compare the trade and welfare effects of changes in bilateral tariffs once the impacts have worked through. There is no attempt to phase in the tariff changes nor trace the time profile of the impacts. Thus, we ignore changes such as growth in trade that may have occurred over the implementation period, but we incorporate differential changes in productivity suggested to be the result of differential expenditures on R&D as separate shocks to capture the effect of such changes over the implementation period. The focus here is on changes in tariffs as outlined in the schedules. We also attempt to capture the impact of non-tariff barriers such as mentioned earlier and other quantitative restrictions such as import bans or quarantine restrictions that result in differences between domestic and border prices in some separate scenarios.

The regions used in the model are European Union, United States, Japan, Australia, Other developed, China, Indonesia, Malaysia, Philippines, Thailand, Vietnam, Rest of ASEAN, South Asia, Central America, Africa and Rest of World. The sectoral aggregation is shown in table 8. This is similar to table 5 with the addition of services. Two scenarios are modelled here:

- (i) FTA as negotiated; This involves removing all the tariffs between China and ASEAN members including Vietnam as of 2007 (when AFTA was in place but not recent FTAs such as the AANZFTA) with the exception of those in the highly sensitive list. These are reduced to a maximum of 50 per cent.
- (ii) FTA without exemptions.

4. Results

The estimated annual changes in welfare under the scenarios are shown in table 6. The first point to note is the changes are positive, suggesting each country benefits from the tariff reductions. These need not always be the case. FTA agreements can make members worse off, along with non-members, and this is a common criticism of such agreements.

China gains the most, by virtue of having the largest economy. Compared with the size of its economy, Vietnam benefits most.

In welfare terms at least, all countries would have done better by removing tariffs on their highly sensitive products. These gains are significant for China but not so significant for Vietnam. This can be seen by comparing the two scenarios in table 5. As negotiated, China captures about 50 per cent of possible gains, whereas Vietnam captures around 80 per cent. However, part of these gains come from improved terms of trade rather than allocative efficiency gains from better resource allocation.

Table 5 Annual welfare impacts

	FTA as negotiated	FTA without exemptions
	\$m	\$m
China	5738	7401
Vietnam	1018	1444

Source. GTAP simulation.

The source of the welfare changes is shown in table 6. The bulk of the welfare gains stem mainly from using resources better (allocative efficiency), using resources that were previously under-utilised (endowments) and more favourable prices for imports or exports (terms of trade). Vietnam makes some allocative efficiency gains (probably mainly from its resources, textiles and manufacturing sectors) but its terms of trade decline further. China gains from all three sources. This is mainly related to trade with Vietnam, matching up with Vietnam gaining more, compared to the size of its economy.

Table 6 Source of welfare gains

	Allocative efficiency	Endowments	Terms of trade	Total
	\$m	\$m	\$m	\$m
FTA as negotiated				
China	173	4599	1285	5738
Vietnam	589	636	-175	1018
FTA without exemptions				
China	288	5910	1588	7401
Vietnam	828	1015	-280	1444

Source. GTAP simulation.

To show the importance of exemptions, the change in exports and imports by sector and for each economy in total is shown in tables 7 and 8 for the first two scenarios. China's increase in exports of 0.64 per cent is somewhat less of what could be achieved without exemptions (0.84 per cent). Vietnam's export growth of 3.3 per cent is also short of its potential, 5 per cent. Vietnam shows significant growth in a number of areas, most notably vegetable oils and fats, forestry, vegetables and fruit, non-ruminant meat, textiles and apparel, and manufactured goods. For China, rice and sugar and beverages and tobacco could increase markedly as other ASEAN members open up their markets.

Table 7 Change in exports

	FTA as negotiated		FTA without exemptions	
	China	Vietnam	China	Vietnam
	%	%	%	%
Paddy rice & proc rice	1.73	-0.66	3.6	3.29
Other cereals	-0.54	10.46	-0.56	64.96
Oilseeds	2.68	-3.45	2.56	-4.61
Vegetable oils and fats	0.73	61.27	0.52	72.96
Sugar	0.89	-1.2	46.26	-1.46
Vegetables and fruit	3.06	7.35	4.64	6.58
Other crops	0.94	-1.44	13.34	-2.11
Livestock	-0.16	0.55	-0.41	-0.44
Forestry	-0.49	11.56	-0.6	10.85
Fishing	0.42	-0.42	0.37	-0.65
Petroleum and coal products	5.22	1.55	5.25	1.81
Ruminant meat	2.01	-0.48	1.73	-0.84
Non-ruminant meat	0.48	3.47	9.26	2.01
Other processed agriculture	2.81	-0.02	2.81	-0.09
Beverages & tobacco	4.72	0.36	20.11	-0.19
Textiles & apparel	0.92	7.38	0.8	8.43
Chemicals	1.08	2.18	1.19	9.14
Metal manufactures	1.02	2.38	1.12	5.48
Wood & paper products	0.92	0.17	0.85	1.16
Manufacturing	0.39	3.43	0.74	8.3
Transport & communications	-0.04	2.08	-0.04	2.56
Business services	-0.32	-1.01	-0.42	-0.45
Services and activities NES	-0.2	0.01	-0.26	1.47
Total	0.64	3.28	0.84	5.02

Source. GTAP simulation.

On the import side the modelling shows significant increases for Vietnam, particularly rice, oilseeds, non-ruminant meats and textiles. Since Vietnam is a rice exporter, the high percentage change in imports is off a very low base. Comparing the two scenarios shows where the protection is maintained by the exemptions – other crops, beverages and tobacco, and manufactures (which includes motor vehicles).

Table 8 Change in imports

	FTA as negotiated		FTA without exemptions	
	China	Vietnam	China	Vietnam
	%	%	%	%
Paddy rice & proc rice	0.74	57.34	12.18	60.95
Other cereals	0.65	0.57	1.01	0.99
Oilseeds	0.24	4.46	0.26	5.57
Vegetable oils and fats	2.07	1.39	2.27	1.78
Sugar	0.69	1.91	0.94	2.29
Vegetables and fruit	5.78	8.09	5.8	9.01
Other crops	0.8	2.75	1.19	4.35
Livestock	0.94	2.63	1.16	3.82
Forestry	0.82	1.82	0.88	3.4
Fishing	1.04	1.51	1.16	1.97
Petroleum and coal products	0.74	6.18	0.85	7.41
Ruminant meat	0.45	0.57	0.53	1.05
Non-ruminant meat	1.14	5.3	1.45	6.23
Other processed agriculture	2.1	3.37	2.26	3.74
Beverages & tobacco	0.41	2.18	0.6	2.86
Textiles & apparel	1.37	7.86	1.48	8.89
Chemicals	0.95	2.41	2.01	3.93
Metal manufactures	0.6	2.57	0.77	4.21
Wood & paper products	0.64	3.14	0.76	4.03
Manufacturing	0.93	2.87	1.1	6.15
Transport & communications	0.33	0.38	0.42	1.07
Business services	0.38	2.48	0.48	3.21
Services and activities NES	0.34	2.08	0.43	2.17
Total	0.86	3.48	1.14	5.32

Source. GTAP simulation.

5. Conclusions, limitations and implications

Version 8 of the GTAP database is used to assess the potential impacts on Vietnamese agriculture of China joining the ASEAN Free Trade Agreement, which is to be phased in from 2010. It seems Vietnam has obtained a significant protective effect with its exemptions. Without exemptions, Vietnam's imports would rise from 3.3 to 5 per cent, reflecting 150 products in its sensitive list. China with its broader and larger economy has 101. On trade with China, Vietnam has many significant exemptions across a range of imports from China.

As with all modelling, the analysis has limitations. Producers and consumers may not respond to tariff changes as readily as the modelling suggests. Furthermore, the tariff changes modelled here may not occur causing the estimates to be biased upwards (PC 2010). Ideally, other trade constraints such as non-tariff barriers (NTBs) should to be incorporated, especially

in situations where these dominate the trade constraints. Tariffs are not the whole trade liberalisation story and as they diminish in importance, NTBs have tended to grow in importance. However, NTBs have proved difficult to address in FTAs as they are entwined with domestic policies and difficult to quantify.



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