A comparison of Indonesian and Vietnamese approaches to agriculture in the ASEAN-China FTA

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Abstract

Both Indonesia and Vietnam, as members of ASEAN, have negotiated a free trade agreement with China (ACFTA). ASEAN Member States can independently negotiate their tariff reductions. Both countries are generally aware of the opportunities access to the large Chinese market may present, but both are concerned to differing degrees about being flooded with Chinese imports, including agricultural products. As the time for implementation approaches, Indonesia has expressed a desire to renegotiate its tariff reduction schedules to protect sensitive sectors, including agriculture. By contrast, Vietnam, just over the border from China and with a history of informal trade, seems more accepting of the prospects.

A global general equilibrium model, GTAP, is used to compare the potential impacts of the ASEAN-China Free Trade Agreement on the Indonesian and Vietnamese agricultural sectors. Tariff line data are aggregated to eight primary and four processed agricultural sectors. This enables the differential impact of separate sensitive sectors for Indonesia and Vietnam to be identified. The simulated results following full implementation indicate both countries would improve their trade and welfare if the agreement is implemented as negotiated and tariff cuts are effective, although the extent of exemptions for sensitive products represent differing degrees of missed opportunities for each country. At the sectoral level, both countries can expect some reductions, compared with the baseline, in output of some agricultural sectors, but generally these changes are relatively small unless significant non-tariff barriers are addressed. From an economic perspective, structural adjustment should not be constrained in such circumstances.

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1. Introduction

Both Indonesia and Vietnam, as members of ASEAN, have negotiated a free trade agreement with China (ASEAN China Free Trade Agreement - ACFTA) in which ASEAN Member States can independently negotiate their tariff reductions. The two countries are aware of the opportunities access to the large Chinese market presents, being significant traders with China, but they are concerned to differing degrees about being flooded with Chinese imports, including agricultural products. As the time for implementation approaches, Indonesia has expressed a desire to renegotiate its tariff reduction schedules to protect sensitive sectors, including agriculture (Patunru et al. 2010). By contrast, Vietnam, just over the border from China and with a long history of informal trade and a more recent history of the benefits of trade liberalisation, seems more accepting of the prospects. Why is this so? Is Vietnam more accepting of Chinese competition because of its location or other factors such as the benefits of trade liberalisation, including allowing the imports of products from the world's cheapest suppliers? Has Indonesia negotiated a worse deal with China under the ACFTA than Vietnam and wanting to redress this, or has a changed political economy made them less committed to trade liberalisation?

The purpose of this paper is to analyse such questions through comparing past trade flows, tariffs, other trade-related aspects and the agricultural political economy, as well as potential impacts of the ACFTA on the Indonesian and 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 Indonesia and Vietnam to be identified and analysed.

The simulated results following full implementation indicate both countries would improve their trade and welfare if the agreement is implemented as negotiated and tariff cuts are effective, although the extent of exemptions for sensitive products represent differing degrees of missed opportunities for each country. At the sectoral level, both countries can expect some reductions, compared with the baseline, in output of some agricultural sectors. However, generally these changes are relatively small apart from when significant non-tariff barriers are addressed. 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, tariffs and non-tariff barriers, plus aspects of ACFTA such as exemptions of sensitive sectors. The third section describes the GTAP CGE model, the data, sectors and regions, and scenarios that analyse FTAs. The fourth section presents the results, setting out trade, welfare and sector impacts, and conclusions, limitations and implications are drawn in the final section.

2. Existing trade flows, tariffs and institutional arrangements

(i) Trade flows

Both Indonesia and Vietnam are significant traders with China. In 2009, Indonesia had China as its third largest destination of exports and second largest source of imports whilst Vietnam had China as its fourth largest destination of exports and largest source of imports. Indonesia and Vietnam gain more from Chinese imports than the other way around.

Indonesian and Vietnamese trades in food show some similarities as well as differences (see table of trade flows and shares below). Food export values have been growing at about the same rate until 2009 when those for both countries fell despite high prices, again by about the same rate. This could be the result of the Global Financial Crisis lowering overall trade and countries increasing their self-sufficiency in 2009 following the shortages and price hikes in 2008. China's food export values followed the same pattern but at lower rates, the 2009 fall only being around 1-2 per cent. Food import values have also been increasing, Vietnam's more so than Indonesia's which actually fell in 2009. China followed Indonesia's pattern but at a higher level and rate. Net food trade followed the pattern of food export values, increasing up to 2008 and falling in 2009. China's fell earlier and actually became negative in 2008 and less so in 2009.

A notable difference which offers one explanation of the counter movements in import values in 2009 of Indonesia and Vietnam is in the share of food trade in total trade. Indonesia's food export and import shares increased, exports quite substantially to nearly double in 2009 of what they were in 2000 (see the following table containing the shares). In contrast, Vietnam's export share fell significantly by about a third whilst its import share more than doubled from a low base. Vietnam has obviously diversified its exports away from agriculture/food, as is normally the case with development, whilst Indonesian exports have concentrated relatively into agriculture/food. Vietnam's pattern reflects that of China's development path where exports declined more and imports rose less, both from lower share values.

This relative diversification of Vietnam away, and the relative concentration of Indonesia towards agricultural/food production and trade is also evident from looking at the relative GDP per agricultural worker in both countries. In Indonesia, post the Asian financial crisis, GDP per agricultural worker halved, contrary to the usual pattern in growing economies, and this was in conjunction with no shortage of government policies and increases in related government expenditures. In Vietnam, labour has been successfully pulled out of agriculture, facilitated by the introduction of labour-saving techniques of production. As a result, agricultural GDP per capita grew due to the decrease in workers as well as an increase in

value-added. In Indonesia, agriculture's employment share exceeds its GDP share, which is indicative of the "labour shift" factor of a much lower productivity per agricultural worker relative to other workers, but this relativity is common to other developing countries such as Vietnam to varying degrees.

Table 1 Indonesian and Vietnamese food trade flows (2000 to 2009) and shares of all trade

	1990	2000	2007	2008	2009	Share 2000	Share 2009
Indonesia							
- food exports	4154	7764	23805	32857	25264	11.9	21.1
- food imports	1104	3336	7857	9383	8639	7.7	9.4
- net food trade	3050	4428	15948	23474	16625		
Vietnam							
- food exports	-	3954	11331	14560	10704	27.3	18.7
- food imports	-	814	3929	5444	7458	5.2	10.7
- net food trade	-	3140	7402	9116	3246		

Source: WTO International Trade Statistics 2010

There are other notable differences in trade between Indonesia and Vietnam, more evident when adjustments to total trade are made for the different sizes of the countries in terms of populations and GDP. In terms of trade per capita, Vietnam's is around 40 per cent higher than Indonesia's, US$1,581 over 2007-09 compared to US$1,148. China's is US$1,921.

The same relationship holds with the trade to the GDP ratio which is a measure of a country's openness to trade. The ratios were 161.3 per cent for Vietnam versus 52.8 per cent for Indonesia over 2007-09, illustrating Vietnam's openness to trade is much greater than Indonesia's. China's was in between the two at 58.6 per cent.

More generally, the two countries macro economic situations differ with indicators like Indonesia's GDP/capita growth, as well as its degree and growth of trade openness lagging that of Vietnam and China. Vietnam have undertaken many reforms in the macro-economic area in its transition towards a market economy, for example closing or selling off unprofitable State Owned Enterprises (SOEs), removing production and consumption subsidies from the state budget, as well as interest rate subsidies to SOEs (though some still appear to have preferential access to credit). The exchange rate was stabilised and devalued, raising incentives for exports which were encouraged by progressively lifting barriers to trade, including inputs for agricultural production (there are now few restrictions on exports,

tariffs are down to around 11-12 per cent, and Quantitative Restrictions are on only 1.2 per cent of imports) (OECD 2010). In contrast, Indonesia still has a logistic agency in Bulog that controls trade, storage, distribution etc, in some key commodities like rice, as well as funds production and consumption subsidies (including on interest rates through credit inputs) from the state budget.

(ii) Tariffs, non-tariff barriers and other trade-related policies

As tariffs are being looked at by Indonesia for renegotiating its commitments under the ACFTA, it is useful to look at what has happened in the past with tariff reductions and trade in general, and more specifically in relation to China and agriculture.

As mentioned in the last part, Vietnam's final bound and applied simple average tariffs in 2009 were both around 11 per cent and tariff binding coverage was 100 per cent, as might be expected for a country that had recently undergone WTO accession (in 2007) (see table 2 for details on such selected tariffs). For agricultural goods, both these tariffs were respectively around 19 per cent. Indonesia's final bound tariffs in 2009 were 37 per cent and applied tariffs were much lower around 7 per cent, and tariff binding coverage around 96 per cent. For agricultural goods they were respectively 47 and 8 per cent. Vietnam's bilateral applied tariffs on China's exports are 42 per cent and Indonesia's are 6 per cent. Indonesian applied tariffs are lower and bound tariffs higher than those for Vietnam. China's tariff structure is more similar to Vietnam's than Indonesia's.

Table 2 Bound and applied simple average tariffs

	China	**Indonesia**	**Vietnam**
	%	%	%
Bound tariff	10.0	37.1	11.4
Bound tariff agriculture	15.7	47.1	18.5
Applied tariff	9.6	6.8	10.9
Applied tariff agriculture	15.6	8.4	18.9
Tariff binding coverage	100	95.8	100
Applied tariffs on imports from China	-	6	42

Source: WTO Country Profiles and GTAP v7 database.

If tariffs were reflecting the true relative levels of protection of Indonesia and Vietnam than this could be an explanation of why Indonesia was more concerned about trade with China than Vietnam, regardless of the implementation of the ACFTA – it appears much more open to increased imports of Chinese products. But the relative tariffs go against the fact that

Vietnam has had greater openness to trade than Indonesia as measured by the ratio of its trade to GDP. Moreover, the relative bound positions taken by the two countries suggests Indonesia is much more cautious in its trade liberalisation than Vietnam. The impression is that Vietnam has reformed more in the recent past (but from a very long way back) and that this has been responsible for the large growth in trade. One possible explanation of this conundrum is that tariffs are only part of the trade constraints or barriers story.

Countries may have low tariffs but be constraining trade more than countries with much larger tariffs through the use of a maze of non-tariff barriers (NTBs) such as use of monopoly traders, licensing, anti-dumping actions, restrictive SPS settings etc. As can been seen from the following table of WTO notifications, measures in force and dispute numbers, Indonesia is much more active in anti-dumping, safeguards and disputes which are often areas where NTBs are prevalent. China has a lot of anti-dumping actions but it is the defendant in requests for consultation nearly three times as often than it is the complainant.

Table 3 Number of WTO notifications and measures in force, and number of disputes

	Indonesia	**Vietnam**	**China**
Anti-dumping	15	-	106
Safeguards	3	0	0
Request for consultation (complainant-defendant)	5-4	1-0	7-20
Original panel/Appellate body reports (“)	2-4	0-0	1-5
Compliance panel/Appellate body reports (“)	1-0	0-0	0-0
Arbitration awards (“)	0-0	0-0	0-0

Source: WTO Country Profiles.

There are more quantitative measures that incorporate tariffs and some non-tariff barriers, such as Nominal Rates of Assistance to producers (NRAs) which have been measured via comparisons of domestic and border prices across a range of agricultural commodities for many countries, including Indonesia and Vietnam, in a major World Bank project (Anderson and Valenzuela 2009). NRAs for Indonesia, Vietnam and China are provided in a table inserted below.

Table 4 NRAs to all Agricultural Products, Indonesia, Vietnam and China, 1996 to 2005

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Indonesia	-10	-7	-24	6	16	17	15	18	12	-
Vietnam	-3	-5	-8	21	15	24	11	32	23	11
China	4	7	10	5	8	4	4	7	7	7

Note: Indonesian figures at farm level, covered agricultural products and including the fertiliser subsidy.
Source: World Bank Agricultural Distortions Research Project

The final available year of NRAs are around the same order for both countries, in contrast to the situation with the tariffs, as a result of taking account of non-tariff barriers. Vietnam NRAs do not take into account intermediate goods produced by SOEs with high tariffs which would lower these NRAs. Given that Vietnam tariffs were double those of Indonesia, if Vietnam had no NTBs then Indonesian NTBs would have to be of the same order as its tariffs for the NRAs to be of the same order for both countries. China's NRAs have been positive but low relative to Indonesia and Vietnam.

However, not all non-tariff barriers will necessarily be taken into account in these NRA measures. For example, using the restricted issuing of licensing to constrain imports as in the case of Indonesian beef would most likely not be picked up as a consistent NTB. Monopoly importers often have similar non-transparent behaviour. SPS and TBT issues are a grey area where it is difficult to differentiate between genuine health-related constraints etc and those that are basically aimed at protection (for example, see Bosworth and Cutbush (2010) on Australian SPS arrangements in relation to New Zealand apples). Anti-dumping is sometimes treated the same despite it having little economic justification in terms of the predatory pricing argument which is rarely if ever proven in practice. To identify all non-tariff barriers requires detailed analysis of the countries policies and their implementation. An upper bound approach to assessing non-tariff barriers is to use the difference between domestic and international prices, assuming none of the difference is due to aspects like differences in quality, that is all of the difference is due to non-tariff barriers.

Indonesia's agricultural policies are focused on self-sufficiency and price stability, and mainly in respect of rice where Bulog acts as a monopoly trader (thus making tariffs irrelevant), undertaking domestic market purchases, stockholding, sales, operating under floor and ceiling prices, or high tariffs or import bans have been imposed, both of which have led to large nominal protection or assistance rates. Input subsidies feature prominently (though some on fertiliser have been removed but then reimposed), generally requiring complementary interventionist trade or border policy (e.g. the above mentioned rice price support, and sugar

tariffs (along with forced plantings, regulated distribution chain and import licenses)) and constraints on major exports such as tree crops (export bans and taxes, coffee export quotas, and bio-fuel mixing regulations).

One aspect evident from the NRAs table is that these have jumped around quite a lot, turning from negative to positive in recent years and varying year-on-year within such groupings. Changes in international prices offer some explanation even when Indonesian policies do not change and this needs to be taken into account when trying to estimate representative costs of policies. But domestic factors are also at work. Fane and Warr (2007) offer a political economy explanation of this changing protection. In general, they observed that Indonesia has followed a pattern of "good economic times, bad policies and bad economic times, good policies" where good/bad policies refers to their "good" economic efficiency or their "bad" protection. During bad economic times, technocrats introducing economically efficient policies supported by institutions like the World Bank that needed to be on-side to encourage loans etc, held sway with the President. In good economic times, nationalists with popular support held sway with protectionist policies to support nationalist industries that were very expensive and only fundable during good economic times. This situation changed after 1998 when NRAs started another positive stint following the Asian financial crisis with the move to a much more democratic and populist form of government that has reduced the influence of technocrats and promoted populist economic nationalism.

Vietnam has become a major exporter of rice, coffee, etc 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. Vietnam's recent levels of NRAs are dominated by one importable commodity, sugar with high tariff protection etc.

There is a political economy element behind Vietnam's changing NRAs as well. There is not a "more democratic government" story here but one concerning a single commodity in sugar which has its own political economy of a strict licensing regime for governing sugar imports and being 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). Vietnam does not have like Indonesia, a wider number of commodities that it assists or protects through input subsidies and border protection through tariffs and NTBs, as well as export sectors that it taxes – sugar, rice, dairy,

livestock, etc in the first instance and tree crops like palm oil, cocoa etc in the second instance. Vietnam has diversified away from agriculture in terms of contribution to GDP, employment, state-owned enterprises, budget dependence and exports in what has become a very open economy with few export constraints, highly dependent on trade. Agriculture, though still contributing significantly to the Vietnamese economy, is becoming less important politically than other sectors.

There are other agricultural trade-related policies that would not be picked up in measures such NRAs that can have a positive effect on agricultural, for example agricultural-related R&D. There is evidence in Indonesia of a slowdown in agricultural production and potential trade as a consequence of a long-run downward trend in related public investment – the growth rate in spending on agricultural research is negative. In contrast in Vietnam there has been a rapid growth in government investment in R&D which is felt has contributed to the growth in food production and trade, for example in aquaculture.

(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. 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). Indonesia has 47 exemptions, most notably in chapters 10 (rice), 17 (sugar), 22 (alcohol), 64 (footwear) and 87 (motor vehicles) (ASEAN Secretariat 2006). Indonesia is currently renegotiating its highly sensitive list. This involves removing some items and replacing them with others. It must get agreement with China before the list can be revised.

Less developed Vietnam was allowed 150 items in its highly sensitive list, plus a longer implementation period. 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 an Indonesian perspective, the most significant changes are for 'Beverages and tobacco' and 'Textiles & apparel'. Notably, there are no changes to rice and sugar, both of which have relatively high tariffs. From the perspective of Indonesia's exports to China, most tariffs are reduced to zero with the exception of 'Beverages and tobacco' which are relatively low initially. 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 5a Base and final Indonesian and Chinese bilateral tariffs

	Indonesian tariffs on imports from China		**China tariffs on imports from Indonesian**	
Sector	**Base**	**Final**	**Base**	**Final**
	%	%	%	%
Rice	20.0	20.0	0	0
Other cereals	1.2	0	0	0
Oilseeds	4.9	0	5.2	0
Vegetable oils and fats	0.7	0	2.6	0
Sugar	35.1	35.0	7.0	0
Vegetables, fruit and nuts	5.0	0	7.4	0
Other crops	4.7	0	7.2	0
Livestock	4.7	0.1	2.9	0
Forestry	5.1	0	5.8	0
Fishing	4.9	0	2.8	0
Petroleum and coal products	2.3	0	0.8	0
Ruminant meat	5.2	0.1	6.2	0
Non-ruminant meat	4.9	0	3.8	0
Other processed agriculture	5.8	0	6.8	0

Beverages and tobacco	28.3	2.3	11.6	0
Textiles & apparel	10.2	0.3	7.1	0
Chemicals	5.6	0.1	8.3	2.9
Metal manufactures	6.6	0.1	3.8	0
Wood & paper products	5.8	0.6	3.1	0.2
Manufactures	6.3	1.0	6.1	0

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

Table 5b Base and final Vietnamese and Chinese bilateral tariffs

	Vietnamese tariffs on imports from China		**China tariffs on imports from Vietnam**	
Sector	**Base**	**Final**	**Base**	**Final**
	%	%	%	%
Rice	20.34	0	62.36	45.84
Other cereals	3.12	0	16.21	11.92
Oilseeds	5.19	-0.01	7.97	0
Vegetable oils and fats	2.1	0.01	21.18	1.84
Sugar	20.59	16.36	6.87	1.58
Vegetables, fruit and nuts	15.07	0	13.5	0
Other crops	13.91	10.55	9.05	0
Livestock	5.79	0.05	4.22	0
Forestry	4.17	0	6.23	0
Fishing	10.68	0.02	4.12	0
Petroleum and coal products	17.88	0.03	0.36	0
Ruminant meat	10	0.01	10.74	0
Non-ruminant meat	15.09	0.13	1.57	-0.01
Other processed agriculture	19.35	0.23	7.55	0.02
Beverages and tobacco	78.43	69.71	4.25	0
Textiles & apparel	12.8	0.21	9.96	0
Chemicals	2.36	0.2	12.17	7.33
Metal manufactures	6.51	2.81	5.72	0
Wood & paper products	15.28	2.17	1.61	0.91
Manufactures	14.15	8.25	6.2	0

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

(iv) Some other relevant aspects of FTAs

It is unusual for FTAs like ACFTA to address non-tariff barriers (NTBs) though under ANZCERTA, anti-dumping is handled as part of competition policy. Generally, current WTO arrangements such as in relation to anti-dumping and SPS are accepted under the trade agreements.

Other agricultural trade-related policies such as R&D support are generally not part of FTAs though under the AANZFTA there has been some R&D funding through the ASEAN Secretariat to assist ASEAN Member States in the trade agreement, for example assisting in a

diagnostic study of constraints in trade in services and prioritising capacity building that will assist trade liberalisation.

FTAs are more about the political economy than trade liberalisation – "many tend to be "trade light" tools of foreign policy and diplomacy" (Sally 2008). Shifts in trade policy cause redistribution of gains and losses between sectors, regions, socio-economic groups etc. Given these aspects it not surprising that Indonesia and Vietnam with their different political economies display different attitudes to the ACFTA. With strong political economy drivers, politically sensitive sectors and associated protection policies like anti-dumping, SPS, TBT etc are carved out of FTAs.

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. 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.

Four scenarios are modelled here:

(i) FTA as negotiated; This involves removing all the tariffs between China and Vietnam and Indonesia 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.

(iii) Productivity. Scenario 1 plus annual productivity increases of 3.7% for China, 2.9% for Vietnam and 1.5% for Indonesia[2].

(iv) NTB. Scenario 1 with nominal rates of assistance (NRAs) used to determine tariff equivalents for Indonesian rice and sugar. In the absence of sound data, we use baseline rates of 200 and 400 per cent and reduce these to 50 per cent[3].

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

[2] These were annual estimates for agriculture obtained from Fuglie (2008) applied over the whole period of simulation and to all sectors which will isolate the individual country impacts but which will be refined in later simulations.

[3] These are of the order estimated in some earlier research (e.g. Warr 2005) but again are mainly used here to illustrate the relative impacts of NTBs and will be refined if better measures can be obtained for a range of products in later simulations.

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 Indonesia and Vietnam. This can be seen by comparing the two scenarios in table 6. As negotiated, China captures about 50 per cent of possible gains, whereas Indonesia and Vietnam capture around 90 and 80 per cent respectively. However, part of these gains come from improved terms of trade rather than allocative efficiency gains from better resource allocation.

The third scenario shows the benefits of productivity growth. In fact these benefits swamp the allocative efficiency gains from trade liberalisation, although the technical change enhances the allocative efficiency effects and the value of additional endowments, labour and capital. However, there are negative terms of trade effects.

Removing non-tariff barriers assumed to be equivalent of 200 and 400 per cent for Indonesian rice and sugar increases Indonesian annual welfare gains from $1758m to $1887m. Domestic production of rice and sugar is estimated to fall 1 and 19 per cent respectively, and imports increase by 90 and 200 per cent. The changes in imports are small relative to domestic production. The self-sufficiency ratio for rice falls marginally from 99 to 98 per cent, whereas for sugar it falls more significantly from 76 to 70 per cent.

Table 6 Welfare impacts

	FTA as negotiated	**FTA without exemptions**	**Productivity**	**NTB**
	$m	$m	$m	$m
China	6478	12704	436016	6385
Indonesia	1758	1961	22778	1887
Vietnam	579	742	5709	580

Source. GTAP simulation.

The source of the welfare changes is shown in table 7. 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). For Indonesia, the second scenario delivers almost no additional allocative efficiency gains (tariffs cannot be lowered much further), but there are improvements in its terms of trade and an increased demand for unskilled labour-intensive products. 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, than Indonesia from the tariff reductions. This story changes a little once NTBs are brought into the analysis.

Table 7 Source of welfare gains

	Allocative efficiency	**Endow-ments**	**Terms of trade**	**Technical change**	**Total**
	$m	$m	$m	$m	$m
FTA as negotiated					
China	994	4320	1320	0	6478
Indonesia	316	1373	71	0	1758
Vietnam	360	458	-235	0	579
FTA without exemptions					
China	1935	7761	3417	0	12704
Indonesia	322	1524	105	0	1961
Vietnam	436	633	-293	0	742
Productivity					
China	55703	171819	-17282	221482	436017
Indonesia	2517	11896	-450	8606	22778
Vietnam	1443	1667	-525	3278	5709
NTB					
China	953	4282	1306	0	6385
Indonesia	417	1431	37	0	1887
Vietnam	361	458	-234	0	580

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 8 and 9 for the first two scenarios. China's increase of 1.5 per cent is half of what could be achieved without exemptions, whereas Indonesia has little scope to improve, although using NTBs against Indonesian rice and sugar imports has a significant effect at a sectoral level. Vietnam's exports of 5.5 per cent is somewhat short of its potential, 7.4 per cent. For Indonesia the largest relative changes are in the non-agricultural sectors of forestry (10 per cent) and manufacturing (6 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 if Indonesia opened up its markets completely.

Table 8 Change in exports

	FTA as negotiated			FTA without exemptions		
	China	Indo-nesia	Viet-nam	China	Indo-nesia	Viet-nam
	%	%	%	%	%	%
Paddy rice & proc rice	21.4	-3.4	2.5	35.9	4.6	11.8
Other cereals	2.5	-2.1	-0.7	1.2	-2.5	2.5
Oilseeds	1.4	-1.8	-4.1	0.3	-1.5	-6.1
Vegetable oils and fats	3.0	0.8	58.1	3.0	0.7	69.8
Sugar	-0.8	0.0	1.3	78.2	0.4	2.8
Vegetables and fruit	4.5	-0.7	6.0	6.9	-1.5	4.8
Other crops	11.9	-4.1	-0.7	17.3	-4.7	-1.9
Livestock	-0.2	5.6	3.4	-1.2	6.6	2.2
Forestry	-0.1	10.5	14.6	-1.2	11.4	15.1
Fishing	0.4	1.5	-1.1	0.1	1.9	-0.9
Petroleum and coal products	10.8	-0.1	2.3	13.7	0.0	2.3
Ruminant meat	6.4	-1.3	1.6	10.3	-1.8	1.4
Non-ruminant meat	-1.9	-2.2	7.0	10.0	-2.6	6.3
Other processed agriculture	3.7	-0.1	1.8	4.1	-0.2	1.2
Beverages & tobacco	14.5	-12.5	-3.1	57.5	-26.6	-4.8
Textiles & apparel	2.0	3.0	10.6	1.9	2.9	11.8
Chemicals	3.0	5.3	7.6	2.9	9.9	24.2
Metal manufactures	2.9	1.5	3.3	3.0	1.2	6.0
Wood & paper products	1.2	1.5	0.1	1.5	1.7	1.2
Manufacturing	1.1	5.6	5.4	3.6	4.0	9.3
Transport & communications	-0.1	-0.5	6.5	-0.4	-0.4	6.8
Business services	-0.6	-0.9	-1.3	-1.4	-0.7	-0.3
Services and activities NES	-0.2	-0.7	-0.9	-0.7	-0.5	0.6
Total	1.5	2.4	5.5	2.7	2.5	7.4

Source. GTAP simulation.

On the import side there are no significant increases in Indonesian imports, with the exception of vegetables and fruit and textiles and apparel. If Indonesia is not required to reduce support for rice and sugar, and few jobs are at risk, there is a question as to why Indonesia is

expressing concern with the negotiated arrangements under ACFTA, ignoring for the time being that there has been no change in the political economy towards greater opposition to trade liberalisation. The modelling shows more 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 9 Change in imports

	FTA as negotiated			**FTA without exemptions**		
	China	**Indo-nesia**	**Viet-nam**	**China**	**Indo-nesia**	**Viet-nam**
	%	%	%	%	%	%
Paddy rice & proc rice	2.7	5.7	750.2	71.7	3.0	845.0
Other cereals	1.7	1.5	1.8	2.9	1.7	1.3
Oilseeds	0.8	2.1	16.8	1.2	2.3	20.1
Vegetable oils and fats	2.4	1.8	1.3	3.1	2.0	1.7
Sugar	1.6	1.1	1.5	2.9	1.8	1.0
Vegetables and fruit	9.2	6.1	10.1	10.2	6.1	10.8
Other crops	2.5	1.1	4.7	3.4	1.0	8.9
Livestock	2.2	2.3	2.2	3.5	2.6	3.6
Forestry	1.7	3.6	2.0	2.9	3.8	3.1
Fishing	2.0	2.2	7.5	3.0	2.3	7.5
Petroleum and coal products	2.6	1.8	7.8	3.7	1.8	8.8
Ruminant meat	1.2	2.8	3.2	2.0	3.2	3.5
Non-ruminant meat	2.9	3.8	9.7	4.9	3.8	10.9
Other processed agriculture	3.8	3.4	4.1	4.7	3.4	4.2
Beverages & tobacco	1.1	0.0	1.5	1.8	-1.3	11.5
Textiles & apparel	2.9	9.0	13.3	3.6	9.3	14.4
Chemicals	2.2	3.1	3.7	4.4	3.5	5.4
Metal manufactures	1.7	3.8	3.7	3.0	3.4	4.8
Wood & paper products	2.2	2.1	4.2	3.3	2.3	5.1
Manufacturing	1.6	2.5	4.1	2.8	2.6	7.7
Transport & communications	0.7	1.3	-1.6	1.5	1.3	-1.0
Business services	0.8	1.4	2.6	1.6	1.4	2.7
Services and activities NES	0.7	2.3	3.3	1.5	2.3	3.4
Total	1.8	2.7	5.8	3.1	2.8	7.7

Source. GTAP simulation.

5. Conclusions, limitations and implications

In comparing the response of Indonesia and Vietnam's to an FTA with China, it seems Vietnam has obtained a greater protective effect with its exemptions than Indonesia. Without exemptions, Vietnam's imports would rise from 5.8 to 7.7 per cent whereas Indonesia's would increase marginally from 2.7 to 2.8. Less developed and more diversified Vietnam has 150 products in its sensitive list whereas Indonesia has only 47, but China with its broader and larger economy has 101. A more important reason why Vietnam may have obtained a greater degree of protection than Indonesia is that Indonesia has higher tariffs to start with. But this conclusion changes once NTBs are taken into account and the size of the costs of assistance once productivity differential are also taken into account. Indonesia's average applied agricultural tariff is 8 per cent compared with Vietnam's 19 per cent. On trade with China, Indonesia has high tariffs on rice and sugar, but low tariffs on most other goods. By contrast, Vietnam has much higher tariffs across a range of imports from China. NTBS have a significant effect on aspects such as allocative efficiency at the sectoral level at which they are applied. Benefits of productivity growth dominate those from allocative efficiency which it enhances along with additional endowments.

In the Introduction, the question was asked of why is Vietnam more accepting of the ACFTA than Indonesia. It was proffered that this could be a result of Vietnam's location next to China and the threat of informal trade without any trade agreements plus its recent experience of the benefits of trade liberalisation, for example in the form of cheap imports. Evidence of Vietnam's greater acceptance of ACFTA was obtained from an industry survey in a recent Vanzetti, Trewin and Cassing (2010) study of Vietnam FTAs where threatened industries such as pulp and paper remained optimistic that they could develop a niche off cheap Chinese inputs. Indonesia is not a neighbour of China and the benefits of trade liberalisation are not as recently evident. And as just outlined, it has committed to bigger tariff cuts under ACFTA than Vietnam which would concern some protected industries even though the Indonesian economy will be the biggest beneficiary of these cuts. There has also been a large change in the Indonesian political economy with a move to a decentralised political system that has given greater power to minority interests including those that see a threat in opening up Indonesian agriculture to greater international competition. Perhaps because of its lack of tariff protection (as distinct from less transparent protection from NTBs), Indonesia is currently attempting to renegotiate its highly sensitive list with China. However, if items are to be included in the list, others must be removed. This creates an inevitable trade-off among Indonesian domestic producers, and China must be persuaded to agree. To date, getting this agreement has proved difficult.

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 'outer envelope' ones (PC 2010). Already we have seen further negotiations to slow down the reform process which can also occur through the greater use of NTBs outside the ACFTA.

There are two important groups of implications from the above analysis, both for GTAP modelling and for Australian and other countries negotiations with countries like China, Indonesia and Vietnam. The GTAP modelling implications include that if only tariff trade constraints are available in the data base for analysis then the results of the modelling can be misleading in terms of the benefits of trade liberalisation. Other trade constraints such as NTBs need to be incorporated, especially in situations like in Indonesia where these dominate the trade constraints, if their costs or the benefits of trade liberalisation are to realistically estimated. Even where just modelling of reduction of tariffs is appropriate, care need to taken to avoid the "outer envelope" criticisms of CGE modelling of FTAs, for example assuming liberalisation is fully implemented when this is most likely not to be the case (PC 2010).

There are also important implications for trade negotiations from the analysis. The negotiated agreements need to be comprehensive, not only in terms of covering agriculture and other goods, services etc that enable trade offs in the political economy, such as in agricultural liberalisation in the longer term with better services access under TAFTA (Bosworth and Trewin 2006), but in terms of 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 like with many service trade constraints they are entwined with domestic policies. What needs to be done is to show that such measures are not in the best interests of the country imposing them. Indonesia has liberalised tariffs but has not opened its agriculture to international competition and realised the benefits of reallocating resources to better uses and developing fully its domestic agriculture to compete internationally. There are better ways for Indonesia to achieve its legitimate objectives in agriculture and it needs to be encouraged to unilaterally reform in its own interest, not on the basis of any trade agreement. Trade facilitation is important in this so if trade agreements offer help in this regard, such as with R&D that increases productivity, this should be encouraged. At least this would lower the costs of closed policies if they were maintained but at the same time encouraging more openness to take advantage of growing trade opportunities. Such approaches can address the important political economy constraints. Why are Indonesian tariff cuts under ACFTA of concern when in reality they would have

little impact because of the prevalence of NTBs? Do stakeholders putting pressure on not liberalising not appreciate this, or as is often the case in trade reform, do a few that are under threat of being disadvantaged complain more loudly than a silent, often hard to organise majority of consumers, who would gain? Or is it just a reflection of Indonesian misplaced scepticism of the benefits of trade liberalisation which they have enjoyed but are not fully aware of unlike Vietnam where the benefits are more recently obvious? Fane and Warr (2007) put forward a credible answer to the question of why there are different Indonesian and Vietnamese responses to the ACFTA, which is a changing political economy towards populist economic nationalism that is anti-trade followed the decentralisation of Indonesia's political system.

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