

An EU-ASEAN Free Trade Area with a focus on Singapore and Malaysia

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An EU-ASEAN Free Trade Area with a focus on Singapore and Malaysia

Yontem Sonmez

Scott McDonald

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AUTHORS.

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Correspondence Address: University of Central Lancashire, Lancashire Business School,
Greenbank 132, Preston, PR1 2HE, email: ysonmez@uclan.ac.uk

1. Introduction

International trade liberalisation is one of the important consequences of globalisation in addition to international labour migration and financial liberalisation. After World War II, the first round of multilateral trade negotiations started under the auspices of the General Agreement on Tariffs and Trade (GATT) and the trend toward global trade liberalisation accelerated leading to the proliferation of the preferential trade agreements.

European Union (EU) is the leading entity regarding the regionalisation activities in Europe. Under GATT Article 14, the EU concludes bilateral trade agreements on Customs Unions (CU), Free Trade Areas (FTA), and association agreements and devises specific trading policies with third countries.

With the help of globalisation, Asia has emerged as one of the important regions comprising dynamic emerging economies of ASEAN. Therefore, cooperation on global issues with such a diverse and dynamic region is important for the EU. While many wide-ranging agreements (trade, FDI, climate change, tourism, nuclear research) are under discussion, the EU already opened negotiations for a free trade agreement with Singapore and Malaysia in 2010.

The analyses are carried out using GLOBE global CGE model that is implemented in GAMS (see McDonald *et al*, 2005) and is calibrated using GTAP data. The database has been aggregated to 19-sectors, 5-factors and 17-regions. But the GTAP database does not incorporate explicit estimates of inter-regional transactions because of the parsimonious treatment of the external accounts of regions. Hence, for this study a method for augmenting the GTAP database using additional IMF data on inter-regional transactions (McDonald and Sonmez, 2004) has been implemented as an extension to a global representation of the GTAP database (McDonald and Thierfelder, 2004). Since the data on inter regional transfers are not bilateral, an additional region, called “globe”, is defined as the recipient of all transfer expenditures and the source of all transfer incomes; this treatment is analogous to the treatment of trade in margin services found in the standard GTAP database.

The macroeconomic implications of such an FTA for Singapore and Malaysia are analyzed by comparing the scenario below with the baseline scenario of no FTA with the baseline year of 2007 (GTAP version 8 data for 2004 are also used to assess any changes between the two versions, but the reporting is limited). The policy experiment examines the economic implications of the elimination of the bilateral trade tariffs between the EU and ASEAN

countries in manufacturing as well as the impact of allowing and/or forbidding changes in labour migration.

Preliminary results indicate that the results are sensitive to the extent and ease with which labour migration can occur and that, as might be expected, the predominant benefits are realized through Malaysia-EU trade.

2. The ASEAN – EU Relations

2.1. ASEAN

When the Association of Southeast Asian Nations(ASEAN) was first established forty five years ago Indonesia, Malaysia, Philippines, Singapore and Thailand were the founding members. In addition to those five founding member countries, Brunei Darussalem (1984), Vietnam (1995), Laos (1997), Burma/Myanmar (1997) and Cambodia (1999) are also ASEAN members today, collectively generating US\$ 1500 billion worth of GDP with a population of about 600 million people (EU Commission Online, 2012a).

ASEAN is an outward looking association which promotes collaboration in social, cultural, technical, scientific, administrative and economic areas. ASEAN leaders are aiming to establish the ASEAN Economic Community with the goal of regional economic integration by 2015. They envisage to establish a highly competitive single market which is fully integrated into the world economy. In order to achieve such objectives the Association has been developing partnerships, political, cultural and/or economic cooperation with third countries such as Australia, New Zealand, Canada, India, Russia Pakistan and the Republic of Korea as well as with the strong economies of the world such as China, Japan, USA and the EU. (ASEAN Online, 2010).

2.2. EU – ASEAN Relations

2.2.1 The cases of Singapore and Malaysia

2.3 Literature Survey: EU- ASEAN Trade Developments

3. Data and Model

3.1 Data: GTAP Transactions

The form of the database used for this study is a Social Accounting Matrix (SAM) representation of the Global Trade Analysis Project (GTAP) database version 8 which is benchmarked to years 2007 and 2004 (McDonald and Thierfelder, 2004). The GTA project produces the most complete and widely available database for use in global computable general equilibrium modelling; indeed the GTAP database has become generally accepted as the preferred database for global trade policy analysis and is used by nearly all the major international institutions and many national governments. Hertel (1997) provides an introduction to both the GTAP database and its companion CGE model. The precise version of the database used as the starting point for this study is a reduced form global SAM representation of the GTAP data (McDonald *et al.* 2007).

The analyses are carried out by using a 19-sector, 5-factor and 17-region global computable general equilibrium model -GLOBE CGE - that is implemented in GAMS (McDonald *et al.* 2005). For this study a method for augmenting the GTAP database using additional GMig2 data on bilateral remittance and number of migrant workers differentiated according to the skill type- as skilled and unskilled - have been implemented as an extension to a global representation of the GTAP database (McDonald and Thierfelder, 2004). Due to the availability of bilateral remittance data there was no need for an additional region called “globe”. For modelling remittances in the absence of bilateral remittance data one can refer to McDonald and Sonmez (2006).

The accounts in the SAM are detailed below and the aggregation mapping from the GTAP database is provided in the Appendix.

Table 1: SAM and Model Accounts

19 Sectors		17 Regions	
cagr	Crop Agriculture	sgp mys ASEAN EU27 chn hkg jpn kor tw ind MERCOSUR ME_NA asia usa afr aus row	Singapore Malaysia ASEAN EU27 China Hong Kong Japan Korea Taiwan India MERCOSUR Middle East &NAfrica Asia USA Africa Australia Rest of the World
aagr	Animal Agriculture		
meatprd	Meat prdoducts		
food	Food		
tex	Textiles		
wapp	Wearing Apparel		
chem	Chemicals		
woodpap	Wood paper products		
bmetmin	basic metals & minerals		
elec	electronics		
machn	machinery		
motor	motor vehicles		
oman	other manufacturing		
petrl_coal	Petroleum coal products		
nres	natural resources		
util	Utilities		
tr_trnsp	Trade and transport		
cns	Construction		
oserv	Other services		
		5 Factors	
		land	Land
		unsklab	Unskilled labour
		sklab	Skilled labour
		capital	Capital
		natRes	Natural Resources

Source: GTAP Database

This model is a member of the class of computable general equilibrium (CGE) models that are descendants of the approach to CGE modelling described by Dervis *et al.*, (1982). The implementation of this model, using the GAMS (General Algebraic Modeling System) software, is a direct descendant and development of the single country models devised in the late 1980s and early 1990s, particularly the model reported by Robinson *et al.*, (1990), and the multi-country model developed to analyse NAFTA (see Lewis *et al.*, 1995, for a later application).

The model is a SAM based CGE model, wherein the SAM serves to identify the agents in the economy and provides the database with which the model is calibrated. Since the model is SAM based it contains the important assumption of the law of one price, i.e., prices are common across the rows of the SAM. The SAM also serves an important organisational role since the groups of agents identified by the SAM structure are also used to define sub-matrices of the SAM for which behavioural relationships need to be defined. As such the

modelling approach has been influenced by Pyatt's 'SAM Approach to Modeling' (Pyatt, 1987).

3.2.1. Trade

Trade is modelled using a treatment derived from the Armington 'insight'; namely domestically produced and consumed commodities are assumed to be imperfect substitutes for both imports and exports. Import demand is modelled via a series of nested constant elasticity of substitution (CES) functions; imported commodities from different source regions are assumed to be imperfect substitutes for each other and are aggregated to form composite import commodities that are assumed to be imperfect substitutes for their counterpart domestic commodities. The composite imported commodities and their counterpart domestic commodities are then combined to produce composite consumption commodities. These are the commodities demanded by domestic agents as intermediate inputs and for final demand by households, the government, and for investment.

Export supply is modelled via a series of nested constant elasticity of transformation (CET) functions; the composite export commodities are assumed to be imperfect 'substitutes' for domestically consumed commodities, while the exported commodities from a source region to different destination regions are assumed to be imperfect 'substitutes' for each other. The composite exported commodities and their counterpart domestic commodities are then combined to produce composite production commodities. The properties of models using the Armington 'insight' are well known (see de Melo and Robinson, 1989; Deverajan et al., 1990), but it is worth noting here that this model differs from the GTAP model through the use of CET functions for export supply; this ensures that domestic producers adjust their export supply decision in response to changes in the relative prices of exports and domestic commodities, which help to moderate the magnitude of the terms of trade effects in this class of model. Homogeneity can be imposed for all or any subset of commodities and regions.

3.2.2. Production

The production structure is a two stage nest. Intermediate inputs are used in fixed proportions per unit of output – Leontief technology. Primary inputs are combined as imperfect substitutes, according to a CES function, to produce value added.

3.2.3. Final Consumption

Final demand by the government and for investment is modelled under the assumption that the relative quantities of each commodity demanded by these two institutions are fixed – this reflects the absence of a clear theory that defines an appropriate behavioural response by these agents to changes in relative prices. For the household there is however a well developed behavioural theory; hence the model contains the assumption that households are

utility maximisers who respond to changes in relative prices and their incomes. In this version of the model the utility functions for the private households are assumed to be Stone-Geary, which yields linear expenditure systems that allow for subsistence consumption, and reduce to Cobb-Douglas utility functions where minimum levels of consumption are not specified.

3.2.4. Modelling Endogenous Migration and Remittances

The number of migrants from ASEAN to EU countries change with the difference in relative wage rates and is stimulated by a migration elasticity which shows how responsive ASEAN unskilled and skilled labour are to a change in relative wage rates.

The value of remittance inflows to ASEAN is equal to the value of remittances sent by unskilled and skilled ASEAN labour in EU, adjusted for exchange rate.

The value of factor income changes as a result of the change in remittances which are expressed in domestic currency units.

Share of income for distribution, on the other hand changes with the change in the number of migrants, while initially a fixed share of income for distribution is assumed which is equal to the base level.

Finally, the value of remittances paid to ASEAN skilled and unskilled labour in domestic currency units is a share of the income to skilled and unskilled ASEAN labour in the EU.

4. Policy Experiments and Model Closure

4.1. Policy Experiments

Four different policy experiments are analysed for this study. As a result of the EU – ASEAN free trade area bilateral trade duties will be eliminated on industrial commodities between the two parties. Although it will be an extreme case, in order to see the economic implications of free labour mobility, the free movement of ASEAN labour within the EU27 will also be implemented as the last scenario. In order to help explain the results and aid the analysis, the following policy experiments will be implemented one by one:

1. removal of bilateral import duties on industrial commodities;
2. removal of bilateral export taxes/subsidies on industrial commodities;
3. removal of bilateral import duties and export taxes/subsidies on industrial commodities;

4. removal of bilateral import duties and export taxes/subsidies on industrial commodities countries together with the imposition of agricultural subsidies;
5. removal of bilateral import duties and export taxes/subsidies on industrial commodities countries together with the imposition of agricultural subsidies plus the free movement of ASEAN labour within the EU27

Due to the limitations of space, only a subset of possible results will be presented, but references are made to other results, where they provide additional insights. Although five different policy scenarios have been run, the analysis will only include a comparison of the base scenario where there is no EU membership and no free movement of labour between ASEAN and EU27 and also no agricultural liberalisation.

4.2 Model Closure

The model closures adopted for this study are detailed below:

5. Results

6. Closing Comments

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