



Impact of ASEAN-Korea FTA on Poverty: The case study of Laos

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Abstract

The objective of this paper is to attempt to quantify the impact of ASEAN-Korea FTA (AKFTA) on national economy-wide impact and poverty. The study uses a standard Global Trade Analysis Project (GTAP) model for this analysis. The simulation results show that Laos will gain from accession to the AKFTA. The real GDP and welfare will increase, while trade deficit will increase and output in some sectors will be reduced. In addition, income of unskilled labor will increase. Therefore, AKF will increase growth and also improve income distribution for Laos.

Key words: ASEAN-Korea FTA (AKFTA), Poverty, Income Distribution, CGE model

JEL Classification: F15; F17

1. Introduction

The Government of Laos has designated trade liberalization as on the most important keys to economic growth and poverty reduction (GOL, 2011). Laos joined the Association of Southeast Asia Nation (ASEAN) in 1997, the ASEAN Free Trade Area (AFTA) in 1998. ASEAN-Korea Free Trade Agreement (AKFTA) negotiations have launched in 2004, officially signed goods agreement was on 2006 and the agreement entered into force to Laos on 2008.

According to free trade agreements, Laos must reduce its tariffs. By doing so, the Government expects to gain key benefits such as an increase in exports, and increased foreign direct investment (FDI). With reduced tariffs, the price of imported goods will be reduced and therefore imports will increase which it will have impact on Lao economy and income distribution.

Laos has achieved economic growth around 7% during two past decade and poverty drop significantly. However, poverty is still high and inequality has increased (National Statistic Bureau, 2008). Therefore, it is important to understand how trade liberalization impacts to small but fast growing economy and poverty on least development country like Laos.

A number of interrelated factors determine whether trade liberalization has positive or negative consequences on poverty. One aspect of this involves the effect of trade liberalization on household

income, and takes place in the factor market. Another dimension affects household expenditure patterns, which take place in the commodity market. The specific effects of trade liberalization vary from country to country, and so the exact impact of trade liberalization on poverty and income distribution in the context of Laos is not clear.

According to our best knowledge, there is no study on the impact of AKFTA on the Lao economy and income distribution using the Computable General Equilibrium (CGE) approach. This study's main objective is to attempt to quantify the impact of AKFTA on national wide-economy and poverty using the standard Global Trade Analysis Project (GTAP) model.

2. Lao economy, trade and poverty

Since introducing the New Economic Mechanism (NEM) in 1986, Laos has been transitioning from a centrally planned economy to a more market-oriented economy. As a result, except during the Asian financial crisis of the 1990s, Laos has been achieving high economic growth as shown in table 1¹.

Table-1. Macroeconomic development in Laos, 1990-2011

Macroeconomic indicator	2006-2011	2001-2005	1996-2000	1990-1995
GDP (current million US\$)	5,739	2,130	1,617	1,276
GDP growth (%)	8.02	6.24	6.17	6.28
GDP per capita (constant 2000 US\$)	509	371	302	243
GDP per capita growth (%)	6.43	4.58	4.00	3.44
Inflation, CPI (%)	5.42	10.31	57.00	15.27
Trade balance (million US\$)	-320	-228	-276	-174
Trade balance/GDP (%)	-5.41	-10.43	-17.03	-13.02
Budget deficit(including grants, million US\$)	-136	-87	-79	-107
Budget deficit/GDP (%)	-2.53	-4.13	-4.87	-7.95
Exchange rate (kip per US\$)	8,885	10,164	4,094	727

Source: World Bank online database 'World Development Indicators' (<http://data.worldbank.org/indicator>), Asian Development Bank online database 'Key indicators for Asia and the Pacific 2012' (<http://www.adb.org/publications/key-indicators-asia-and-pacific-2012>)

Even though Laos has been maintaining high economic growth, low inflation and a stable exchange rate, serious macroeconomic challenges remain. Firstly, Laos has faced chronic twin deficits in government and trade balances. Secondly, there is a huge gap between savings and investment. Thirdly, Laos also faces a high external debt burden. Fourthly, as Lao economy highly depends only on resources sectors (Kyophilavong and Toyoda, 2008)

Trade trends indicate that Laos has been facing a chronic trade deficit since introducing the New Economic Mechanism (NEM) in 1986, although the situation has recently changed. Laos imports various goods from other countries, from light and heavy manufacturing goods to processed food, textiles and clothing. Imports from Thailand account for 60% of all imported goods in 2008 (table 2; 3).

Laos' main export commodities in 2004 were textiles and clothing, light manufacturing, and products of mining. However, the export structure of the country has since changed. The heavy manufacturing held the highest share of exports in 2008, higher than textiles and cloth and mining(table 4; 5). The main export destinations are Thailand, the European Union, East Asia and Vietnam. This shows that Lao trade is highly dependent upon Asian countries, especially its neighboring countries. As tariff rates for Laos and its trading partners are already low, Laos might not gain much from the affects of AFTA through tariff cuts.

¹ The engine of growth during this period was FDI inflows in the mining and hydroelectricity sectors and mining production and exports. More detail see Kyophilavong and Toyoda (2008)

Table-2. Imports by commodity (%)

	2004	2008
Grains and crops	1.74	1.48
Livestock and meat products	0.25	0.26
Mining and extraction	2.70	1.28
Processed food	15.03	10.12
Textiles and clothing	10.19	6.44
Light manufacturing	18.44	26.77
Heavy manufacturing	46.58	49.13
Utilities and construction	0.53	2.46
Transport and communication	0.82	1.08
Other services	3.72	0.97
Total	100.00	100.00

Sources: GTAP data base 7 and 8.

Table-3. Imports by country of origin (%)

	2004	2008
Australia, New Zealand	1.87	1.20
Cambodia	0.06	0.00
East Asia	11.91	17.64
European Union 25	13.54	6.50
Indonesia	0.20	0.24
Latin America	0.26	0.10
Malaysia	0.29	0.62
Middle East and North Africa	0.95	0.10
North America	2.66	1.49
Philippines	0.03	0.03
Rest of Southeast Asia	0.01	0.01
Singapore	5.10	0.44
South Asia	0.44	0.27
Sub-saharan Africa	1.43	0.22
Thailand	53.67	66.06
Vietnam	5.70	4.16
Rest of the world	1.85	0.91
Total	100.00	100.00

Sources: GTAP data base 7 and 8.

Table-4. Exports by commodity (%)

	2004	2008
Grains and crops	5.62	4.36
Livestock and meat products	0.90	0.46
Mining and extraction	9.00	10.07
Processed food	1.56	1.05
Textiles and clothing	27.26	12.74
Light manufacturing	21.20	9.73
Heavy manufacturing	4.91	42.87
Utilities and construction	1.11	2.72
Transport and communication	12.76	9.90
Other services	15.67	6.11
Total	100.00	100.00

Sources: GTAP data base 7 and 8.

Table-5. Exports by country (%)

	2004	2008
Australia, New Zealand	0.64	0.78
Cambodia	0.05	0.01
East Asia	7.11	15.75
European Union 25	46.29	24.65
Indonesia	0.14	0.38
Latin America	0.97	1.01
Malaysia	0.16	2.49
Middle East and North Africa	2.34	0.50
North America	11.16	7.67
Philippines	0.05	0.07
Rest of Southeast Asia	0.00	0.01
Singapore	0.53	0.50
South Asia	0.39	0.78
Sub-sahara Africa	0.55	0.93
Thailand	15.79	27.87
Vietnam	10.63	13.31
Rest of the world	3.20	4.06
Total	100.00	100.00

Sources: GTAP data base 7 and 8.

Analysis of three Lao Expenditure and Consumption Surveys (LECS) from World Bank and DOS (2009) showed that the incidence of poverty has fallen since LECS 1, though it fell slowly during 1997-98. The incidence of poverty fell from 46% in LECS 1 to 39% in LECS 2, and from 33.5% in LECS 3 to 28% in LECS 4 (table 6). Inequality has also changed since LECS; it increased between LECS 1 and LECS 2, but declined by LECS 3.

Table-6. Poverty and inequality in Laos

Poverty in Laos	LECS 1 1992/93	LECS 2 1997/98	LECS 3 2002/03	Change 92/93 to	Change 97/98 to
Northern region	51.6	47.3	37.9	-4.3	-9.4
Central region	45	39.4	35.4	-5.6	-4
Southern region	45.7	39.8	32.6	-5.9	-7.2
Vientiane	33.6	13.5	16.7	-20	3.2
Lao PDR	46	39.1	33.5	-6.9	-5.6

Sources: World Bank and DOS (2009).

3. Literature Reviews

A conceptual framework of link between trade policy and poverty has been developed by Winters (2000). Impact of trade on poverty is a complex and multidimensional phenomenon. The evidence on trade liberalization and poverty under four headings: macro-economic aspects (growth and fluctuations), households and markets, wages and employment, and government revenue and spending. (Winters et al. 2004).

The result of experienced trade liberalization is mixed. There are both positive and negative impacts from studies on accession of trade liberalization. Some scholars has found positive on trade liberalization, for example, the regional agreement (the East Asian FTA) would yield higher economic

welfare gains and a greater economic impact (Kitwiwattanachai et al., 2010). An FTA within ASEAN tends to reduce the returns to labor of the developed non-member countries and narrow the income gap between ASEAN. (Ariyasajakorn et al., 2009). Fukase and Martin (1999) argued that AFTA effects for Vietnam are small. AFTA will be more efficient allocation of resources among Vietnam's industry. Benefits to agriculture sector and it will moves to labor-intensive manufacturing and it will increase the welfare (income) and economically beneficial. Adams and Park (1995) indicate the ASEAN would be better off from AFTA, the trade volume within ASEAN will growth, and positive effects will be increased. Park, D., Park, I. and Estrada (2012) found that AKFTA will creates welfare and output gains to most of the member countries due to net trade creation and net welfare effects are positive. Kawai and Wignaraja (2008) found that AKFTA generated positive income effects for Korea and individual ASEAN countries. Based on deviations in equivalent variations, the highest gains accrued to Vietnam, Korea, and Thailand while the lowest gains accrued to Least Developed Countries (LDCs).

On the other hand, some scholars found the negative impact of AFTA. Panagariya (1993) declared that AFTA was a "wrong turn". He gives several reasons for this. First, ASEAN was small internal markets, thereby limiting the potential for internal market expansion. Second, the region was low levels of intra-regional trade. Finally, the larger countries had higher levels of protection, and he suggests that they were offering little in the way of product liberalization in the first few years. Advanced country gains more than low income country.

Adams and Park (1995) argued that FTA will be additional burden on the government budget, trade account, and resulting inflation. Ando and Urata (2006) found that individual ASEAN countries, in particular Thailand and Singapore, will benefit from AKFTA. It shows that the impact of FTA on individual countries are mixed which highly depend on characteristics of FTA and individual economic structure.

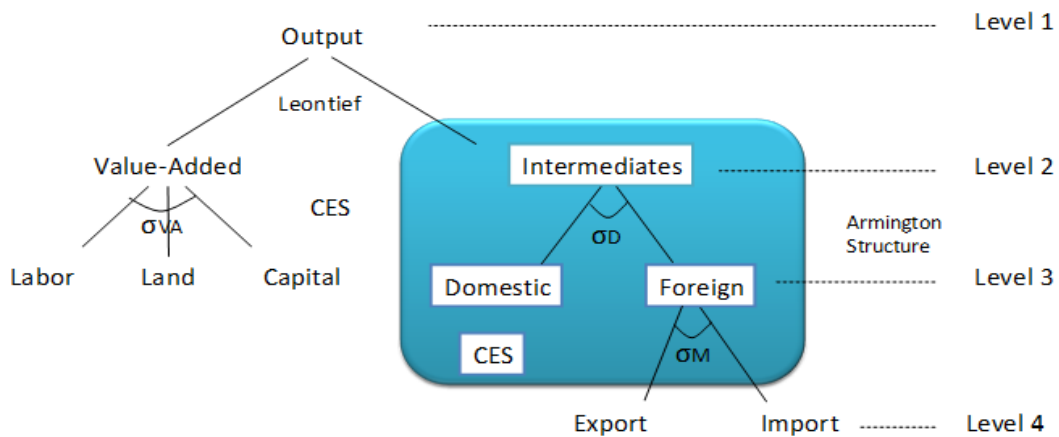
But there are very few researches on trade liberalization and poverty topic using quantitative methods in Laos. Kyophilavong (2004) found that AFTA will increase real consumption and investment will increase the GDP, but it is small. Kyophilavong, Takamatsu, and Ko (2010) found that the benefits from WTO accession are quite small. According to our best knowledge, there is no study on ASEAN-Korea FTA on Lao economy.

4. Methodology and scenarios

We uses the Global Trade Analysis Project (GTAP) model for evaluating the impact of AKFTA on Lao economy. GTAP model, a multi-region CGE model, is one of the most popular models for analyzing the impact of trade policy. There are various advantages to the GTAP model. Firstly, since it is a multi-regional model of world production and trade, it can take into account the overall trade implications of AKFTA impact as well as third party counties. Secondly, in contains a database for different sectors and thus can explore the trade implications for various sectors of interest. (Hertel and Tsigas, 1997).

The GTAP model assumes perfectly competitive markets, where the zero profit condition holds, and that all the markets are cleared. The regional household allocates expenditure across three categories: private household, government, and savings. It derives income from the 'sale' of primary factors to the producers, which combine them with domestically produced and imported intermediate composites to produce final goods. These final goods are in turn sold both domestically to private households and the Government, and exported to the rest of the world. Both the Government and private households also import consumer goods from the rest of the world. A global bank intermediates between global savings and regional investments by assembling a portfolio of regional investment goods and selling shares in this portfolio to regional households in order to meet their savings demands. Finally, a global transport sector assembles regional exports of trade, transport and insurance services and produces composite goods used to move merchandise trade among regions (Hertel and Tsigas, 1997). The flowchart of the GTAP model and production structure in the GTAP model is illustrated in Figure 1.

Figure-1. Production structure (GTAP model)



Source: Hertel and Tsigas, 1997

The database version 8 used by this study reflects the world economy in 2012. The database is formatted as an input-output structure within each country with bilateral international trade values. The newest version of the GTAP 8 database includes Laos' input-output table, which might provide significant contributions to empirical studies of this issue. The latest version of the GTAP database, version 8, is used for this study. To facilitate our analysis, we have aggregated sectors into 57 sectors and 12 regions. (Kyophilavong, 2012).

In order to analysis effects of AKFTAs on Lao Economy and income distribution, we make assumption of elimination of tariffs within ASEAN and plus elimination of tariffs between ASEAN and Korea.

5. Results

The result of tariff eliminations between Laos (with ASEAN) and Korea on selected macroeconomic variables is shown in table 7. AKFA by elimination tariff has positive impact on Laos on GDP, welfare, but its impact is relative small. Real GDP will increase about 0.17% and welfare will increase about 12 millions USD from baseline 2008. Term of trade will be improved from AKFA. However, trade deficits will increase from AKFTA. Laos will face trade deficit about 37 million USD per year from AKFTA.

There are positive and negative impacts of AKFTA on output in Laos. Positive sectors in Laos from ASEAN-KOREA FTA might have positive on light and heavy manufacturing (table 8). Top positive sector is motor vehicles and parts, which is Korea's major industrial product. On the other hand, some sector will be lose from AKFTA (table 9), agricultural sectors seems to have negative impacts from AKFTA.

The impact of AKFTA on returns to factor of production is shown in table 10. Following by literature, we assume that the changing of income returns to unskilled labor refers to changing in poverty because most of poor are unskilled labor in Laos.

AKFTA will increase the returns to land (3.42%), un-skilled labor (2.35%), skilled labor (2.47%) and capital (2.28%). It is clear that AKFTA will good for poverty in the case of Laos. However, deeper analysis on impact of AKTA on poverty need to be considered.

Table-7. Macroeconomic results on AKFTA

Macroeconomic variables	AKFTA Effects
Real GDP (%)	0.17
Welfare(equivalent variation) (\$US million)	12.17
Household income (%)	0.34
Terms of Trade (%)	0.37
Trade balance (\$US million)	-36.93

Source: Authors' simulations.

Table-8. Top 10 sectors for positive impact of output from AKFTA

No.	Sector	Change(%)
1	Motor vehicles and parts	55.86
2	Machinery and equipment nec	27.21
3	Oil	10.81
4	Chemical, rubber, plastic products	10.71
5	Ferrous metals	9.64
6	Transport equipment nec	9.08
7	Cereal grains nec	5.72
8	Electricity	5.45
9	Coal	4.7
10	Recreational and other services	3.58

Source: Authors' simulations.

Table-9. Top 10 sectors for negative impact of output from AKFTA

No.	Sector	Change(%)
1	Sugar	-8.06
2	Dairy products	-6.28
3	Textiles	-5.94
4	Leather products	-5.65
5	Insurance	-5.62
6	Vegetable oils and fats	-3.28
7	Forestry	-2.24
8	Petroleum, coal products	-1.94
9	Crops nec	-1.92
10	Gas	-1.79

Source: Authors' simulations.

Table-10. Change in returns to factor of production

Factor of production	Change (%)
Returns to land	3.42
Returns to un-skilled labor	2.35
Returns to skilled labor	2.47
Returns to capital	2.28

Source: Authors' simulations.

6. Conclusion

The main objective of this study is to investigate the impact of ASEAN-Korea FTA (AKFTA) on national wide-economy and poverty in Laos. We employed the Global Trade Analysis Project (GTAP) model. Our simulation results show that AKFTA will increase real GDP and welfare. However, its impact is relative small. In on the other hand, AKFTA will lead to increase trade deficit in Laos. In addition, there are some winner and loser sectors in economy. It seems that AKFTA will have positive impact on light manufacturing but it will have negative impact on agriculture and food processing. AKFTA will have positive impact of returns of production factors. Return of un-skilled labor will increase from AKFTA which show that poor will be benefits from AKFTA. In conclusion, AKFTA will have positive impact on real GDP and welfare but its impacts are relative small. In addition, AKFTA will reduce poverty in the case of Laos. However, it requires deeper analysis on the impact of AKFTA on poverty.

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