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Export and Import Performance of Lao's Products

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Abstract

The objective of this paper is to identify key export products of Laos to the RCEP partners (ASEAN, China, Japan, Korea, Australia, New Zealand, and India) and to analyze import products which will affect domestic production. Export and import products of Laos were analyzed by using various trade indicators and trade data from International Trade Centre during 2010-2014. In addition, trade performance of the RCEP member countries were studied in order to compare them with the trade performance of Laos. The Normalized Revealed Comparative Advantage (NRCA) was applied to analyze the export performance of Laos and to compare with the RCEP members. The results of the study show that imports and exports accounted for only 30% of the 6,558 products under the HS code. Most of the products having comparative advantage were natural resources. The product having the highest NRCA was product code 740311 (pure gold).

Keywords: Economic Integration, Trade Performance**,** NRCA

1. Introduction

Global trade competition encourages many countries to enter into economic integration. There are five stages of economic integration including preferential trading area, free trade area, custom union, economic union, economic and monetary union, and completed economic union. South East Asian Nations (ASEAN) are in the position to move from a free trade area to an economic union. ASEAN has become a most dynamic region in terms of economic integration in recent years. The aims of ASEAN economic integration are to accelerate economic growth, social progress, and culture development. Focusing on trade, the ASEAN Economic Community (AEC) has been announced at the end of last year, nearly all tariff rates of each member have been brought down to the 0-5 percent in accordance with ASEAN Trade in Goods Agreement (ATIGA). ASEAN's newer members, namely Cambodia, Laos, Myanmar and Viet Nam will also do so by 2018.

In parallel with the AEC realization process, free trade negotiations with other dialogue partners were also intensified in recent years, in particular, ASEAN with six countries which include Australia, China, India, Japan, Korea and New Zealand, the so called Regional Comprehensive Economic Partnership (RCEP). This grouping would include more than 3 billion people, has a combined GDP of about $17 trillion, and accounts for about 40 percent of world trade. Negotiations were slated to begin in early 2013 and are expected to conclude by the end of 2015. Recently, the negotiations are concentrated on preparing initial offer for Trade in Goods Chapter in accordance with a recently agreed model for tariff elimination. The basic ideas on Basic Concept for Initial Offers include coverage, parameters and process of initial offer and the future market. The initial offers cover tariff line and tariff value, details plan for tariff elimination, and common concession. There are two categories of tariff elimination, i.e., entry to enforce for and 10 years phased-out period (13 and 15 years least developed countries).

Lao PDR, least developed country, has to prepare initial offers for trade in goods in accordance with the agreed tariff reduction model, in which require to eliminate 30% of total tarifflinesupon the enforcement of Trade in Goods Agreement under RCEP, while 30% and 20% of tarifflinesare going to be eliminated within 13 and 15 years, respectively. Nevertheless, about 20% remaining of tariff lines would cover sensitive and General Exception (GE) list (arms, drug, and etc.)wherethey are for future negotiation. Member of RCEP is in process of exchanging initial offers (IO), and requires submitting request lists before the next round of negotiation. The Trade in Goods Division,Foreign Trade Policy Department (FTPD), Ministry of Industry and Commerce, has submitted the initial offers and has to revise it upon the outcome of each round of negotiation. More than 2,800 tariff lines have to be brought down to zero percent immediately after the enforcement of Trade in Goods Agreement under RCEP.

In order to decide the level of sensitivity of products which have been put into the initial offer and to identify grouping of which products that would be put into Request List of Lao PDR taking into account their comparative advantage in export performance, those products must be analyzed and set priority. The priority of products will be considered by taking into account both offensive and defensive interests. On defensive interest of domestic producers, the study has reviewed their performance, importance, comparative advantage, trend, export potential and import requirement where someproducts are not in the position to compete with products from other RCEP members as they're in infant stage which might requires necessary protection from governments, that requires negotiator of Lao PDR has to defend and keep the tariff lines which corresponding to those products out of the offers or put them into staging categories, so that certain protection from tariff rate is still available. On offensive interests, group of products which have certain export volume in each year including those products with export potential would be put into Request List of Lao PDR in order to request other RCEP Members to eliminate their tariff rates accordingly. The submitting of Request List for others' consideration is the

second stage of negotiation in goods and will be a step to revise initial offers of each country, and finally conclude their tariff commitment under RCEP Trade in Goods Agreement.

From Lao PDR's perspective, under RCEP negotiation, benefit and opportunity would be much more on offensive interest since Lao PDR is originally import oriented country, and our domestic market has already been freely opened under ASEAN Trade in Goods Agreement (ATIGA) and major importing partner of Lao PDR is still ASEAN countries. On other word, there wouldn't be much negative impact from the implementation of tariff commitment under RCEP. Therefore, it would be more valuable for Lao PDR to put more effort on offensive interest by identifying grouping of export products including export potential, putting them into Request List and submit to other members for their consideration.

The initial selection for offer is based on export and import value and non-active list. That criterion may not be sufficient information to support the selection. More trade indicators have to be used to analyze trade performance of Lao's product.For a comparison purpose, trade indicator will also apply to RCEP member countries.

The objective of this paper is to(1)identify key export products of Lao PDRto the RCEP dialogue partners (ASEAN, China, Japan, Korea, Australia, New Zealand, and India) and(2)analyzeimportproducts which will affect domestic production of Lao PDR.

Export and import products of Laos are analyzed by using various trade indicators and trade data from International Trade Centre. In addition, trade performance of RCEP member countries are studied in order to compare with the trade performance of Lao PDR. The specific objective is to categorize product into four groups based on RCEP negotiations.

2. Review of Literatures and Methodology

2.1 Review of Literatures

Trade indicators continue to develop for analyzing the national and regional trade performances. Recently, there are many trade performance indicators in international trade. Although some trade indicators are simple and easy to calculate, it is useful to apply these indicators to understand the previous and current situation of particular country's trade. UNESCAP (2007) summarizes all useful trade indicators for trade policy making in the handbook of trade statistics. The handbook provides many indicators to analyze trade performances in various dimensions from the simplest ones to the most complicated ones.

Trade indicators that many countries apply to check the trade performances of the country is Revealed Comparative Advantage (RCA).Balassa (1965) applied the concept of comparative advantage to develop the Revealed Comparative Advantage index (RCA). The country estimates the RCA index in order to check the strength and weakness of industry in term of export. Then they can promote competitive sectors and support noncompetitive sectors. The weakness of RCA is that the index cannot compare among industries or countries. Many authors attempted to find the alternated indexes to overcome this problem; nevertheless, those indexes could not fulfill the constraint of the RCA index.

Yu, Cai, and Leung (2008) derived the Normalized Revealed Comparative Advantage (NRCA) from RCA in order to make the index comparable among industries and over period of times. They estimated and compared the NRCA and RCA index of the United States mainland with Hawaii and foreign countries. They concluded that NRCA is more consistent and more reflects the real situation of the United States trade than the RCA index. Sanidas and Shin (2010) compared six RCA indices including Balassa RCA, Symmetric RCA, Weighted RCA, Addictive RCA, Normalized RCA and Lafay RCA by using theoretical concepts and empirical analysis. They found that none of them satisfy the theoretical concepts of comparative

advantage since the notion of comparative advantage usually takes into account autarkic variables, such as autarkic relative prices and autarkic production costs, which are not observable. They calculated and compared six RCA indices for nine East Asian countries, industries and times. They found different results when using non-econometric comparative analysis and econometric comparative analysis. The results suggest that there is no perfect RCA index and each index has advantages and disadvantages depending on the ways of using it. However, Normalized RCA seems to be the ideal RCA index when comparing across industries and over time.

Some previous studies applies RCA to Lao export data. Vixathep (2011) studies trade liberalization and comparative advantage dynamic of Lao PDR. BRCA is the main index to calculate comparative advantage. The studies suggested that the exports concentrated in some agriculture products and crude natural resource. The structure of export did not change significantly and trade diversification was low. Garment and mining industry gain comparative advantage while most of industry has comparative disadvantage. Record and Nghardsaysone (2013) investigate diversification challenge that the Lao PDR is facing. The main approach of this study is to review the long-term trends, changing patterns and performance of Lao exports through the lens of the "product space" methodology. The results of product space show that over recent years the Lao economy has become increasingly open and integrated with the regional economy. However, the Lao PDR is highly dependent on a limited range of export products to earn foreign exchange. In addition, the income potential of currently exported products (PRODY) is low.

The previous studies provide different arguments and conclusions. However, studies with applying trade indicators and NRCA have not been done for trade of Lao PDR. Those studies focus on analyzing the export performance of Lao PDR without any comparison with other countries. In this paper, trade performance of RCEP member countries is analyzed. Thisresearchis the first to applyvarious trade indicators and NRCA to classify priority of product for RCEP negotiation.

2.2 Methodology

The methods to analyze export and import performance of Lao's product are explained in the beginning of this section. The export performance indicators are mainly adapted from UNESCAP in 2007. This section is end up with NRCA an MI. This study covers the trade performance of Lao PDR and RCEP member countries. In order to do that data of export and import at 6 digit level base on HS coding are obtained from Trademap website (http://www.trademap.org). Total products under HS 2012 are 6,058, but there are only 5,812 product are active in the world trade. However, the negotiation of RCEP for tariff applied ASEAN Harmonize Tariff Nomenclature (AHTN) which is 8 digit levels. There are about 9,558 products under AHTN code. Therefore, HS code and AHTN are analyzed from 2010 to 2014.The comparison of trade performance of RCEP mainly uses NRCA and MI indexes. Figure of product space of NRCA and MI are drawn based on performance of each product group.

2.2.1 Sectoral Export and Import Share

Sectoral Export Share*(EXS)*measures extent diversification of exports across sectoral categories. It defines as the value of sectoral export divided by total export of a given economy which is expressed by

$$EXS_{i,t} = \frac{EX_{i,t}}{\sum_{i=1}^{n} EX_{i,t}} \times 100 \qquad (1)$$

where $EXS_{i,t}$ is the export share of industry *i* at time *t,* $EX_{i,t}$ is the export of industry *i* at time *t* and $\sum_{i=1}^{n} EX_{i,t}$ is total export of country *i* at time *t*. The value of *EXS* is ranging from 0 to 100%. The more percentage of *EXS* is the greater importance of the product *i* in the export profile of the country. The import share can be calculated as the same manner.

$$IMS_{i,t} = \frac{IM_{i,t}}{\sum_{i=1}^{n} IM_{i,t}} \times 100 \qquad (2)$$

where $IMS_{i,t}$ is the import share of industry *i* at time *t,* $IM_{i,t}$ is the import of industry *i* at time *t* and $\sum_{i=1}^{n} IM_{i,t}$ is total import of country *i*at time *t*.

2.2.2 Market Power Index

Market Power Index *(MPI)* measures an indirect international market power, evaluated through a country's share of world markets in selected export categories. It defines as a share of total exports of a given product from the country under study in total world exports of the same product which is expressed by

$$MPI_{i,t}=\frac{EX_{i,t}}{EX_{i,t}^{w}}\times 100 \tag{3}$$

where $EX_{i,t}^{w}$ is total export of industry *i* at time *t* in the world market, $EX_{i,t}$ is the export of industry*i* at time *t*. *MPI* takes values between 0 to 100%, with the higher value indicating the greater market power of industry.

2.2.3 Growth of Export and Import

Growth of Export *(GEX)* measures the movement of industry. It is defined as an annual compound percentage change in the value of exports of one industry between two periods, which is expressed by

$$GEX_{i,t}=\frac{EX_{i,t}-EX_{i,t-1}}{EX_{i,t-1}}\times 100 \tag{4}$$

where $EX_{i,t}$ is the export of industry *i* at time *t,* $EX_{i,t-1}$ is export of industry *i* at time *t-1*, $GEX_{i,t}$ is the growth rate of export of industry *i* at time *t*. *GEX* takes value from -100 (if trade ceases) to $+\infty$. The value zero means trade does not change. Growth of Import *(GIM)* can be measures as the same manner as

$$GIM_{i,t}=\frac{IM_{i,t}-IM_{i,t-1}}{IM_{i,t-1}}\times 100 \tag{5}$$

where $IM_{i,t}$ is the import of industry *i* at time *t,* $IM_{i,t-1}$ is import of industry *i* at time *t-1*, $GIM_{i,t}$ is the growth rate of export of industry *i* at time *t*. *GIM* takes value from -100 (if trade ceases) to $+\infty$.

2.2.4 Normalized Revealed Comparative Advantage

Normalized Revealed Comparative Advantage (NRCA) measures the degree of deviation of a country's actual export from its comparative advantage neutral level in term of its relative scale with respect to the world export market and thus provides the a proper indication underlying comparative advantage (Yu, Cai, and Leung, 2008). The key derivation of NRCA is from Revealed Comparative Advantage (RCA) at neutral point (RCA=1). Under the situation of RCA at neutral point, country *d* export industry *i*, $\widehat{EX}_i^d$, equal to $\sum_{i=1}^{n} EX_i^d \times EX_i^w / \sum_{i=1}^{n} EX_i^w$,where EX_i^d is the export of industry *i* from country *d*, EX_i^w is the export of industry *i* from the world *w,* $\sum_{i=1}^{n} EX_i^d$ is total export of country *d,* $\sum_{i=1}^{n} EX_i^w$ is total export of the world. Country *d* is actual export industry *i* in the real world, EX_i^d, would normally different from $\widehat{EX}_i^d$ and the different can be stated as

$$\Delta EX_i^d = EX_i^d - \widehat{EX}_i^d = EX_i^d - \frac{\sum_{i=1}^{n} EX_i^d \times EX_i^w}{\sum_{i=1}^{n} EX_i^w} \qquad (6)$$

Normalizing (6) by the world export, $\sum_{i=1}^{n} EX_i^w$, then NRCA is expressed as

$$NRCA_i = \frac{EX_i^d}{\sum_{i=1}^{n} EX_i^w} - \frac{\sum_{i=1}^{n} EX_i^d \times EX_i^w}{\sum_{i=1}^{n} EX_i^w \times \sum_{i=1}^{n} EX_i^w} \qquad (7)$$

$NRCA_i$>0 ($NRCA_i$<0) indicates that a county actually export commodity *i* is higher (lower) than its comparative advantage neutral level (*RCA* = 1), signifying that the country has comparative advantage (disadvantage) in commodity *i*. The greater the $NRCA_i$ score is, the stronger of comparative advantage would be. For example, $NRCA_1$ = 0.01 and $NRCA_2$ = 0.005 means that the relative strength of commodity 1 is two times its comparative advantage of commodity 2.

2.2.5 Michaely Index

MichaelyIndex *(MI)* is another comparative advantage index. However, import value also is considered into the calculation. It compares the export pattern of the industry to its own import pattern which is expressed by

$$MI_{i,t} = \frac{EX_{i,t}}{\sum_{i=1}^{n} EX_{i,t}} - \frac{IM_{i,t}}{\sum_{i=1}^{n} IM_{i,t}} \quad (8)$$

where the first term on the right hand side is a sectoral export share of industry *i* at time *t* and the second term is a sectoral import share of industry *i* at time *t*. *MI* takes the value from -1 to +1. Industry *i* is said to be comparative advantage if the value exceed zero.

3. Results

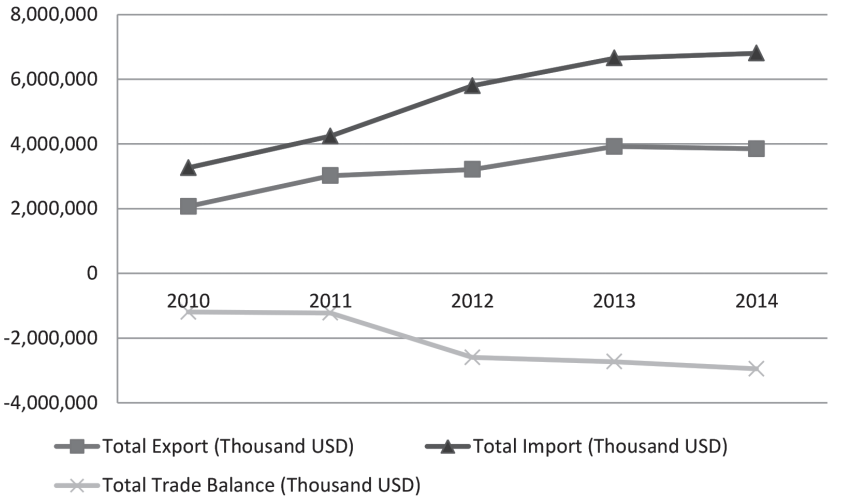
This beginning of this section shows the result of trade performance of Lao PDR from 2011 to 2014 including the export and import share, growth of export and import, market power index. Then, the results of NRCA of are shown, ranked, classified and compared with RCEP partner countries. Trade indicators and NRCA are calculated by using trade data of Trademap where the classification is based on HS code in 2012 at 6 digit level. On the other hand, tariff line under the AHTN is 8 digit levels. Therefore, it is important to match HS code and AHTN before classification. Finally, approximately 9,000 industries are arranged into four groups base on result of trade indicators for the RCEP negotiation.

3.1 General Statistic of Export and Import

This section shows the general statistic of export, import and trade of Lao PDR during the 2010-2014. The export value increased sharply in 2011 and after that it slightly increased in 2012 and 2013. Out of 6,558 products under HS code, the number of active product on export is proximately 900 which accounted for 15% of total active product in the world market. However,the number of active product on export increased in line with the value of export and it was peak at 991 products in 2012 which mean many products have a potential to export to the world market. The value of import increased in line with the increasing of export. In addition, the number of active product on import was increased and highest at 3,242 products in 2012. The number active product on import is about tree time higher than the number

of active product on export indicating that Lao PDR relies much on the product from other countries. Trade balance of Lao PDR was deficit for many decades and it is expanding overtime. The number of active product on trade is around 55% of total active product in the world market which mean trade of Lao PDR are concentrated some products.

Figure 3.1 Export, Import and Trade Statistics



3.2 Export Performance of Lao

3.2.1 Export and Import Share

This section presents the performance of export and import of Lao PDR. Top 20 of the highest export share during the 2010-2014 is shown in table 3.1. The export of product 740311 (Copper cathodes and sections of cathodes unwrought) was in the first rank for many years and it shares approximately 20% of total export. The export of product 440399 (Logs, non-coniferous nes) has significantly progressed to move from the fifth rank in 2010 to the first rank in 2014. It is notice that the rank of product 852990 moved from out of top 20 to the sixth of the highest export share with the share of 3.67%.

Table 3.1 Top 20 of highest export share

Rank	Code	EXS 2010	Code	EXS 2011	Code	EXS 2012	Code	EXS 2013	Code	EXS 2014
1	‘740311	22.092	‘740311	22.024	‘740311	21.097	‘740311	17.879	‘440399	20.431
2	‘260300	19.940	‘260300	16.936	‘271600	15.482	‘271600	15.531	‘740311	15.587
3	‘271600	13.147	‘271600	14.980	‘260300	15.136	‘440799	11.914	‘271600	14.847
4	‘440799	8.935	‘440799	10.379	‘440799	10.285	‘440399	11.163	‘260300	11.133
5	‘440399	4.945	‘440399	8.537	‘440399	6.787	‘260300	10.099	‘440799	7.181
6	‘090111	2.145	‘090111	3.316	‘090111	2.610	‘271011	3.594	‘852990	3.667
7	‘620520	1.558	‘620343	1.564	‘620343	1.586	‘090111	2.112	‘260111	2.043
8	‘100590	1.551	‘100590	1.132	‘710812	1.319	‘400122	1.495	‘620343	1.645
9	‘620343	1.538	‘620342	1.100	‘280469	1.292	‘260111	1.429	‘090111	1.553
10	‘620342	1.310	‘170111	1.031	‘100590	1.128	‘620343	1.408	‘400121	0.992
11	‘170111	0.911	‘620520	0.997	‘400122	1.111	‘710812	1.255	‘240319	0.938
12	‘611030	0.809	‘280530	0.898	‘170114	1.043	‘100590	1.217	‘310420	0.936
13	‘280469	0.808	‘400121	0.791	‘620342	0.895	‘400121	1.146	‘100590	0.936
14	‘400121	0.773	‘611030	0.625	‘280530	0.772	‘170114	0.861	‘400122	0.934
15	‘610711	0.773	‘610711	0.584	‘620520	0.744	‘310420	0.797	‘440290	0.921
16	‘610990	0.757	‘610990	0.473	‘400121	0.724	‘620342	0.756	‘620342	0.775
17	‘252010	0.619	‘252010	0.439	‘440729	0.647	‘280469	0.743	‘170114	0.699
18	‘270119	0.593	‘270119	0.426	‘611030	0.569	‘440290	0.610	‘280469	0.631
19	‘610910	0.573	‘440729	0.406	‘310420	0.500	‘440729	0.609	‘620520	0.592
20	‘440729	0.559	‘610343	0.392	‘999999	0.493	‘710239	0.572	121293	0.460

Source: Author’s calculation, 2016

Most of import products in the top 20 are product in heading 27 (Petroleum) and 87 (Automobile) and they are complement. It is also indicated the rapid growth of transportation and construction sector in Lao PDR. The import of product 271019 (Other Petroleum) shares approximately10-13% of total imports during the 2010-2014 and is primary used for road construction. The import of product 853650 (Electrical switches for a voltage not exceeding 1,000 volts, nes) moves from out of top 20 ranked in 2010 and to the second ranked in 2014 due to the development of hydropower energy (Xayaburi Dam) in Lao PDR.

Table 3.2 Top 20 of the highest import share

Rank	Code	IMS 2010	Code	IMS 2011	Code	IMS 2012	Code	IMS 2013	Code	IMS 2014
1	‘271019	11.719	‘271019	13.215	‘271019	12.447	‘271019	11.199	‘271019	10.020
2	‘271011	3.844	‘271011	4.222	‘271012	3.488	‘854231	6.205	‘853650	6.078
3	‘271600	3.284	‘880240	2.902	‘870421	3.415	‘870421	4.266	‘870421	4.233
4	‘870333	2.527	‘870323	2.024	‘870333	2.104	‘271012	3.575	‘271012	3.112
5	‘870332	1.876	‘870333	1.941	‘880240	1.962	‘271600	2.204	‘854231	2.940
6	‘871120	1.417	‘271600	1.727	‘847130	1.946	‘870333	1.748	‘870333	2.109
7	‘870421	1.319	‘842952	1.635	‘842952	1.514	‘020714	1.532	‘020714	1.761
8	‘843049	1.285	‘020714	1.630	‘271600	1.341	‘848049	1.299	‘490700	1.392
9	‘880230	1.242	‘870332	1.493	‘870423	1.300	‘871120	1.287	‘271600	1.230
10	‘870210	1.188	‘871120	1.386	‘870323	1.241	‘730890	1.248	‘710812	1.043
11	‘842952	1.172	‘870421	1.120	‘220290	1.196	‘721430	1.199	‘848049	1.037
12	‘870323	1.117	‘870410	1.054	‘020714	1.179	‘252329	1.092	‘730890	1.025
13	‘252329	1.056	‘252329	0.963	‘020230	1.169	‘842952	1.067	‘721430	1.013
14	‘851762	0.866	‘220290	0.912	‘730890	1.146	‘870323	1.057	‘840690	0.984
15	‘220290	0.818	‘710231	0.890	‘252329	1.026	‘870423	0.985	‘252329	0.960
16	‘730890	0.793	‘870190	0.889	‘871120	0.948	‘840290	0.968	‘847420	0.923
17	‘840890	0.659	‘870210	0.816	‘880230	0.864	‘847420	0.922	‘731100	0.851
18	‘292242	0.646	‘940360	0.751	‘870324	0.765	‘880230	0.904	‘842952	0.806
19	‘230990	0.592	‘170199	0.743	‘847170	0.746	‘854239	0.876	‘851712	0.764
20	‘870190	0.575	‘999999	0.717	‘851762	0.744	‘870322	0.779	‘870332	0.740

Source: Author's Calculation, 2016

3.2.2 Market Power Index

The market power index shows the market share in the world market. About 900 products exporting to the world during the 2010-2014, there are few products having a market power more than 10% in particular year. Those are wood products Logs, non-coniferous nes, and Lumber, non-coniferous nes. The product 071420 (Sweet potatoes, fresh or dried, whether or not sliced or pelleted) has small power in the world market, but the market share is slightly increased. Product 252010 (Gypsum; anhydrite) are approximately 3% in the world market and except for 2014.

Table 3.3 Market Power Index of Some Products

Product code	Product label	MPI 2010	MPI 2011	MPI 2012	MPI 2013	MPI 2014
‘071420	Sweet potatoes, fresh or dried, whether or not sliced or pelleted	0.92%	1.06%	3.40%	2.89%	2.43%
‘252010	Gypsum; anhydrite	3.04%	3.13%	2.89%	3.25%	0
‘410320	Reptile skins, raw	0.27%	2.82%	4.05%	1.04%	0.10%
‘410640	Tanned or crust hides and skins of reptiles, whether or not split (exc)	1.64%	0.67%	3.98%	0.96%	0.17%
‘440290	Wood charcoal, incl. shell or nut charcoal, whether or not agglomerate	0.77%	1.36%	1.93%	3.09%	4.04%
‘440399	Logs, non-coniferous nes	2.66%	7.03%	5.79%	9.29%	13.48%
‘440799	Lumber, non-coniferous nes	5.93%	8.22%	8.59%	10.57%	6.43%
‘470630	Pulps of fibrous cellulosic bamboo material	8.81%	1.04%	2.01%	0	0

Source: Author’s Calculation, 2016

It is better to compare MPI among countries. In 2014, Thailand exports highest share of product 440799 accounted nearly 20% of total export in the world market. The MPI of product 440799from Lao PDR is the third rank in the world market. Viet Nam, China and Thailand are the main importer of this product.

3.2.3 Growth of Export and Import

This section shows the growth of export and import of Lao PDR in total and specific on top 20 of export and import share. The export of Lao PDR was growing significantly in 2011 compared to previous year. In 2014, the export of Lao PDR shrank with negative growth of 1.81% compare to previous year. It is note that the export of many products were reduced in 2014 especially lumber, energy and coffee. The export of product 440399

increased sharply in 2011 and dropped about 17.48% in 2012. The product 852990 has a remarkable progress in term of growth since it's growth was about 4 times, 3 times and 22 times higher than previous year during the 2012-2014. The growth export of product 090111 (coffee), a strategy agriculture product of Lao PDR, increased in 2011 and then it decreased over time. It decreased approximately 27% in 2014.

Table 3.4 Growth of Export

Code	Product label	GEX11	GEX12	GEX13	GEX14
TOTAL	All products	45.93%	6.30%	22.14%	-1.81%
'440399	Logs, non-coniferous nes	151.93%	-15.48%	100.88%	79.71%
'740311	Copper cathodes and sections of cathodes unwrought	45.48%	1.82%	3.51%	-14.40%
'271600	Electrical energy	66.27%	9.87%	22.53%	-6.13%
'260300	Copper ores and concentrates	23.94%	-5.00%	-18.50%	8.25%
'440799	Lumber, non-coniferous nes	69.52%	5.34%	41.49%	-40.82%
'852990	Parts suitable fuse solely/princ w the app of headings 85.25 to 85.28	-16.17%	420.08%	361.62%	2214.91%
'260111	Iron ores & concentrates, oth than roasted iron pyrites, non-agglomerated	N/A	34783.33%	569.31%	40.39%
'620343	Mens/boys trousers and shorts, of synthetic fibres, not knitted	48.35%	7.83%	8.39%	14.74%
'090111	Coffee, not roasted, not decaffeinated	125.63%	-16.32%	-1.17%	-27.78%
'400121	Natural rubber in smoked sheets	49.19%	-2.71%	93.42%	-15.00%
'240319	Other smoking tobacco, whether or not containing tobacco substitutes in any proportion	N/A	N/A	-100.00%	N/A
'310420	Potassium chloride, in packages weighing more than 10 kg	N/A	1040.94%	94.64%	15.36%
'100590	Maize (corn) nes	6.57%	5.87%	31.77%	-24.45%
'400122	Technically specified natural rubber (TSNR)	76.74%	290.11%	64.30%	-38.67%

Table 3.4 Growth of Export (cont.)

Code	Product label	GEX11	GEX12	GEX13	GEX14
‘440290	Wood charcoal, incl. shell or nut charcoal, whether or not agglomerate	132.09%	45.71%	79.19%	48.23%
‘620342	Men/boys trousers and shorts, of cotton, not knitted	22.52%	-13.55%	3.29%	0.65%
‘170114	Raw cane sugar, not containing added flavouringorcolouring matter (excl. 170113)	N/A	N/A	0.75%	-20.24%
‘280469	Silicon nes	-54.92%	450.11%	-29.77%	-16.64%
‘620520	Mens/boys shirts, of cotton, not knitted	-6.66%	-20.61%	-6.98%	2.50%
‘121293	Sugar cane, fresh, chilled, frozen	N/A	N/A	44.63%	25.72%

Source: Author’s Calculation, 2016

Lao PDR imports more than export for a decade. The number of import product is three times of number of export products. Most of import of Lao PDR is related to petroleum, machinery and vehicles. Table 3.5 presents growth of import of top 20 of the highest import share. The growth of import was more than 30% during the 2011-2012. After that, the growth was slow down to 14% and 2% in 2013 and 2014, respectively. The import of 271019 (Other petroleum) decreased overtime due to the declining of oil price in the world market. The import of product 853650 (Electrical switches for a voltage not exceeding 1,000 volts, nes) increased about 40 times in 2014 comparing the previous year because of the construction of Hydro Power Dam.

Table 3.5 Growth of Import

Code	Product label	GIM 11	GIM 12	GIM 13	GIM 14
TOTAL	All products	30.01%	36.87%	14.50%	2.27%
‘271019	Other petroleum oils and preparations	46.60%	28.91%	3.03%	-8.49%
‘853650	Electrical switches for a voltage not exceeding 1,000 volts, nes	-55.26%	93.81%	65.18%	39,879.69%
‘870421	Diesel powered trucks with a GVW not exceeding five tonnes	10.42%	317.30%	43.03%	1.48%
‘271012	Light petroleum oils and preparations	N/A	N/A	17.38%	-10.99%
‘854231	Electronic integrated circuits as processors and controllers, whether	-42.11%	-35.64%	233,039.55%	-51.55%
‘870333	Automobiles with diesel engine displacing more than 2500 cc	-0.15%	48.38%	-4.86%	23.37%
‘020714	Fowls (gallusdomesticus), cuts & offal, frozen	329.37%	-0.96%	48.78%	17.53%
‘490700	Unusdpostage, revenuestamps; chequeforms, banknotes, bondcertific, etc	49.47%	-56.09%	115.89%	1641.76%
‘271600	Electrical energy	-31.64%	6.30%	88.17%	-42.92%
‘710812	Gold in unwrought forms non-monetary	114.94%	12.33%	2370.86%	186.41%
‘848049	Moulds for metal or metal carbides, nes	20.00%	16.67%	246,631.43%	-18.33%
‘730890	Structures & parts of structures, i/s (ex pre fabbldgs of headg no.9406)	-12.37%	193.63%	24.61%	-15.95%
‘721430	Bars &rods, i/nas, hot rolled drawn or extruded of free cuttgsteel, nes	70.64%	30.64%	281.16%	-13.54%
‘840690	Parts of steam and vapour turbines	-15.69%	72.09%	27970.27%	222.30%
‘252329	Portland cement nes	18.52%	45.86%	21.91%	-10.11%
‘847420	Crushing/grindg machines for earth/ stone/ores o oth minerals subs etc	588.63%	-7.69%	333.50%	2.36%

Table 3.5 Growth of Import (cont.)

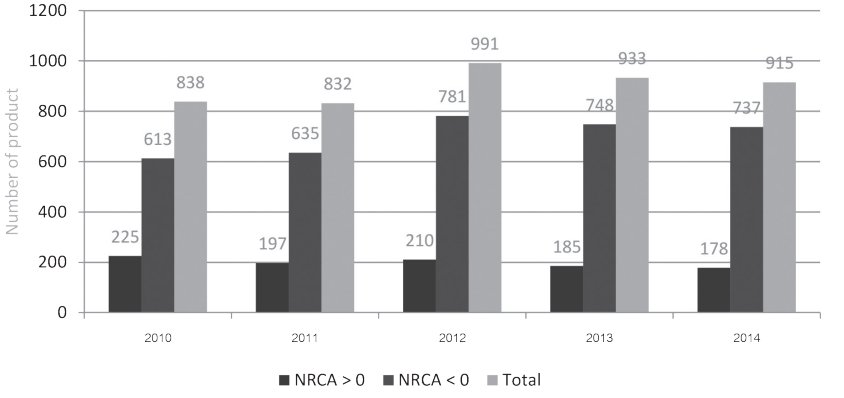
Code	Product label	GIM 11	GIM 12	GIM 13	GIM 14
‘731100	Containers for compressed or liquefied gas of iron or steel	73.97%	17.58%	223.10%	461.44%
‘842952	Shovels and excavators with a 360 revolving superstructure	81.35%	26.72%	-19.32%	-22.70%
‘851712	Telephones for cellular networks mobile telephones or for other wire	9.73%	15.04%	91.08%	26.65%
‘870332	Automobiles with diesel engine displacing more than 1500 cc to 2500 cc	3.49%	-44.66%	40.00%	2.58%

Source: Author’s Calculation, 2016

3.3 Normalized Revealed Comparative Advantage

NRCA of Lao’s products are analyzed across time, industries and RCEP’s member countries in this se ction. The general statistic of NRCA of Lao’s product is presented in Figure 3.2. Total number product on export increased during the 2010-2012 and it slightly dropped in 2013 and 2014. The number of product having a comparative advantage (NRCA>0) slightly decreased during the 2010-2014. On the other hand, the number of product having comparative disadvantage (NRCA<0) increased. In sum, many product of Lao PDR lost comparative advantage during the 2010-2014.

Figure 3.2 NRCA of Lao’s Product



NRCA of Lao's product was rank based on degree of index where the more value of NRCA the more comparative advantage. Top 20 of highest NRCA during the 2010-2014 are shown in Table 3.6. Product 740311 (Copper cathodes and sections of cathodes unwrought) has the strongest comparative advantage of Lao's product during 2011-2013 and is the second rank in 2014. NRCA of product 740311 slightly increased which means this product improve degree of comparative advantage during 2011-14. Product 440399 has significant progress in the rank when it moves from the forth to the first rank. Other product such as 090111 (Coffee, not roasted, not decaffeinated), 100590 (Maize (corn) nes) and 620520 (Mens/boys shirts, of cotton, not knitted) has lost their comparative advantage in 2014 as well as their rank.

Table 3.6 Top 20 of NRCA > 0

Rank	Code	NRCA 2010	Code	NRCA 2011	Code	NRCA 2012	Code	NRCA 2013	Code	NRCA 2014
1	‘740311	29.807	‘740311	36.183	‘740311	36.779	‘740311	37.061	‘440399	42.032
2	‘260300	27.003	‘260300	27.846	‘271600	27.087	‘271600	32.426	‘740311	31.480
3	‘271600	17.769	‘271600	24.671	‘260300	26.353	‘440799	25.129	‘271600	30.222
4	‘440799	12.255	‘440799	17.320	‘440799	18.211	‘440399	23.538	‘260300	22.355
5	‘440399	6.763	‘440399	14.241	‘440399	12.006	‘260300	20.739	‘440799	14.749
6	‘090111	2.791	‘090111	5.304	‘090111	4.405	‘271011	7.426	‘852990	6.964
7	‘620343	2.076	‘620343	2.564	‘620343	2.762	‘090111	4.258	‘620343	3.312
8	‘620520	2.052	‘620342	1.619	‘280469	2.262	‘400122	2.937	‘260111	3.157
9	‘100590	1.938	‘100590	1.603	‘170114	1.722	‘620343	2.908	‘090111	2.974
10	‘620342	1.614	‘620520	1.556	‘400122	1.695	‘400121	2.388	‘400121	2.021
11	‘170111	1.118	‘170111	1.548	‘100590	1.680	‘100590	2.213	‘240319	1.896
12	‘280469	1.082	‘280530	1.493	‘280530	1.366	‘260111	1.712	‘440290	1.888
13	‘610711	1.037	‘400121	1.273	‘620342	1.358	‘170114	1.665	‘400122	1.795
14	‘400121	1.035	‘610711	0.946	‘400121	1.254	‘280469	1.535	‘310420	1.783
15	‘611030	0.971	‘611030	0.873	‘620520	1.206	‘310420	1.526	‘100590	1.607
16	‘610990	0.956	‘252010	0.731	‘440729	1.137	‘620342	1.308	‘170114	1.300
17	‘252010	0.848	‘610990	0.683	‘611030	0.817	‘440290	1.281	‘620342	1.282
18	‘440729	0.759	‘440729	0.668	‘070490	0.806	‘440729	1.273	‘280469	1.259
19	‘270119	0.734	‘610343	0.631	‘440290	0.731	‘620520	1.057	‘620520	1.070
20	‘811292	0.623	‘270119	0.578	‘310420	0.725	‘260900	0.863	‘121293	0.948

Source: Author's Calculation, 2016

The number product having comparative disadvantage is more than those having comparative advantage. NRCA<0 means product being export has comparative disadvantage comparing with the same exporting product in the world market. The ranking in Table 3.7 show the rank of product having comparative disadvantage. Thus, the first rank means the worst in terms of comparative advantage. Most of products in the top 20 of NRCA<20 are products in 85. Product 999999 (Commodities not elsewhere specified) was the first rank during 2010-11 and the rank had changed to the second during 2012-2014. Product 271019 (Other petroleum oils and preparations) become the first rank of comparative disadvantage during the 2012-14.

Table 3.7 Top 20 of NRCA < 0

Rank	Code	NRCA 2010	Code	NRCA 2011	Code	NRCA 2012	Code	NRCA 2013	Code	NRCA 2014
1	‘999999	-5.138	‘999999	-5.538	‘271019	-6.170	‘271019	-7.497	‘271019	-6.892
2	‘300490	-2.307	‘300490	-2.456	‘999999	-4.462	‘999999	-5.782	‘999999	-5.330
3	‘870323	-1.891	‘870323	-2.209	‘271012	-2.607	‘271012	-3.816	‘870323	-3.023
4	‘854239	-1.395	‘710812	-1.594	‘300490	-2.500	‘870323	-3.022	‘710812	-2.571
5	‘847330	-1.215	‘851712	-1.509	‘870323	-2.446	‘851712	-2.374	‘851712	-2.508
6	‘851712	-1.183	‘847130	-1.307	‘851712	-1.700	‘854239	-2.072	‘854239	-2.135
7	‘847130	-1.144	‘870332	-1.258	‘854239	-1.602	‘854231	-2.057	‘847130	-1.695
8	‘870324	-1.030	‘847330	-1.148	‘847130	-1.515	‘847130	-1.732	‘870324	-1.373
9	‘710812	-1.019	‘260111	-1.087	‘870324	-1.263	‘870324	-1.441	‘851770	-1.361
10	‘870899	-0.792	‘870899	-0.926	‘870332	-1.221	‘851770	-1.346	‘847330	-1.356
11	‘710239	-0.786	‘851770	-0.923	‘847330	-1.152	‘847330	-1.334	‘851762	-1.215
12	‘851770	-0.778	‘851762	-0.836	‘270112	-1.053	‘851762	-1.161	‘711319	-1.103
13	‘851762	-0.714	‘854140	-0.688	‘851770	-1.024	‘870899	-1.109	‘870899	-1.055
14	‘854232	-0.694	‘847170	-0.664	‘851762	-0.964	‘300210	-0.944	‘710239	-0.986
15	‘852872	-0.671	‘844399	-0.587	‘870899	-0.945	‘901380	-0.919	‘300210	-0.975
16	‘847170	-0.588	‘852990	-0.521	‘901380	-0.825	‘711319	-0.841	‘847170	-0.813
17	‘870322	-0.566	‘850440	-0.459	‘847170	-0.788	‘847170	-0.836	‘901380	-0.807
18	‘852990	-0.508	‘711319	-0.455	‘711319	-0.731	‘870829	-0.695	‘880330	-0.757
19	‘850440	-0.403	‘880330	-0.446	‘870322	-0.656	‘844399	-0.655	‘870829	-0.703
20	‘870829	-0.401	‘392690	-0.419	‘844399	-0.584	‘880330	-0.634	‘870840	-0.651

Source: Author’s Calculation, 2016

Comparing NRCA of Lao's products with those of RCEP member countries provide the real picture of performance of Lao's export. China exports almost all the product to the world and half of them having comparative advantage. In addition, the number of product having comparative advantage increased during the 2010-14. India and Japan exports product having comparative advantage approximately 1,200, however, they export about 3,300 products having comparative disadvantage each year. Thailand is the leading country on export in ASEAN. Thailand export more than 4,000 products each year and 1,000 products having comparative advantage.

Vietnam is one leading country of CLMV countries and has a significant improvement on export in the recent years. Number of export product increased in line with number of product having comparative advantage year by year. Lao PDR performs better in term of number of product having NRCA > 0 than those in Cambodia and Brunei. However, the numbers of product having comparative advantage of Lao decreased while those in Cambodia and Brunei increased. Myanmar performs better than Lao PDR after country open to the world market. The number of export product and number of product having comparative advantage increase sharply in 2012.

Table 3.8 Number of Product with NRCA of RCEP's Countries

Countries		2010	2011	2012	2013	2014
AUS	NRCA>0	397	379	415	385	419
	NRCA<0	4,959	4,942	5,145	5,115	5,053
	Total	5,356	5,321	5,560	5,500	5,472
BRN	NRCA>0	55	52	52	61	68
	NRCA<0	1,335	1,344	1,365	1,317	1,268
	Total	1,390	1,396	1,417	1,378	1,336
KHM	NRCA>0	172	168	200	244	347
	NRCA<0	530	576	638	690	1,137
	Total	702	744	838	934	1,484

Table 3.8 Number of Product with NRCA of RCEP's Countries (cont.)

Countries		2010	2011	2012	2013	2014
CHN	NRCA>0	2,102	2,149	2,194	2,178	2,213
	NRCA<0	2,676	2,623	2,662	2,667	2,644
	Total	4,778	4,772	4,856	4,845	4,857
IDN	NRCA>0	824	800	886	913	915
	NRCA<0	3,181	3,245	3,302	3,217	3,189
	Total	4,005	4,045	4,188	4,130	4,104
IND	NRCA>0	1,261	1,295	1,403	1,363	1,415
	NRCA<0	3,480	3,488	3,347	3,475	3,393
	Total	4,741	4,783	4,750	4,838	4,808
JPN	NRCA>0	1,205	1,235	1,265	1,261	1,215
	NRCA<0	3,386	3,349	3,347	3,348	3,276
	Total	4,591	4,584	4,612	4,609	4,491
KOR	NRCA>0	548	423	462	406	392
	NRCA<0	1,699	1,655	1,590	1,572	1,558
	Total	2,247	2,078	2,052	1,978	1,950
LAO	NRCA>0	226	198	210	185	178
	NRCA<0	612	634	781	748	737
	Total	838	832	991	933	915
MYS	NRCA>0	803	798	899	885	857
	NRCA<0	3,597	3,612	3,551	3,648	3,634
	Total	4,400	4,410	4,450	4,533	4,491
MMR	NRCA>0	97	274	332	296	229
	NRCA<0	102	1,125	1,208	1,032	1,154
	Total	199	1,399	1,540	1,328	1,383
NZL	NRCA>0	609	605	657	606	576
	NRCA<0	3,390	3,368	3,431	3,475	3,504
	Total	3,999	3,973	4,088	4,081	4,080
PHL	NRCA>0	491	549	734	777	787
	NRCA<0	1,790	1,721	2,013	1,982	1,995
	Total	2,281	2,270	2,747	2,759	2,782

Table 3.8 Number of Product with NRCA of RCEP's Countries (cont.)

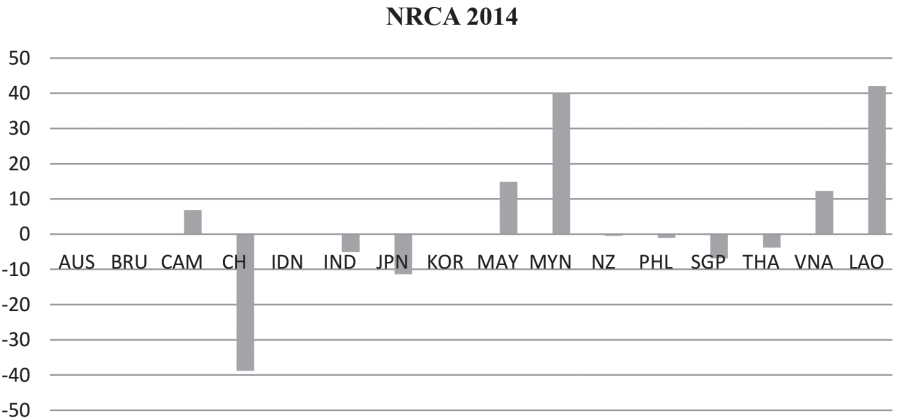
Countries		2010	2011	2012	2013	2014
SGP	NRCA>0	671	693	690	699	697
	NRCA<0	3,909	3,998	4,002	3,981	3,974
	Total	4,580	4,691	4,692	4,680	4,671
THA	NRCA>0	1,036	1,068	1,085	1,091	1,111
	NRCA<0	3,418	3,479	3,609	3,543	3,527
	Total	4,454	4,547	4,694	4,634	4,638
VNM	NRCA>0	896	898	928	914	959
	NRCA<0	2,631	2,634	2,867	2,870	3,260
	Total	3,527	3,532	3,795	3,784	4,219

Source: Author's Calculation, 2016

Note: AUS=Australia, BRN=Brunei, KHM=Cambodia, CHN=China, IDN=Indonesia, IND=India, JPN=Japan, KOR=Korea, LAO=Lao PDR, MYS=Myanmar, NZL=New Zealand, PHL=Philippines, SGP=Singapore, THA=Thailand, VNM=Vietnam

The comparison of NRCA among RCEP member countries shows the real performance of Lao export. There are only two products, 440399 (Logs, non-coniferous nes) and 271600 (Electrical energy), of Laos having the largest NRCA among RCEP members. Figure 3.3 shows the NRCA of product 440399 (Logs, non-coniferous nes) of RCEP members where most of RCEP members having NRCA<0 (Comparative disadvantage) on this products. Although many products of Lao having NRCA>0 (Comparative advantage), the degree of comparative advantage is lower than those in RCEP countries. Product 260111 (Iron ores & concentrates, oth than roasted iron pyrites, non-agglomerated), 260300 (Copper ores and concentrates) and 440799 (Lumber, non-coniferous nes) have comparative advantage; however, when comparing with RCEP they are the second and third rank in term of degree comparative advantage. Considered product 26011, Korea has more comparative advantage of this product than the same product from Laos. In other words, product from 26011 Lao has more comparative advantage than those on average from other countries except from Korea.

Figure 3.3 NRCA of product 440399 (Logs, non-coniferous nes) in RCEP members



3.4 Michaely Index

MI index is another comparative advantage index which considers the import and export value. A positive value of MI indicates that a particular product having a comparative advantage while a negative value of MI indicates that product having a comparative disadvantage. MI is calculated here to confirm whether MI is consistent with NRCA in term of theory. Table 3.9 shows top 20 of highest MI during 2010-2014. In general, MI is consistent with NRCA except the rank.

Table 3.9 Top 20 of the highest MI

Rank	Code	MI2010	Code	MI2011	Code	MI2012	Code	MI2013	Code	MI2014
1	‘740311	0.2209	‘740311	0.2202	‘740311	0.2110	‘740311	0.1788	‘440399	0.2043
2	‘260300	0.1994	‘260300	0.1694	‘260300	0.1514	‘271600	0.1333	‘740311	0.1559
3	‘271600	0.0986	‘271600	0.1325	‘271600	0.1414	‘440799	0.1191	‘271600	0.1362
4	‘440799	0.0893	‘440799	0.1037	‘440799	0.1028	‘440399	0.1116	‘260300	0.1113
5	‘440399	0.0494	‘440399	0.0854	‘440399	0.0678	‘260300	0.1009	‘440799	0.0718
6	‘090111	0.0214	‘090111	0.0331	‘090111	0.0261	‘271011	0.0359	‘852990	0.0331
7	‘100590	0.0155	‘620343	0.0156	‘620343	0.0158	‘090111	0.0211	‘260111	0.0204

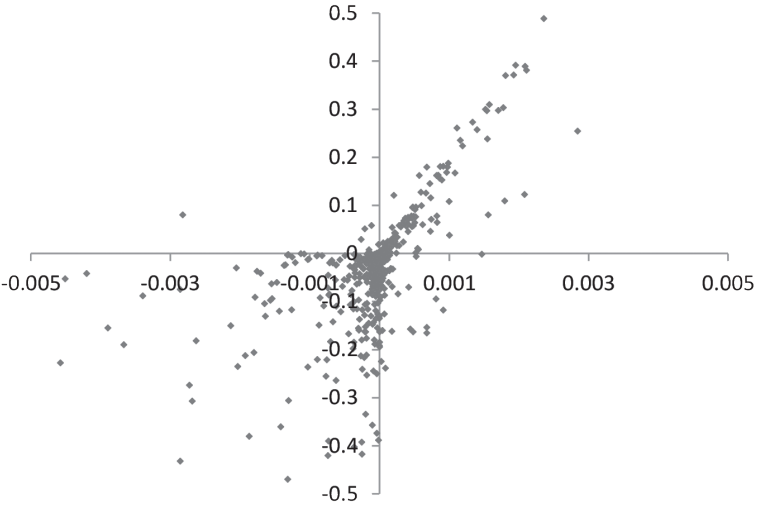
Table 3.9 Top 20 of the highest MI (cont.)

Rank	Code	MI2010	Code	MI2011	Code	MI2012	Code	MI2013	Code	MI2014
8	‘620520	0.0155	‘100590	0.0113	‘710812	0.0130	‘400122	0.0149	‘620343	0.0164
9	‘620343	0.0153	‘620342	0.0110	‘280469	0.0129	‘260111	0.0143	‘090111	0.0155
10	‘620342	0.0131	‘170111	0.0101	‘100590	0.0113	‘620343	0.0140	‘310420	0.0093
11	‘170111	0.0087	‘620520	0.0099	‘400122	0.0106	‘100590	0.0121	‘100590	0.0093
12	‘280469	0.0081	‘280530	0.0090	‘620342	0.0089	‘400121	0.0100	‘440290	0.0092
13	‘610711	0.0077	‘611030	0.0062	‘280530	0.0077	‘710812	0.0088	‘400122	0.0091
14	‘610990	0.0075	‘400121	0.0060	‘620520	0.0074	‘170114	0.0080	‘400121	0.0079
15	‘611030	0.0070	‘610711	0.0058	‘440729	0.0065	‘310420	0.0075	‘620342	0.0077
16	‘252010	0.0061	‘610990	0.0046	‘611030	0.0057	‘280469	0.0074	‘240319	0.0071
17	‘270119	0.0059	‘252010	0.0043	‘400121	0.0055	‘620342	0.0073	‘170114	0.0064
18	‘610910	0.0057	‘270119	0.0042	‘310420	0.0048	‘440290	0.0061	‘280469	0.0063
19	‘440729	0.0056	‘440729	0.0041	‘070490	0.0046	‘440729	0.0061	‘620520	0.0059
20	‘400121	0.0049	‘610343	0.0039	‘270119	0.0045	‘620520	0.0056	‘121293	0.0046

Source: Author's Calculation, 2016

Figure 3.4 show the product spaces between NRCA and MI in 2014. The vertical axis shows the value of NRCA while the horizontal axis shows the value of MI. The points on the right-top locate products having NRCA >0 (Comparative advantage) and MI>0 (Export more than import) where there are not many products in this part. Most of the products are located on the left-bottom where they are NRCA<0 (Comparative disadvantage) and MI < 0 (Import more than export). The points on the right-bottom shows products having NRCA < 0 (Comparative disadvantage) and MI > 0 (Export more than import). This part is not consistent with the concept of comparative advantage. The point falls in this part because of special preferences and quota. The last part is the points locating on the left-top where they are product having NRCA >0 and MI<0. This part occurs because of intra-industry trade. In other words, products in the same category are export and import at the same time because of different quality, style and taste.

Figure 3.4 NRCA VS MI 2014



3.5 Product classification

RCEP members agreed on tariff reduction base on AHTN code at 8 digit levels. Trade indicators, NRCA and MI are estimated under HS code at 6 digit level. There are 6058 products under HS code that are transformed to 9,558 under AHTN code. From the result of NRCA, there are 486 products having comparative advantage and 1,801 products having comparative disadvantage, 1,977 products for import-only and 5,294 products for non-active. All products are categorized into four groups based on the RCEP condition, i.e. initial offer list, 13 and 15 years phase-out period and general exception list. Team provides two options for product classification.

Option 1: The criteria are defined as the following:

A. Initial Offer List

This group covers 30% of 9,558 products under AHTN. There are 2,867 products in this group. Products are listed in the initial offer list when there are no export and import from Lao's PDR for five years. In other words,

these products are not active for five years. Non-active products are classified in this group because these products will not immediately affect or will slightly affect the Lao's economy. The result shows that there are 5,294 products are in the non-active product. About 2,427 products are shift into the 13 years Phase-out Period List.

B. 13 years Phase-out Period List

The second group has 13 years phase out period. Products in this group account for 30% or 2,867 products. Product having comparative advantage (NRCA>0) are listed in this group. Products having comparative advantage possibly increase their export when the tariff is eliminated. Number of product having comparative advantage is 486 products. Therefore, 46 products having comparative advantage (NRCA>0) are shifted to 15 years Phase-out Period. Products having comparative disadvantage may better-off from the reduction of tariff or they may worst-off because the same product from partner countries are more comparative advantage. Thus, the 13 year phase-out period group is a sum of 2,427 products from non-active product and 440 products from NRCA>0.

C. 15 years Phase-out Period List

Number of product of this group is 20% of the total or 1,912 products. The classification of this group is to extend the period of protection for the product which has not ready for competition. Therefore, this group includes comparative advantage (46), comparative disadvantage products (1,801) and import-only products (65).

D. General Exception List

The general exception lists includes the product having no export but import-only for 5 years. Products in this group are considered that these products are not competitive compare to the same product in RCEP countries.

Table 3.10 Product classification (Option 1)

Description	Initial Offer (30%)	13 year (30%)	15 year (20%)	GE (20%)	Total
Non-active	2,867	2,427	-	-	5,294
NRCA>0	-	440	46	-	486
NRCA<0	-	-	1,801	-	1801
Import-only	-	-	65	1,912	1977
Total	2,867	2,867	1,912	1,912	9,558

Option 2: The criteria are defined as the following. Initial offer list are included product having comparative disadvantage and comparative advantage. The idea is that product having comparative disadvantage need an elaboration of tariff in order to support these products. Then, 13 years phase-out and 15 years phase-out list are considered import-only product products. The purpose of this is to reduce import price and consumers in domestic will be well-off. General exception list includes product of non-active products.

Table 3.11 Product classification (Option 2)

Description	Initial Offer (30%)	13 year (30%)	15 year (20%)	GE (20%)	Total
Non-active	-	1,470	1,912	1,912	5,294
NRCA>0	486	-	-	-	486
NRCA<0	1,801	-	-	-	1,801
Import-only	580	1,397	-	-	1,977
Total	2,867	2,867	1,912	1,912	9,558

It is note that the classification of products of four groups base on result of trade indicators only. Other factors such as strategic export products, income of the poor, infant industry and the like are not taken into a consideration.

3.6 Discussion

Number of active product on export and import of Lao PDR accounted for only 30% of the 6,058 products under HS. The number of export product covers only 10-15% of the total while the number of import product covers about 40-50% of the total. Although export and import of Lao increased, import line is steeper than export line. In other words, growth of import is faster than growth of export. In addition, trade statistic shows that the trade deficit has been expanding year by year. This indicates that Lao relies very much on product from other countries while the income from export is not sufficient to cover the expense from import.

There are few products having high market share in the world where they are concentrated on natural resources such as lumber and minerals. These products are not much benefit for Lao in term of value added because they are exported as raw materials. Export of natural resources is the main source of income for the Lao. Out of top 20 highest export shares, seven products are natural resources. Agriculture products are also important source of income of Lao PDR. Coffee shares around 2-3 % of total export each year. Nevertheless, the world price of coffee was close to 1 USD per pound in 2014. The price of coffee sharply increased in the mid of 2014 and dramatically decreased in 2015. As a result, export of coffee loses its comparative advantage in recent years.

Comparative advantage of Lao's products mainly concentrates on natural resources and labor intensive base. As number of export of Lao's product account for only 15% of the total, number of product having comparative advantage (NRCA>0) account for only 20% of total Lao's export product and only 3% of total product under HS. About 80% of total export of Lao has comparative disadvantage. It is noteworthy that many products having comparative disadvantage benefit from the special preferences for instance garment industries. Although many products under garment industries have comparative advantage, many of them lost the comparative advantage in recent years because monthly wage of labor in Lao PDR slightly increases year by year. The statistics show that monthly wage increases from 990,000

Kip per month in 2003 to 1,200,000 Kip per month in 2013[1] (Sondergaard, 2014). Furthermore, the shortage of labor in the recent years causes more problems for garment industries (Laos Investment Reviews, 2016).

In addition, most of product having comparative disadvantage are intermediate product for supporting the production in other countries for example electronic part, motor vehicle part and computer part. These products are in initial stage of development or infant industries that require supports from government in term of reducing barriers from the partner countries. Rubber trees are also widely planted around the country. Its export increases the share on total export of Lao PDR in recent year. However, it turns out that the NRCA of product 400129 (Natural rubber in other forms nes) decreased during 2010-2014. The reason was the price of sharply decrease in the world market.

Comparing comparative advantage of Lao's products with those in RCEP member countries, it found that few products having comparative advantage more than those in RCEP countries. The rest are less comparative advantage than those in RCEP member countries. There are many products of Lao's have potential since degree of comparative advantage increased over the past five years such as product 121293 (Sugar cane), 071410 (Cassava) and 442090 (Wood charcoal).

4. Conclusion and Policy Recommendation

Trade negotiation with RCEP is very important schedule for Lao to discuss with partner country on tariff reduction. Previous studies did not provide appropriate information for MOIC for trade negotiation. Therefore, the study of export performance of Lao's products on which product having potential and which product having constraint is essential for MOIC especially FTPD. This study applied many trade indicators such as export and import share, market power index, growth of export and import, NRCA, and MI in order to analyse performance of Lao's product as well as comparing with

[1] Constant 2008 Lao Kip.

RCEP members. After analysing export and import performance, Lao's products are classified of into four groups base on non-active product, product having comparative advantage, product having comparative disadvantage and import-only product.

The main results suggest that there are many non-active products of Laos. The number of product being export is small proportion of the total while import covers a haft of total product in the world. This suggests that Lao PDR relying on products from other countries. Export products of Lao are mainly concentrated on natural resources. They are not high value added because they are exported as raw materials. Many agriculture products have produced widely in Lao PDR; however, they lose comparative advantage in recent year due to the low market price.

Lao has very small number of product having comparative advantage more than those from RCEP countries. Most of products having comparative advantage are lower than those from countries like China, India and Thailand. Products having comparative disadvantage are also far behind those from many countries. The use of comparative advantage for product classification provides two alternative options for MOIC for further negotiation. Option one: In order to avoid the immediate impact and secure available offensive interests from tariff eliminations under RCEP, trade negotiator of Lao PDR should consider as following options to prepare Offer List and Request List. On Offer List, non-active product should be put in the first group (immediate elimination after agreement enter into force), follow by product having comparative advantage, then product having comparative disadvantage and import only product. Option two: the classification start with product having comparative disadvantage, comparative advantage and import only and non-active products.

There are some policy recommendations that could improve trade in general. It is very important to create a value added for the export of natural resources by improving business environment for promoting value added investment activities in the country regardless of investor nationality as long as they can provide efficient technology in producing those value added

product for export. Legally, products like timber are not permitted to export, but there are illegally exports across the border. Government of Lao PDR needs more an investigation for products having comparative disadvantage on why they are weak and how to support these products. Most of labor intensive products lose comparative advantage in recent years due to the rising of labor cost and shortage labor supply. It is very important to give more incentive for worker such as accommodation and social security.

FTPD's need more staffwho have basic knowledge in order to make use of relevant study and report and also work closely and update regularly with researchers and relevant research institute, in order to keep up date on key products which may be dropped comparative advantage or identify products which would have potential to increase comparative advantage, including monitoring export and import performance of Lao and partner countries every year which would be able to evaluate the countries both strength and weakness and necessary policy action can be implemented in a timely manners.

It's also importance to undertake another research on those losing comparative advantage products, in particular agricultural products, in order to identify constrain behind and develop a right policy measure to address accordingly.

This study provides the details of trade performance of Lao and RCEP. However, there are some shortcomings for this research. Trade indicators covers product for 6 digit levels under HS code where the RCEP negotiation requires 8 digit levels under AHTN code. This would require further Excel technique to transform from 6 digit levels to AHTN 8 digit levels. The classification of 4 groups of product is based on value of export and import, NRCA and MI only where it requires other criteria such as product related to poverty eradication, export strategy, infant industry and the like. Such issues trade indicator could not absorb all criteria. Therefore, further study on details of potential and weak products in term of export covers other criteria is necessary for both government and private sector in Lao PDR. So that correct policy solution can be taken to tackle inside weakness and improve its comparative advantage accordingly.

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