The Impact of Trade Policy Reform on Social Welfare, Inequality and Poverty: The case of Lao PDR.

SOUKAVONG Bounthone[*]

Abstract

Since 1997, Lao PRD has been come full member of ASEAN and continuing trade reform as AFTA commitments in following year. After that international trade and economic growth had strong relationship during this reform periods. This paper examined the impact of trade policy reform on social welfare, inequality, and poverty in Lao PDR from 1997-2003. In addition, we investigated the effect of price changes under AFTA commitments by pass-through approach between 2005 and 2007. We also analyzed the social welfare and inequality measurement indices which based on Atkinson-(1970) and Sen (1973) approaches by using Lao Expenditure Consumption Survey data. The results from our calculations, we found that during trade liberalization process could increase households' social welfare by 196,529 LAK and inequality has declined by 10 percent. Moreover, the import commodity prices change under AFTA commitments have been decreased significantly in 2007 especially consumption goods and investment capital goods. Those effects seem to be benefits for low increase households and poor farmers who could purchase lower imported commodity prices and higher quality investment capital goods.

I. Introduction

[*] Faculty of Economics and Business Management, National University of Laos.
  bounthone@yahoo.com
  Tel: (856) 21-770070, (856) 20-5654694.

There are many least developed and developing countries in Asian adopted their trade policy in order to catch up benefit of international trade by looking for their own resource abundance and comparative advantage. The regional economic integration is important and essential factors of economic development in the period of globalization. The Lao PDR is one of least developed country in South East Asia, with income per capita US$390[1]. The government had begun opening door to integrate world economy since 1989 after introducing "New Economic Mechanism" to transit from a centrally planned to a market-oriented economy. Trade reform accelerated after Lao joining ASEAN and AFTA in 1998 and reduce tariff on Common Effective Preferential Tariff (CEPT) scheme.

According to Lao Expenditure and Consumption Survey 2002/03 (LECS III), it found that incidence of poverty has declined by 33.5% compare with 1992/93 and 1997/98 accounted for 46% and 39.1%, respectively. It also showed that percentage of poor people who lives in rural areas significantly has fallen about 14.2% from 1992/93 to 2002/03. Therefore, openness and economic growth in the past decade could be reduced poverty in rural areas which is the highest poverty ratio of country.

This paper discusses the impact of trade policy reform as tariff reduction on poverty in Lao PDR through importing and domestic commodity price change. As we have known that poor people who have the lowest income and low purchasing power groups in society. If government imposed high tariff rates and other non-trade barrier, the country may face high inflation or high basic goods price because of high imported commodity prices and high costs of production for inefficiency of domestic industries. The welfare of poor people and government officials are certainly affected from trade protection. Thus, government and concerning policy makers could relieve those effects by continuing trade policy reforms in order to lower domestic price and increase in quality of consumer goods, those may be occurred in both short and long term of sustainable development within country.

For second the objective of this paper is to examine the effect of trade policy reform on social welfare and inequality as a whole during reform process. Those effects may increase inequality among people who are living in urban area rather poorer people in countryside. After Lao PDR became full member of ASEAN and AFTA in 1998, the government of Lao PDR recognized that openness country and trade reform are very important for country development and international relationship especially neighboring countries. However, the openness and joining regional trade agreements may have both negative and positive effects on economy and society as a whole. Hopefully, those benefits gains from trade liberalization may be greater than the country's losses and those gains transfer to poor people who are high proportion of domestic consumers via market mechanism and government distributions.

The primary data analyzing the changed in social welfare and inequality during reform process in Laos is Lao Expenditure and Consumption Survey 2002/03 (LECS3). It is a third comprehensive national living standard survey of households throughout country of Laos during 2002-2003. Moreover, the secondary data sources take from various sources such as the World Bank, Asian Development Bank (ADB), International Financial Statistics (IFS, IMF), ASEAN Secretariat, and Lao Authorities especially Ministry of Industry and Commerce and customs department of ministry of finance for analyzing the impact of cutting tariffs on price change.

II. Trade Reform and Poverty in Laos

[1] World Development Indicators (WDI) database, April 2006.

2.1 The process of Lao trade reform after 1990

The Lao PDR has been introduced the New Economic Mechanism (NEM) by changing from a central planning economy to market oriented economy since 1986. Country has continued improving and reforming institutions in order to integrate into the world economy. The Lao government begun implements of trade policy reform from 1993 by reducing tariff rates and they can range from 5 percent to 100 percent as maximum rates in 1993 (See appendix Table A1). It was difficult to calculate the average of tariff rates because tariff data reported only the ranking rate of product categories. Therefore, the IMF proposed new tariff rate structures as working as technical assistance to the Lao government with three different rates such as 10, 20, 30, and 40 percent (World Bank 1994) which is maximum rate for protection domestic industry including Lao Beer and other import-substituting industries.

After the IMF gave recommendations on reducing the maximum import tariff rates from 150 percent to 40 percent in 1995, the new tariff structure can be ranking from minimum 5 percent to 40 percent with six numbers of different rates at the end of year 2000 (IMF 2002) as showing in appendix Table A1. The highest tariff rates still wanted to apply for domestic industry protections and unnecessary consumer goods especially non-food goods in order relieve huge trade deficit in each year.

Moreover, the non-tariff barriers is very significant restriction of international trade in Laos including quantitative restrictions, domestic regulations, geography barriers, and others. The Lao government has been continuing to use trade licensing system since the 1980s to control quantities of import and export sectors. The private companies had to obtain import and export licenses. Moreover, they had to submit their trading annual plans to the State committee for Foreign Economic relations and Trade (IMF 2002) before importing and exporting goods. The main purposes of implement those systems are to protect domestic infant industries and to earn government revenues from quotas' licensing and reducing huge trade deficit. After trade reform in 1993, import-export systems have become simplified and liberalized, but the import and export licenses are still necessary to import and export some goods.

The import procedures of all goods from aboard in 2004 can be classified into three groups (World Bank 2006): general goods, under controlled goods, and prohibited goods. Each group has to submit a report plan to office authorities differently such as provincial trade offices, foreign trade department in Ministry of Industry and Commerce (MOIC), and other official authorities (see Figure A1). Some companies and importers don't need to obtain import licensing, but they must present their own business documents including business registration, tax registration, and others. If they need to import those under controlled products, they require to present approval documents from relevant or higher level authorities. For example, there are 25 categories of goods subject to import approval or certificate from related government agencies including the luxury consumer goods (such as alcohol, cigarettes, perfumes), fuel, steel bar, cement, beer, rice, auto vehicles, tobacco, etc.

Similarly to import goods, export procedures for general goods which do not including in the list of controlled or prohibited goods in the Notification No, 1376/MOIC.DIMEX of 10 October 2006, producers can export their products without any licensing, but they have to prepare some necessary documents such as annual business and tax registrations, invoices, packing list, and others to present to customs officers at border checkpoints (See Figure A2). However, if those goods are subjected to export control and prohibition, exporters must receive approval certifications from relevant authority agencies such as Prime Minister Office, the foreign trade department of the Ministry of Industry and Commerce (MOIC), and other ministries (World Bank 2006).

2.2 Poverty Reduction during Reform

There are about 25,000 people who died because of hungers or hunger-relative causes[2]. They don't have enough money to buy foods, medicines, clean water and other necessary things for living conditions. Thus many least developed and developing countries pay careful attention to poverty reduction programs recently in order to alleviate poverty in their countries. The Lao government also set poverty reduction programs as the first priority issues in social-economic planning every year to help the poor people effectively with limited public resources. Therefore, the government of Lao PDR believes that rapid economic growth can help and improve the living conditions of poor people to escape from poverty. Moreover, the government needs to run away from current status as a least developed country by 2020 and meet the Millennium Development Goals (MDGs). In order to achieve those goals, the government developed the national development strategies such as the National Social-Economic Development Plan (NSEDP), the National Growth and Poverty Eradication Strategy (NGPES), and the Poverty Reduction Strategy Paper (PRSP). These strategies will be master plan for national development with assistance from international organizations.

Poverty in Lao PDR is mainly living in rural area which is remote from main road and city. They are mostly working in agricultural sector as main sources of their income, but their livelihoods still based on natural environments, lacking knowledge and working with poor technologies. Poor people always work hard on their owner fields and farms, but they received outputs less than it should be (low productivity of agricultural land). According to three times Lao Expenditure and Consumption Survey: 1992/93(LECS I), 1997/98(LECS II), and 2002/03 (LECS III), we found that the percentage of the poorest region is in the Northern part of country especially Huaphanh (71.3% in 1992/93) and Phongsaly (72.0% in 1992/93) provinces while Vientiane Municipality is the richest region. However, the national poverty rate has fallen from 46 percent in LECS I to 33.5 percent in LECS III by 12.5 percent within decade.

You may have a question in your mind that "Why does the Northern part of Laos have many poorer than region? In order to answer this question we need to understand what are the causation and factor of the poverty. Magnus Andersson, Anders Engvall, and Ari Kokko (2006) examined the determinants of income and poverty in Laos by using household survey data (LECSI-III). They found that poor households are characterized by large household size, large dependency ration, low levels of human capital, simple technology, limited access to agricultural inputs, poor essential infrastructure, and limited access to health services. From that study we see that poor households in rural area which accounted for 40.97 percent (WDI-2007) could not access road particular in raining season for several months a year. Thus, Peter Warr (2005) who studied "Road Development and Poverty Reduction in Laos" by using National Household Survey data between 1992/93-1997/98 suggested that the improving road access in wet weather could decline rural poverty by 13 percent. He also pointed out that about 31.6 percent of the rural households don't have road access.

III.   Theoretical Framework and Methodology
3.1 The linkage between trade policy reform and poverty
At present, there are many researches including theoretical and empirical papers which discussed about the effect of trade reform and economic growth on poverty reduction. Winters (2000) provided very fundamental analysis framework on relationship between trade policy reform and poverty reduction. His studies mainly focused on consumer price change and import availability, income distribution and employment, government revenue and expenditure effects due to reducing trade tax. The following his paper, there are many extended empirical and theoretical papers discuss on trade liberalization, economic growth, poverty alleviation.

---

[2] United Nations World Food Program (WFP), Oxfam, UNICEF

Many articles try to prove and answer the question of "how is trade reform linked to poverty reduction?", and "who will be gained and lost within society from reform?" The linkages trade liberalization and poverty reduction could be discussed as channel of price change and importing availability, income distribution and employment, and government revenue and its expenditure. However, in this paper we will focus on first channel as the impact of price change on poverty reduction.

The most effect of trade liberalization on poverty transmits via price change channel and imported goods when government released trade barriers especially import tariffs. Those effects have been discussed extensively in developing countries among policy makers. The poor household could be both consumers and producers at the same time so that reducing tariffs particular products may hurt domestic producers who are producing those products with lower prices than before reforms. However, their losing income may compensate by imported lower intermediate prices as lower cost of production. In general the most consumers get benefits and gains from trade reforms by enjoying low price, good quality of products, imported availability.

Figure 3.1 shows the effects of trade policy reform on poverty via price channel including prices of final consumption goods and intermediate goods. The poor households who could be consumers and producers at the same time, they may surf from transmission of price change from world markets to local markets. For example, the land locked countries that they don't have directly see part for their shipping. They have to transit their products through neighboring countries. Those countries are disadvantage in term of transportation cost. The neighboring country markets should be first priority developed and extend market shares in order to reduce transportation costs. The poor households who are buying necessary goods for their daily life (foods, cloths, etc), they may be gains from trade liberalization with lowing import commodity prices. Especially importing countries, consumers will get benefits from cutting tariff rate and remove non tariff barriers.

3.2 Inequality and Social Welfare

In order to analyze the degree of inequality and changing social welfare of household especially poor household throughout country, we simply use Atkinson (1970) of inequality index. He was a fundamental idea of measure inequality through social welfare function. We begin with social welfare function as an increasing function of all variable y's in the population. Thus, we have as follow equation:

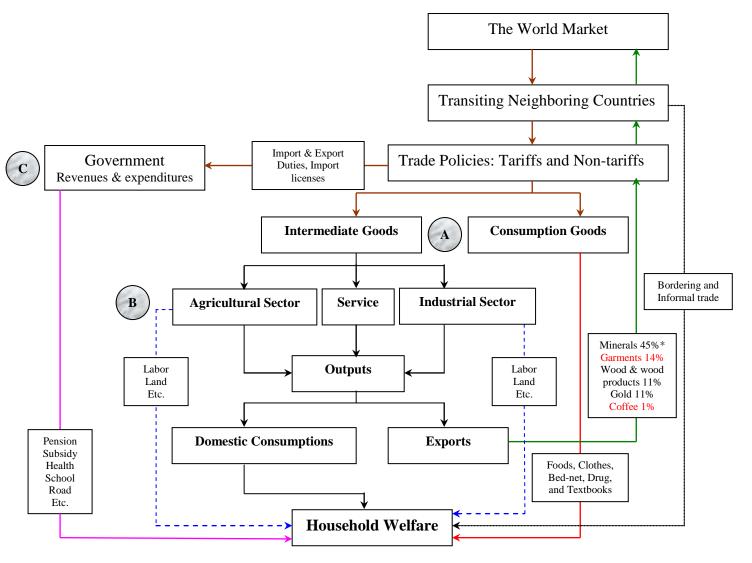$$SW = f(y_1, y_2, ..., y_N) \text{ or } SW = \sum_{h=1}^{N} (y_h) \qquad (3.1)$$

where SW is social welfare, which sum all individual household utility as per capita real income. y_h is per capita household real income (consumption) of household or person h (h = 1, 2,3,….N) in certain period. N is the population size. If data is available at the level of household, it is better to discuss household or family welfare as individual of household members to see clearly individual welfare. Therefore, the aggregated welfare can be measured as summing all individual welfare. It could be implied that if the amount of individual income change, it will be effect the same amount of change on social welfare. Suppose function $f(.)$ is the function of homogeneous of degree one so that we can rewrite (1) as:

$$SW = \mu f(\frac{y_1}{\mu}, \frac{y_2}{\mu}, ..., \frac{y_N}{\mu}) \text{ or } SW = \mu \sum_{h=1}^{N} \left(\frac{y_h}{\mu} \right) \qquad (3.2)$$

where μ is the mean income of y's. If individual real income equaled to the mean, the society would has perfect equality and everyone would has the mean level as their welfares.

Figure 3.1 Analyzing Approach of the Effects of Trade Reform on Poor Households:

Trade Policy and Its effect on Poverty

Note: * Export data based on FY2005-2006, MOC, Vientiane, Lao PDR 2007.

For any unequal income distribution, the welfare of each person can not be greater than the mean. Sen's (1973)[3] introduced social welfare function in term of inequality measurement as below:

$$SW = \mu(1-I) \quad \text{or} \quad I = 1 - \frac{1}{\mu}(WS) \tag{3.3}$$

where **I** is measure of inequality in society. The value of **I** ranges from 0 to 1. For instant, the value of **I** would be zero when the incomes were equally distributed so that the income mean (μ) will be the same as individual social welfare. Then, Increase in its values, it means that society has high degree of inequality.

In order to have inequality index with a social welfare function, we would define social welfare function as an individual household or person. The individual household or person's utility; $U = g(c_h)$ determined by total individual household or person expenditure (or consumption, c_h). If we assumed that total income equal total expenditure or consumption (**y** = **c**) on goods and services, the aggregate welfare would be equivalent to sum all individual

---

[3] Sen, A. K. (1973)

expenditure (consumption) on goods and services or their income in the same period of time. Thus we can write social welfare function as $SW = \sum_{h=1}^{N} g(c_h)$ or the same as (1) and solving for the inequality measure; we have approach which is exemplified by Atkinson's own inequality measure. This starts from the additive social welfare function as:

$$\ln W = \frac{1}{N} \sum_{i=1}^{N} \ln x_i \ , \ \varepsilon = 1 \tag{3.4}$$

The parameter ε is degree of "inequality aversion". Its value arranges from zero to infinity ($\varepsilon \geq 0$). The important point is value of parameter ε, and what should be value? we have inequality measurement index which was developed by Atkinson (1970) as:

$$I_A = 1 - \left[\frac{1}{N} \sum_{h}^{n} \left(\frac{y_h}{\mu} \right)^{1-\varepsilon} \right]^{\frac{1}{(1-\varepsilon)}} , \ \forall \varepsilon > 0, \varepsilon \neq 1 \tag{3.5}$$

When $\varepsilon = 1$, we have $\ln W = \frac{1}{N} \sum_{h=1}^{N} \ln y_h$ (from equation 4), then we rewrite into exponential form as:
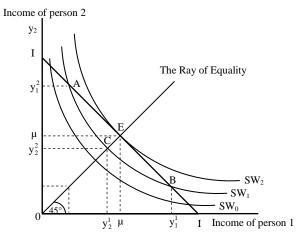
$$W = e^{\frac{1}{N} \sum_{h=1}^{N} \ln y_h}$$ so that we obtained new index as:

$$I_A = 1 - \frac{1}{\mu} e^{\frac{1}{N} \sum_{h=1}^{N} \ln y_h} \tag{3.6}$$

where $e \approx 2.71828183$. The index value arranges from zero to one as measuring percentage of inequality. Suppose index I equals 0.1, it implies that society could achieve the same level of social welfare only 90% of the total income if income were equally distributed.

In Figure 3.2 showed analysis of social welfare and inequality measurements for the case of a two-person world. Each person has a given identical individual total income along on the line II which represents all possible distributions of this given total income. This approach has been suggested by Sen (1973). The point A is the actual allocation of income distribution by laying on II line and social welfare indifference curve; SW_1 with person 2 obtaining income y_1^2. Since social welfare curves is convex to origin and symmetrical function of individual income. Thus, the point B is reflected in the point A with the 45 degree line and lie on the same total income line II (any point allocating on straight line IEI is implied that everyone corresponds the same total income and social welfare value becomes higher when the income distributed between A and B) with $0\,y_1^1$ income of person 1 and B y_1^1 which is the income of person 2. As Atkinson assumed that social welfare is the function of individual utility functions and they are strictly concave with respect to income. Social welfare indifference curve can be shifted upward from SW_1 to SW_2 when people in society could be redistributed income from richer one to poorer and the poorest. The point C is actual income distribution among two persons and that post also lie somewhere on the 45 degree line with sharing the same social welfare curve W_1 (as the line ACB). Even thought the point C received income less than point A and B ($y_1^1 = y_1^2 < \mu$), they can obtain the same social welfare.

Figure 3.2 Inequality Measurements and Social Welfare.

Source: Deaton (1997) and Sen (1973).

It is clear that level of social indifference curve in figure 3.2 ranks from low to high with higher one is farther from origin ($SW_0 < SW_1 < SW_2$). Total income line is tangent to social indifference curve, at point E where everyone has the same income (μ) and obtaining social welfare, even it is very rare in practice. Dalton (1920) gave suggestion that the degree of inequality measure can be defined as the ratio of total social welfare be able achieved actual income distribution (measuring as distance OC or income, $y_1^1 = y_1^2$) to the total social welfare attainable under income equal distribution (OE or μ). Therefore, we can measure equality by $\dfrac{OC}{OE}$ or $\dfrac{y_2^1}{\mu} = \dfrac{y_2^2}{\mu}$, since the point C lie on the same social indifference curve, SW_2, as A and B so that OC or $y_1^1 = y_1^2$ is the equally distributed equivalent income y. If we subtract that ratio from unity, we can get result as equation (3.3) or equivalent to the ratio $\dfrac{CE}{OE}$ (if denoted distance CE as function of d(x), where x is any real number of distances CE, $\lim\limits_{x \to 0} \dfrac{d(x)}{\frac{1}{N}\sum\limits_{h=1}^{N} f(y_h)} = 0$ the income distributed equally and everyone has the same social welfare as mean income).

Moreover, Atkinson inequality index has been raised important question on inequality aversion or Constant Relative Inequality Aversion; CRIA, (the value of parameter ε) on his equations, see (3.5) and (3.6). He emphasized the relative degree of inequality between developing and developed countries that they depended on the degree of inequality aversion. In developing countries, for example, the distribution of income at low degree of inequality aversion is more equal than at higher once, while the low degree of inequality when increase in