Poverty Profile in Post Conflict Sri Lanka

J.Suresh[1]

[1]*Department of Economics, Eastern University, Sri Lanka.*
pjpraba11@yahoo.com.au

Abstract

Poverty reduction is the key objective of most of the countries' development plan. Development planners work in many areas to meet this key objective. Poverty profile is a descriptive tool to analyse the general characteristics of people who are considered to be poor, and compare the incidence of poverty across time and population groups, will help the policy makers by giving a background of poverty. This paper presents the poverty profile of Sri Lanka in 2009/10 and 2012/13. It assesses the magnitude of poverty in Sri Lanka by using Household Income and Expenditure survey of 2009/10 and 2012/13. The study used six popular indices, which have different interpretations, to estimate poverty level of an individual. The study found that the factors relate with individual's capabilities such education and employment are the most significant factors relate to poverty. Increasing expenditure on education and creating opportunities for employment are suggesting the importance of generating income sources as policy strategies.

Keywords: poverty, poverty profile, post conflict

Introduction

The objective of this study is to estimate the poverty level in 2009/10 and 2012/13 by regional, demographic and capability characteristics. Sri Lanka has been experienced a significant reduction in poverty over the past two decades. Post-conflict scenario and large development efforts in reconstruction and rehabilitation has resulted in a considerable reduction in the poverty headcount ratio from over 29 per cent in 1995/96 to 7 per cent in 2012/13. While number of poor people in Sri Lanka declined from five million in 1995/96 to one million people in 2012/13, the reduction in poverty rates was not uniform across the country (World Bank, 2015). Since poverty is the rural phenomenon, majority of the Sri Lankan population (77.4 per cent) in 2012 was found to live in rural areas.

The subject of poverty in Sri Lanka has been the focus of several earlier studies (Datt and Gunawardena, 1997; Lakshman, W. D., 1997; Yapa L., 1998; Gunawardena 2007; Gunawardena et al., 2007; de Silva, 2008; Gunatilaka, 2010; Gunatilaka, 2014). Nevertheless, many of the analyses excluded the Northern and Eastern Provinces since the

conflict itself precluded data collection in these areas until the end of the civil war in 2009. As a result, there is little information about poverty in this region during the war years. The present study however is in a position to take advantage of the greater availability of data that has emerged after the war.

The paper is organised as follows. The next section describes the data and the method used in this study which is the methodology has been adapted by Department of Census and Statistics. Section 3 describes different poverty measures which are used in this study to calculate poverty. Next Section presents poverty profile by regional, demographic and capability characteristics of two survey periods. The last section summaries the findings and advocate suggestions for policy makers.

Data

The study uses expenditure data from the 2009/10 and 2012/13 Household Income and Expenditure Surveys (HIES) conducted by the Department of Census and Statistics, Sri Lanka. The data includes all administrative districts of the country other than the three poorest districts of Northern Province, Mannar, Mulaitivu and Killinochchi which were excluded in the 2009/10 HIES, because of the conflict situation prevailing in these areas at the time precluded data collection. However, the most recent survey in the series was conducted in 2012/13 and covered all 25 districts. The study's principal unit of analysis is the individual. Though, the consumption expenditure data were collected by household, the study uses an equivalent scale to determine individual consumption level. Household expenditure data was adjusted for spatial differences in the cost of living by using the district-wise Laspeyres price index for 2009/10 and 2012/13 developed by the Department of Census and Statistics based on the same survey data set. The per capita real consumption of each household was then compared with the official poverty line developed by the Department of Census and Statistics to determine whether the household is poor. The national poverty line was Rs. 3082 per person per month in 2009/10 and the Rs. 3624 for 2012/13. Both defined the poverty line in terms of the estimated cost (per capita) of a minimum food and non-food consumption bundle.

Poverty Measures

Poverty measurement is crucial to policy makers involved in poverty alleviation planning and programmes. Such measures are used to monitor the progress and failure of anti-poverty programmes. The way the poverty is measured will give a clear picture of the status of poverty. Ravallion(1998) highlights the fact that a reliable poverty measure can be used as an instrument to gain the attention of the government on the poor. Haughton and Khandker (2009) also provide different arguments as to why we need a good measure of poverty. They

explain that through good poverty measure we can target domestic and worldwide interventions, monitoring and evaluating of anti-poverty projects and programmes and see the effectiveness of government and other institutions in this regard. While Zheng(1997) talked about several measures of poverty[1] Haughton and Khandker (2009) selected six indices such as Head Count Index and Poverty Gap Index, Squared Poverty Gap Index, Watt index, Sen Index and Thon Index. This study also uses same measures for the aggregation of poverty in Sri Lanka.

Head count index (HCI) is a simple and widely used measure of poverty. It is the measure of scale of the poverty. That means this measure can only give an estimate of how many poor are in a country or the proportion of the poor out of the total population. Many countries use this measure as an official poverty measure. The formula used to calculate Head Count Measure is

$$P_0 = \frac{1}{N}\sum_{i=1}^{N} 1(y_i < z) \tag{1}$$

In equation 1, the ith household with income less than poverty line z is taken as a value equal to 1. So P_0 is equal to the total number of household taking value of 1.

In simple form, $$H = \frac{P}{N} \tag{2}$$

Here H is the proportion of the poor in the total population, P is the number of poor and N is the total population.

Poverty gap index (PGI) is another official poverty measure used by many countries. Like Head Count it is also simple to calculate and easy to understand. It tells the depth of the poverty that implies what is the average distance of the poor from the poverty line. The following equation is used to calculate the poverty gap

$$P_1 = \frac{1}{N} + \sum_{i=1}^{N} \frac{G_i}{z} \tag{3}$$

Here G_i is the poverty gap and again Z denotes the poverty line. The poverty gap is divided by poverty line and summed across all the poor households. Then the total is divided by the population, in poverty. Gap indexes P_1. It is the average shortfall between the individual consumption and the poverty line.

The shortcomings of the above measures induced Sen to propose a new poverty measure which is the combination of the incidence and depth of the poverty and inequality of the poor (Sen, 1976). Sen's Index is given by

---

[1] Zheng(1997) list of poverty measures included: head count ratio, income gap ratio, poverty gap ratio, Sen measure, Kakwani measure, Thon measure, Takayama measure, Clark *et al* ethical measure, Blackorby-Donaldson measure, Chakravarty ethical measure, Chakravarty measure, Clark *et al* measure, Foster *et al* measure, Watts measure, Hagenaars measure, Hagenaars-Dalton measure.

$$P_S = P_0 P_1 (1 + G^p) \qquad (4)$$

Here P_0 is the poverty incidence and P_1 is the poverty gap ratio of the poor and G^p is the Gini coefficient of the poor. Gini coefficient takes the value from 0 to 1 i.e. perfect equality to perfect inequality. Sen index is widely accepted in theory but no country uses this as an official measure of poverty because it is not simple and cannot be decomposed into many subgroups (Haughton and Khandker, 2009; Shorrocks, 1995). The Sen Index satisfies the focus, monotonicity and transfer axioms but violates decomposability and subgroup consistency features.

Foster, Greer, and Thorbecke (FGT) (1984) desinged a poverty measure called the Squared Poverty Gap Index (SPGI), which involves the weighted sum of the average shortfall between the individual consumption and the poverty line. This is simply shown to be the squared coefficient of the variant. Foster, Greer, and Thorbecke argue this measure is the combination of HCI, PGI and inequality measure. SPGI measured by the following simple form

$$P_2 = \frac{1}{N} + \sum_{i=1}^{N} \left(\frac{G_i}{z}\right)^2 \qquad (5)$$

This measure is parametric sensitive; we can compare SPGI, HCI and PGI with the value of parameter α. The parameter determines the degree of deprivation of the poor. So equation (5) can be rewritten as follows

$$P_\alpha = \frac{1}{N} + \sum_{i=1}^{N} \left(\frac{G_i}{z}\right)^\alpha \qquad (6)$$

Here α is the sensitivity of the poverty index. Based on the value of α, we can interpret the equation (6). When α=0, the measure found is HCI. When α=1, the measure found is PGI. The SPGI is obtained when α=2. So the larger the value of α the emphasis more on the poorest of poor.

Thon Index is a modified version of Sen's poverty index. Initially with the shortcomings of the Sen's index, Thon(1979) proposed some modifications and this was followed by Shorrocks(1995). Therefore, Xu (2013) calls this the Sen-Sorrocks-Thon (SST) index. SST is a combination of three indices namely, HCI, PGI and Gini coefficient of the poverty gap of the whole population. It can be written as

$$P_{SST} = P_0 P_1 (1 + \hat{G}^P) \qquad (7)$$

The only difference from the Sen Index is that Sen talked about the inequality among the poor only but SST expressed the inequality for the whole population.

Watts index is another measure of poverty, different to the measures which were discussed so far. It is an index sensitive to the distribution of social welfare due to the use of logarithms. Zheng, 1993; and Muller, 1998 say "Watts index is a unique index explaining the absolute amount of social welfare lost due to poverty". Watts index was proposed by Watts in 1968(Watts, 1968) indicated by W and takes the form given below:

$$W = \frac{1}{N}\sum_{i=1}^{q}\{\ln(z) - \ln(y_i)\} \qquad\qquad (8)$$

Poverty measures are used to estimate the prevalence of poverty which can be done by regional or other population characteristics. There are six poverty indices used in this study to describe the poverty level of the recent available surveys of 2009/10 and 2012/13. Head Count Ratio has been taken to interpret the results since it is commonly used and has an intuitive meaning. Estimates of poverty by population characteristics suggest associations between poverty and its correlates. They provide descriptive information and do not establish causal relationships. Different poverty levels can only suggest the possibility that a group of people in a particular category or with a specific characteristic are likely to be poor (Gunawardena et al, 2007). However, this analysis is more useful to make consistent comparisons across time, space, or other categories.

Poverty Profile by Characteristics

National Poverty

According to the head count ratio, the national poverty in Sri Lanka has been declined by 2.2 per cent point from 2009/10 to 2012/13 while other poverty measures also show the same trend. The prolonged conflict in Sri Lanka came to end in 2009 and the steps have been taken towards reconciliation are may contributed the poverty reduction during this period in conflict affected regions and post war economic stability in all over the Island may coincide with the poverty reduction in Sri Lanka during this period.

Figure 1: Change in National Poverty 2009/10 -2012/13
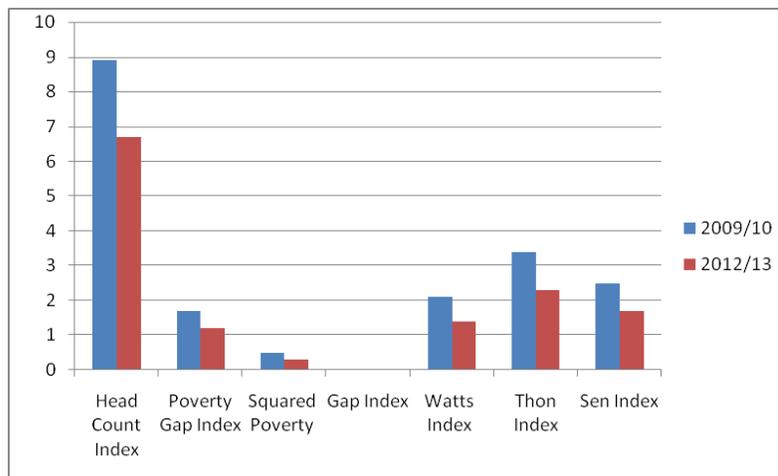
(Source: Author' Calculations from HIES 2009/10 and HIES 2012/13 data)

Sectoral Poverty

All poverty measures indicate decline in poverty in three sectors. In both survey periods, highest poverty prevails in estate sector. The decline in poverty is higher in urban sector which is 3.1 per cent point compare to rural and estate 1.5 and 0.5 per cent point respectively. It seems that there was larger number of poor came out from poverty in urban sector than rural or estate sectors.

Table 1: Change in Poverty by Sector

Poverty measure	Urban		Rural		Estate	
	2010	2013	2010	2013	2010	2013
Head Count Index	5.2	2.1	9.4	7.9	11.4	10.9
Poverty Gap Index	1.2	0.3	1.8	1.4	2.1	1.6
Squared Poverty Gap Index	0.4	0.1	0.5	0.4	0.6	0.4
Watts Index	1.5	0.4	2.2	1.7	2.6	1.9
Thon Index	2.3	0.7	3.5	2.8	4.1	3.1
Sen Index	1.7	0.5	2.6	2.0	3.0	2.3

(Source: Author' calculations from HIES 2009/10 and HIES 2012/13 data)

Regional Poverty

The incidence of consumption poverty varies significantly across provincial boundaries. When compare both surveys, except Uva province, other provinces experienced decline in poverty. In 2009/10, the highest poverty prevalence recorded in Eastern Province whereas in 2012/13 Uva province is the most poorest in Sri Lanka. According to the recent survey, North (10.9 %), East (11%) and Uva (15.4%) provinces are recorded two digits head count ratio. Those regions disadvantaged in terms of economic and social infrastructure tend to exhibit a high incidence of consumption poverty. The Western province is the commercialized region has lowest head count ratio, estimated only 2 per cent of the population under poverty line.

Figure 2: Change in Poverty by Regions
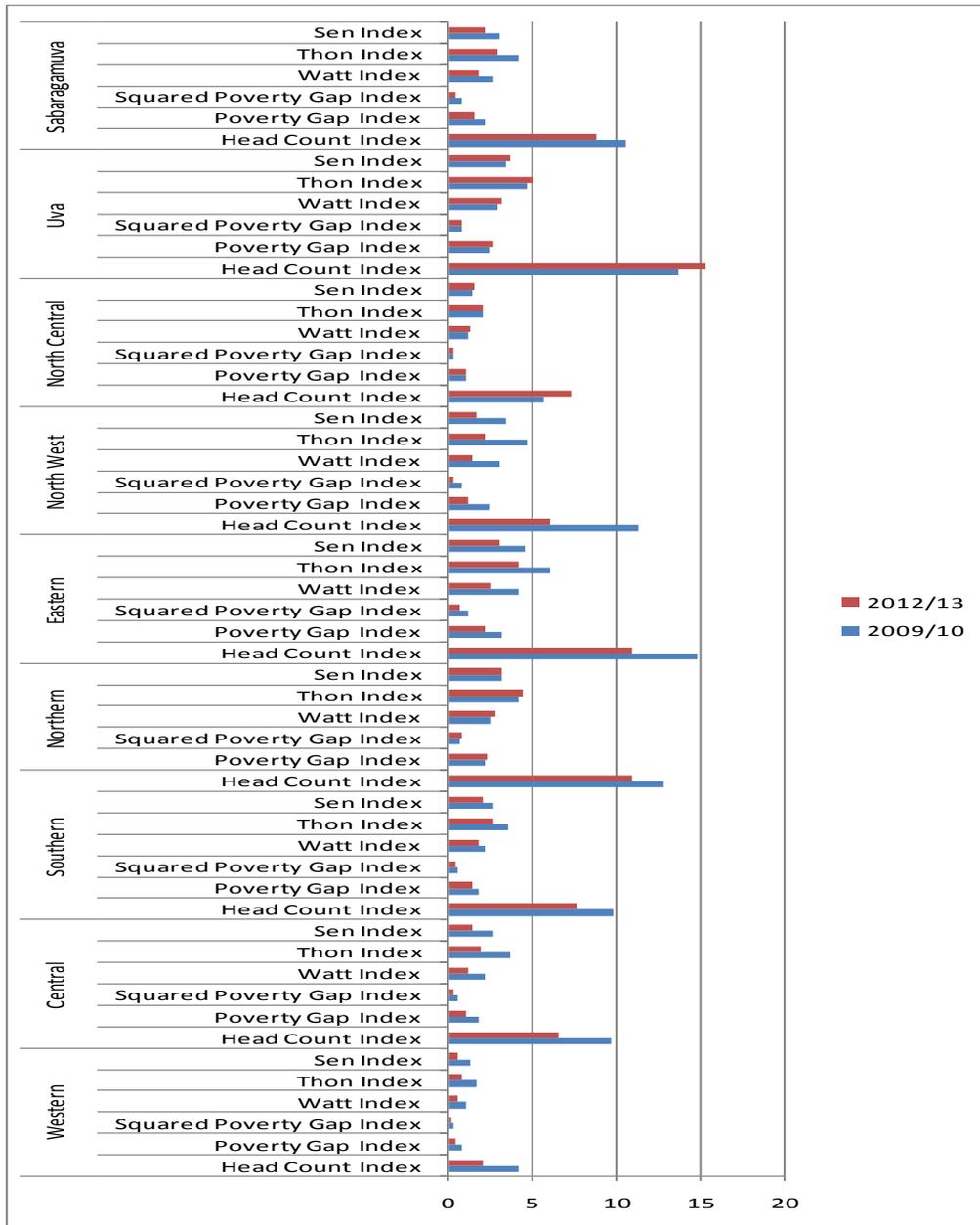
(Source: Author' calculations from HIES 2009/10 and HIES 2012/13 data)

Poverty by Ethnicity

Poverty among different ethnic groups showed a large variation in three districts and two survey periods, which are shown in table 2. Sri Lankan Tamils are the poorest in both surveys while Sinhalese are the least poor. The poverty has been declined among all ethnic groups whereas there was sharp declined among Sri Lankan Moors.

Table 2: Poverty by Ethnicity in 2009/10 and 2012/13

Ethnicity	Poverty measures	2009/2010	2012/2013
Singhalese	Head Count Index	7.6	5.9
	Poverty Gap Index	1.4	1.0
	Squared Poverty Gap Index	0.4	0.3
	Watt Index	1.7	1.2
	Thon Index	2.7	2.0
	Sen Index	2.0	1.4
Sri Lankan Tamil	Head Count Index	13.7	12.0
	Poverty Gap Index	2.9	2.4
	Squared Poverty Gap Index	1.0	0.7
	Watt Index	3.7	2.9
	Thon Index	5.6	4.6
	Sen Index	4.1	3.4
Indian Tamil	Head Count Index	13.1	9.4
	Poverty Gap Index	2.7	1.4
	Squared Poverty Gap Index	0.9	0.4
	Watt Index	3.3	1.7
	Thon Index	5.1	2.8
	Sen Index	3.8	2.1
Sri Lankan Moor	Head Count Index	12.0	6.0
	Poverty Gap Index	2.6	1.0
	Squared Poverty Gap Index	0.9	0.2
	Watt Index	3.2	1.1
	Thon Index	5.0	1.9
	Sen Index	3.7	1.3

(Source: Author' calculations from HIES 2009/10 and HIES 2012/13 data)

Age

Disaggregation of poverty measures by age indicate that there was significant different between poverty rates and age of the individuals. Children and those aged 75 and above are more likely to be poor than the youth and adults. However, even among these groups, the poverty level declined between the two survey years regardless of the poverty indices used.

Table 3: Poverty level by age in 2009/10 and 2012/13

		2009/10	2012/13
Children	Head Count Index	11.8	8.7
	Poverty Gap Index	2.4	1.6
	Squared Poverty Gap Index	0.7	0.5
	Watt Index	3.0	1.9
	Thon Index	4.7	3.1
	Sen Index	3.4	2.3
Youth	Head Count Index	8.7	6.7
	Poverty Gap Index	1.7	1.2
	Squared Poverty Gap Index	0.5	0.3
	Watt Index	2.1	1.4
	Thon Index	3.3	2.3
	Sen Index	2.4	1.7
Adults	Head Count Index	7.8	6.0
	Poverty Gap Index	1.5	1.0
	Squared Poverty Gap Index	0.5	0.3
	Watt Index	1.8	1.2
	Thon Index	2.9	2.0
	Sen Index	2.1	1.5
Old	Head Count Index	6.6	5.0
	Poverty Gap Index	1.1	0.9
	Squared Poverty Gap Index	0.3	0.2
	Watt Index	1.4	1.0
	Thon Index	2.2	1.7
	Sen Index	1.7	1.2
Above 75	Head Count Index	10.3	5.8
	Poverty Gap Index	2.0	0.9
	Squared Poverty Gap Index	0.6	0.2
	Watt Index	2.4	1.0
	Thon Index	3.9	1.8
	Sen Index	2.8	1.3

(Source: Author' calculations from HIES 2009/10 and HIES 2012/13 data)

Gender of the Head of the Household

Figure 3 presents the poverty disaggregated figures of gender of the household head. A large body of the theoretical and empirical literature suggests that poverty is likely to be more prevalent among female- headed households than among male-headed households since men have more human capital and other resources and also better access to livelihood opportunities. However, this study found that male heads are poorer than female heads. This may be because of female heads who are enjoying the women headed benefits of government of Sri Lanka. If women headed occur as a result of the male head migrating for employment; he remits earnings, the family is less likely to be poor. But this should be tested by different hypothesis and will be investigated further.

Figure 3: Poverty level by Gender in 2009/10 and 2012/13
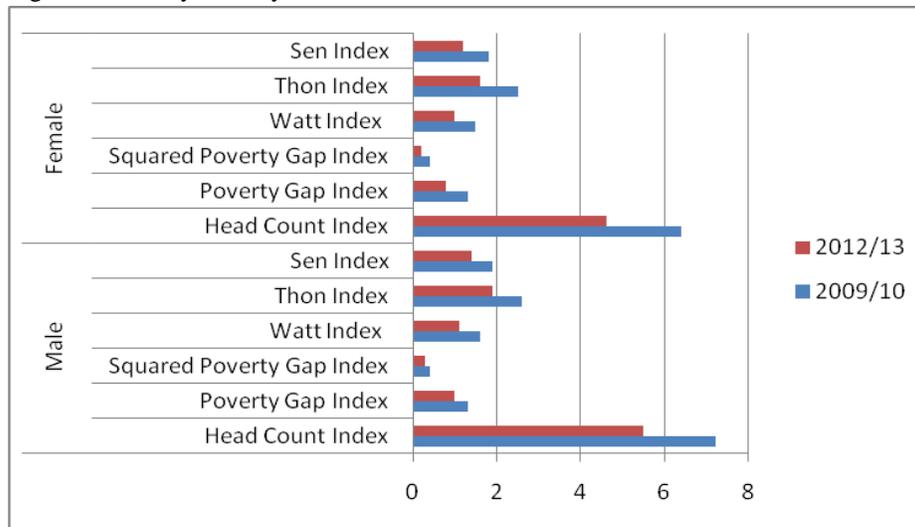
(Source: Author' calculations from HIES 2009/10 and HIES 2012/13 data)

Marital Status

Widows are poorest among other groups regarding two surveys. Mean time, those who are married are poorer than those who are single, including the never-married, divorced and separated, due to higher expenditure for other members of the family like spouse, children and other dependents. Poverty among never married and separated has been increased in 2012/13 while poverty level of married, widowed and divorced has been declined in 2012/13.

Table 4: Poverty Level by Marital Status in 2009/10 and 2012/13

		2009/10	2012/13
Never married	Head Count Index	4.2	5.2
	Poverty Gap Index	0.7	1.1
	Squared Poverty Gap Index	0.2	0.3
	Watt Index	0.8	1.3
	Thon Index	1.4	2.1
	Sen Index	1.0	1.5
Married	Head Count Index	7.1	5.4
	Poverty Gap Index	1.3	0.9
	Squared Poverty Gap Index	0.4	0.3
	Watt Index	1.6	1.1
	Thon Index	2.6	1.8
	Sen Index	1.9	1.3
Widowed	Head Count Index	7.1	4.7
	Poverty Gap Index	1.4	0.8
	Squared Poverty Gap Index	0.4	0.2
	Watt Index	1.8	0.9
	Thon Index	2.8	1.5
	Sen Index	2.0	1.1
Divorced	Head Count Index	3.7	2.0
	Poverty Gap Index	0.7	0.4
	Squared Poverty Gap Index	0.1	0.1
	Watt Index	0.7	0.5
	Thon Index	1.3	0.8
	Sen Index	0.8	0.5
Separated	Head Count Index	6.1	7.4
	Poverty Gap Index	1.3	1.6
	Squared Poverty Gap Index	0.5	0.6
	Watt Index	1.7	2.1
	Thon Index	2.5	3.1
	Sen Index	1.8	2.3

(Source: Author' calculations from HIES 2009/10 and HIES 2012/13 data)

Education of the Head of the Household

Table 5 presents the education level of the head of the household and their poverty level between the periods of 2009/10 and 2012/13.

Table 5: Poverty by Education Level in 2009/10 and 2012/13

		2009/10	2012/13
No Schooling	Head Count Index	18.1	13.5
	Poverty Gap Index	3.6	2.5
	Squared Poverty Gap Index	1.1	0.8
	Watt Index	4.4	3.1
	Thon Index	6.7	4.9
	Sen Index	5.1	3.6
Primary	Head Count Index	12.4	10.1
	Poverty Gap Index	2.4	1.8
	Squared Poverty Gap Index	0.8	0.5
	Watt Index	3.0	2.1
	Thon Index	4.7	3.4
	Sen Index	3.5	2.5
Secondary	Head Count Index	6.2	4.9
	Poverty Gap Index	1.1	0.9
	Squared Poverty Gap Index	0.3	0.2
	Watt Index	1.3	1.0
	Thon Index	2.1	1.7
	Sen Index	1.5	1.2
Ordinary level	Head Count Index	2.0	1.4
	Poverty Gap Index	0.3	0.2
	Squared Poverty Gap Index	0.1	0.1
	Watt Index	0.4	0.3
	Thon Index	0.8	0.5
	Sen Index	0.5	0.3
Advance Level	Head Count Index	1.2	1.3
	Poverty Gap Index	0.1	0.2
	Squared Poverty Gap Index	0.0	0.0
	Watt Index	0.1	0.2
	Thon Index	0.2	0.4
	Sen Index	0.2	0.2

(Source: Author' calculations from HIES 2009/10 and HIES 2012/13 data)

There is a negative relationship between poverty and the education level in Sri Lanka. The poverty incidence was highest among the head of households with no schooling, while head of the households with tertiary have the lowest level of poverty. A similar pattern is observed with both methods and years. It is also notable that the poverty level has declined in all level of education from 2009/10 to 2012/13 regardless of the price index while the level of reduction is higher among households where the head did not have any schooling compared to other groups.

Labour Market Status

According to the Table 6, there is no clear relationship between poverty and labour market status. Because unemployed were more likely to be poor than employed in 2009/10 while in 2012/13 employed were more likely to be poor than unemployed despite of both price indices. This is because of the unemployed are mostly young people who are not poor. However, employment is fundamental to the poverty reduction process as labour earnings are the main source of income for most people, labour being the only asset that poor people own. Hence, whether the household is in poverty or not is largely dependent on the labour earning of its members. Not only earnings, but other employment-related factors such as regularity of employment, opportunities for advancement, training and promotion, health and safety, social security and social protection also determine the wellbeing of the household. In fact, getting a job and starting a business are the two main sources that people have to get out of poverty in low income countries (The World Development Report, 2013). Hence, if the individual has a good or decent job, he or she is unlikely to be poor.

Table 6: Poverty by Labour Market Status in 2009/10 and 2012/13

		2009/2010	2012/2013
Employed	Head Count Index	7.5	6.9
	Poverty Gap Index	1.4	1.3
	Squared Poverty Gap Index	0.4	0.4
	Watt Index	1.7	1.6
	Thon Index	2.7	2.6
	Sen Index	2.0	1.9
Unemployed	Head Count Index	11.6	5.7
	Poverty Gap Index	2.4	1.0
	Squared Poverty Gap Index	0.8	0.3
	Watt Index	2.9	1.2
	Thon Index	4.6	1.9
	Sen Index	3.4	1.4

(Source: Author' calculations from HIES 2009/10 and HIES 2012/13 data)

Employment Status

Table 7 clearly shows that private sector employees are being poorest and the own account workers are being least poor regardless of the year and price index. It is also notable that unpaid family workers are poorest next to private sector employees.

Table 7: Poverty by Employment Status in 2009/10 and 2012/13

		2009/2010	2012/2013
Government Employee	Head Count Index	1.9	1.1
	Poverty Gap Index	0.3	0.1
	Squared Poverty Gap Index	0.1	0.0
	Watt Index	0.3	0.2
	Thon Index	0.5	0.4
	Sen Index	0.4	0.3
Semi-Government Employee	Head Count Index	2.4	2.8
	Poverty Gap Index	0.4	0.5
	Squared Poverty Gap Index	0.1	0.1
	Watt Index	0.4	0.6
	Thon Index	0.7	1.0
	Sen Index	0.6	0.7
Private Employee	Head Count Index	10.3	8.1
	Poverty Gap Index	1.9	1.4
	Squared Poverty Gap Index	0.6	0.4
	Watt Index	2.3	1.7
	Thon Index	3.6	2.8
	Sen Index	2.7	2.0
Employer	Head Count Index	6.5	4.6
	Poverty Gap Index	1.2	0.7
	Squared Poverty Gap Index	0.3	0.2
	Watt Index	1.5	0.9
	Thon Index	2.4	1.5
	Sen Index	1.8	1.1
Own-account Worker	Head Count Index	1.5	0.4
	Poverty Gap Index	0.1	0.0
	Squared Poverty Gap Index	0.0	0.0
	Watt Index	0.1	0.0
	Thon Index	0.3	0.1
	Sen Index	0.2	0.0
Unpaid-Family	Head Count Index	7.9	6.4
	Poverty Gap Index	1.4	0.9

worker	Squared Poverty Gap Index	0.4	0.2
	Watt Index	1.7	1.1
	Thon Index	2.8	1.8
	Sen Index	2.0	1.3

(Source: Author' calculations from HIES 2009/10 and HIES 2012/13 data)

Conclusions

The study explored the change in consumption poverty in post conflict Sri Lanka by analyzing the recent available data of HIES 2009/10 and HIES 2012/13. The national poverty head count ratio has been declined from 8.9 per cent to 6.7 per cent. Except Uva and North Central, all provinces are reporting decreasing poverty level. Whereas greater poverty head count ratio has been reported in selected regions, especially war effected North and East and Uva and Sabaragamuva. Even though, the highest poverty prevailed in Eastern Province during 2009/10, the recent survey reported Uva province is the most poorest. The study also found that Sri Lankan Tamils, children, living single, male headed households, unemployed and less educated are more likely to be poor in both survey periods.

The poverty profile generated here by household characteristics give some idea of key directions for a poverty reduction strategy for Sri Lanka. Therefore, policy planners should view these results as a guide to allocate resources for poverty reduction in a more effective manner. Future studies should incorporate more effective analysis to find out the factors which causes the poverty and its impacts will help policy makers to provide more comprehensive poverty reduction strategies.

References

Atkinston, A. B. (1987). On the Measurement of Poverty. *Econometrica*, 55, 746-764.

Badrudin, R., & Warokka, A.(2012). Poverty Measurement and Choice of Poverty Reduction Strategy: The Importance of Poverty Measurement in Determining the Right Strategy, *Journal of Economics and Behavioral Studies,* 4, 595-602

Chakravarthy, R. (1997), On Shorrocks' reinvestigation of the Sen Poverty index, *Econometrica*, 65(5), 1241-1242.

De Silva, I. (2008). Micro-Level Determinants of poverty rduction in Sri Lanka: a multivariate approach. *International Journal of Social Economics , 35* (3), 140-158.

Foster, J., & Shorrocks, A. (1988). Poverty Orderings. *Econometrica*, 56, 173-177.

Foster, J., & Shorrocks, A. (1991). Subgroup Consistent Poverty Indices. *Econometrica*, 59, 687-709.

Foster, J., Greer, J., & Thorbecke, E.(1984). A Class of Decomposable Poverty Measures, *Econometrica*, 52, 761-766.

Gunawardena, D. Meedeniya, A and Shivakumaran, S. (2007). Absolute and Relative Consumption Poverty in sri Lanka.

Gunewardena, D. (2007). Consumption Poverty in Sri Lanka 1985-2002. Colombo, Sri Lanka: CEPA.

Gunatilaka, R. (2014). Women and Poverty in Sri Lanka . Centre for Women's Research (CENWOR).

Gunatilaka, R. (2010). Sri Lanka's Working poor. International Labour Organization.
Haughton, J., & Khandker, S.R.(2009). A Handbook on Poverty+ Inequality, World Bank Publication.

Kakwani, N. (1980). On Class of Poverty Measures. *Econometrica*, 48, 437-446.

Lakshman, W. D. (1997). Income Distribution and Poverty. In W. D. Lakshman, *Dilemmas of Development* (pp. 171-221). Colombo: Sri Lanka Association of Economics(SLAE).

Morduch, J. Poverty Measures (Chapter 111), available on http//unstats.un.org /unsd/ methods/ poverty/pdf/chapter-3(accessed on 03/05/2013)

Muller, C. (1998). The properties of the Watts' poverty index under log normality, Center for the study of African Economies, Institute of Economics and Statistics, University of Oxford.

Ravallion, M. (1998). Poverty lines in theory and practice, *Living standards measurement study*, Working Paper No. 133, World Bank.

Sen, A. (1976). Poverty: An Ordinal Approach to Measurement. *Econometrica*, 44, 219-31.

Shorrocks, A. F. (1995). Revisiting the Sen Poverty Index. *Econometrica*, 63, 1225-30.

Thon, D. (1979). On measuring poverty. Review of Income and Wealth, 25, 429-439.

Thon. D. (1983). A note on troublesome axiom for poverty indices, *The Economic Journal*, 93, 199-200.

Zheng, B. (1997). Aggregate Poverty Measures. *Journal of Economic Surveys*, 11, 123-162.

Zheng, B. (1993). An axiomatic characterization of the Watts poverty index, *Economics Letters*, 42(1), 81-86.

Watts, H. (1968). An Economic Definition of Poverty, in on Understanding Poverty, ed. by Moynihan D P, New York: Basic Books.

World Bank (2015) Sri Lanka - Ending poverty and promoting shared prosperity: a systematic country   diagnostic.   Available: http://documents.worldbank.org/curated/en/ 714211468189526474/Sri-   Lanka-Ending-poverty-and-promoting-shared-prosperity-a-systematic-country-diagnostic. Accessed on 10.02.2017.