

# An Inquiry into the Regional Disparity in Per Capita Income and Labour Productivity: A Case of Sri Lanka<sup>1</sup>

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## Abstract

This paper examines the time path of regional disparities in per capita income and labour productivity in Sri Lanka during the period of 1996–2004. Regional inequality in per capita income, measured by Coefficient of Variation, first increased from 0.4408 in 1996 to 0.5659 in 2000, and then temporarily declined to the level of 0.4456 in 2002, and again it increased to the level of 0.4489 in 2004. The principal contributors to the regional inequality were the Western Province and its service sector expansion. In addition, labour productivity gap between the service sector and agricultural sector in the Western Province contributed to 57% of the regional inequality in labour productivity. Therefore, it is possible to suggest three types of policy actions to reduce regional income inequality in Sri Lanka. The first is to develop economic linkages between the Western Province and other provinces. The second is to promote labour intensive industries or services to absorb excess labour in agricultural sector. The third is to gradually change institutional systems such as education, taxation, incentives, health, and transportation to address regional disparities. Thus, the central government has to play a major role in reduction of provincial inequality in Sri Lanka.

**Keywords:** Regional Inequality, Labour Productivity, Sectoral Analysis, Provincial Inequality, Sri Lanka

## 1. Introduction

Recently, interest has been growing concerning the problem of regional disparity in Sri Lanka. For example, the Annual Report of the Central Bank of Sri Lanka (CBSL) in 2004, highlighted as “The Western Province reflected higher living standards than other provinces commensurate with better education, employment and income-earning opportunities that related to overall economic activity and development in the country... Historical and continuing disparities in the three sectors urban, rural, estates, were reflected in these regional disparities... The CFS<sup>2</sup> 2003/04 findings re-emphasize what policy makers in successive governments have been highlighting in recent years, namely the need to address these regional disparities and create income generating opportunities that would provide economic options for citizens everywhere” (CBSL, 2004, page 52).

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At present, not only Sri Lanka, but also many of the giants of the developing world including People's Republic of China, India, Brazil, and Indonesia have been facing growing regional disparity as an emerging issue in their development path. On the other hand, academic world too has paid a great deal of attention to this problem and a number of studies have been published, particularly to clarify whether or not regional disparity has been changing and what kind of factors are important in the development path of different countries and regions. However, there is a dearth of studies aiming at finding scientifically facts about the case in Sri Lanka. Thus the purpose of this paper is to explore causes behind the structure and trends of regional disparity in per capita income and labour productivity in Sri Lanka during the past decade using available national income and employment data with suitable decomposable inequality measure.

Sri Lanka is a small island with a population of 20 million (in year 2005) and land size of 65,610 square kilometers. Its per capita Gross National Income (GNI) at market prices is estimated to have been at US\$ 1,010 in 2005. According to the World Bank classification, Sri Lanka belonged to lower-middle income group (GNI per capita US\$ 876-3465 in 2005). Even though country has been facing ongoing civil war in its Northern and Eastern provinces, Sri Lanka's Gross Domestic Product (GDP) grew at a considerable rate (more than 5%) during the past three decades and it has accelerated to 8% in 2005.

However, Sri Lanka's geographical location, civilization pattern, historical development, population structure, and cultural set up indicate pluralistic nature of the society. For instance, total population of Sri Lanka is consisted of four main ethnic groups, namely Sinhalese (71%), Sri Lankan Tamils (12%), Indian Tamils (8%) and Muslims (8%), and it has unevenly distributed among the provinces. Sustainable development of this kind of pluralistic society is essentially dependent on the principle of regional equality to avoid unusual development problems such as political instability, inappropriate labour union actions, ethnic conflicts, religion conflicts, civil wars and many other types of human right violations. Even though economic growth rate is comparable with frontier powers of developing world, the country has been facing various types of unusual development issues due to growing regional inequality trend in the economy. Sustainable peace has become the most crucial need for Sri Lankans since early 1980s. On this line, economic inequality among provinces matter more than the political and ethnic issues for Sri Lanka. Thus, it is important to explore the underlying factors behind the recent trend of regional inequality and its determinants in Sri Lanka.

The unevenness of growth and regional distribution has been a well-researched area in economics literature, but not with respect to Sri Lanka. First, by his seminal paper, Williamson (1965) put forward the hypothesis that regional disparity in a nation should first diverge in the course of economic development, but then, after a turning point, it should converge gradually. He has reached this conclusion by utilizing cross sectional data obtained from various countries and different states of the United States of America. Drawing upon this classic work many researchers attempted to verify

this hypothesis by using longitudinal and cross-sectional data gathered from various countries. However, there is no single conclusion. For example, some researchers like Mera, (1986), Yamamoto (1987), Tabuchi (1988), and Akita (2003) have accepted inverted U hypothesis, although some other studies tend to reject it (Shinohara 1970, Toutain 1981, Mathur 1983). On this line Mutlu (1991) concluded as one of N shape rather than an inverted U shape in contradiction to Williamson for Japan during the period of 1955–1985.

On the other hand, neo-classical thinking on this subject was elaborated by Bortain and Stein (1964) stating that regional disparity should disappear within a shorter period due to the free movement of factors of production among different regions. Seeking higher returns, capital should flow from regions of high per capita income to low per capita income and labour should flow from regions of low per capita income to high per capita income. Negative externalities such as high land prices and increasing utility expenses may divert private investment from urban sector to rural areas.

Furthermore by using experience of East Asian countries, the World Bank publications since 1993, have been continuously emphasizing zero relationship between economic growth and income inequality as well as negative relationship between economic growth and absolute poverty level even in the regional context. According to many of these publications, regional disparity has been reducing in countries like Japan, South Korea, and Taiwan as a result of rapid growth occurred within the past five decades.

Nevertheless, conclusions of all these empirical studies were highly influenced by the type of data used, variables chosen and inequality measures as well as the time period covered. Factors like regional classification structure, regional differences in inflation rate, resource availability, and differences in government actions across the region are also influential on findings or conclusions of a regional distributional analysis. Keeping these various relationships and limitations in mind, this study attempts to explore recent trends and determinants of provincial level inequality in per capita income and labour productivity in Sri Lanka by using provincial level national income data with a decomposable inequality measure called coefficient of variation.

This paper is organized into four main sections including this introductory section. Section 2 is devoted to explain measures used to analyze regional disparity and data used in the paper. An analysis of regional (provincial) differences in per capita income, labour productivity and their determinants in Sri Lanka are presented in Section 3. Section 4 concludes the paper.

## **2. Measures of Regional Disparity in Per Capita Income and Labour Productivity**

There are various measures to analyze regional disparity in the literature. Among them Coefficient of Variation (Williamson 1965), Theil indices T and L (Theil 1967), and the Gini coefficient (Gini 1904) are commonplace. In case of Sri Lanka, Theil indices and the Gini coefficient have been

used to explain inequality by Glewwe (1985 and 1986), Karunaratne (1999 2000, and 2002) and to study regional disparity Karunaratne (2006) used Theil T index. However, in this paper, following Williamson (1965), the time path of regional per capita income differentials was studied using the Weighted Coefficient of Variation ( $CV_w$ ). It measures the dispersion of the regional per capita income levels relative to the national average with each regional deviation weighted by its share in the national total population, that is:

$$CV_w = \left[ \sum_{i=1}^n (Y_i - \bar{Y})^2 (P_i / P_t) \right]^{1/2} / \bar{Y} \quad (1)$$

Where  $CV_w$  = Weighted Coefficient of Variation of regional per capita incomes,  $Y_i$  = per capita income in the  $i$ -th region,  $\bar{Y}$  = per capita national income,  $P_i$  = population of the  $i$ -th region,  $P_t$  is the total population,  $n$  = number of regions.

For administrative purposes, Sri Lanka is divided into 9 regions and they are often called as 9 provinces, namely Western Province, Southern Province, Central Province, Uva Province, Sabaragamuwa Province, Eastern Province, North-western Province, North-central Province, and Northern Province. However, provincial level production and employment data are available only for 1996–2003 period. Therefore, our analysis and discussion are also limited to this period.

Following Akita (2003), within-province inequality in per capita income ( $Y_i$ ) can be decomposed into two components such as labour productivity ratio ( $P_i Y_i / E_i$ ) and labour participation ratio ( $E_i / P_i$ ). Therefore, definition of labour productivity in this paper is also limited to GDP divided by total employment in the particular region or sector. In economic theory, it is commonly known as output per worker. Since productivity of other factors is also included in the GDP, even author also believes this as a very primitive definition for labour productivity. However, it is easy to use for technical illustrations. By using it, economic activities of the each province can be divided into three mutually exclusive sectors such as agriculture, industry and services. It is worth to compare sectoral differences in labour productivity ratios and labour participation ratios across the provinces to understand causes behind the differences in regional per capita income. For this purpose, provincial labour productivity differences were attempted to capture by using again Weighted Coefficient of Variation ( $CV_x$ ) in labour productivity. It was calculated by using provincial level sectoral GDP and employment data. It measures the dispersion of the labour productivity levels relative to the provincial average labour productivity with each sectoral deviation weighted by its share in the total regional employment. It is possible to use the following formula to estimate within province inequality of labour productivity across various sectors such as agriculture, industry and services ( $j = 1, \dots, m$ ) for each region ( $i = 1, \dots, n$ ) and to aggregate it to the national level by using the employment share:

$$CV_{xi} = \left[ \sum_{j=1}^m (X_{ji} - \bar{X}_i)^2 (E_{ji} / E_{it}) \right]^{1/2} / \bar{X}_i \quad (2)$$

$$CV_x = \sum_{i=1}^n CV_{xi} (E_{it} / E_t) \quad (3)$$

where,  $CV_{xi}$  = weighted coefficient of variation of labor productivity across sectors for region  $i$ ,  $X_{ji}$  = labor productivity of sector  $j$  in region  $i$ ,  $X_i$  = average labor productivity in region  $i$ ,  $E_{ji}$  = employment of sector  $j$  in region  $i$ ,  $E_i$  = total employment in region  $i$ ,  $E_t$  = total employment of Sri Lanka,  $CV_x$  = aggregate coefficient of variation of labor productivity for Sri Lanka.

However, GDP and employment data by sector at provincial level in Sri Lanka is available only for year 2003 and 2004. Therefore, by considering the time period of the former analysis, sectoral level analysis in this paper was limited to year 2004.

The entire study was undertaken by obtaining data from the *Quarterly Labour Force Surveys and Annual Labour Force Surveys* conducted by the Department of Census and Statistics of Sri Lanka, and data given in the *Economic and Social Statistics of Sri Lanka 2005* published by the CBSL.

### 3. Analysis and Discussion

Nature of regional inequality in Sri Lanka can be illustrated by using the information given in Table 1. It summarizes regional and sectoral shares of Gross Domestic Product (GDP) and total employment in Sri Lanka in 2004. Even though Western province represented 29 percent of the total employment of Sri Lanka, its GDP share was 50 percent. On the other hand, 71 percent of total employment belonged to 8 provinces other than the Western province and total share of those provinces in GDP was 50 percent. Apart from the Western Province, all other provinces recorded lower GDP shares in comparison to their shares in the total employment. This indicates the substantial regional gap in production and employment between the Western Province and other provinces in Sri Lanka.

Information shown in Table 1 can also be used to explain sectoral level inequality in Sri Lanka. Agricultural sector's contribution to the total employment was 33 percent, but its GDP share was 19 percent. On the other hand, service sector contribution to total employment was 42 percent and its GDP share was 55 percent. This means service sector employees were better-off while agricultural sector workers losing their resources. In other words, as dualistic labour migration models such as Arthur Lewis, and Ranis and Fei emphasized, surplus labour in Sri Lanka is still attached to the agricultural sector. Manufacturing sector has been showing marginal improvement in Sri Lanka during the past five decades. This was due to main structural changes occurred within the manufacturing sector after introduction of the trade liberalization in 1977. Manufacturing industries were mainly consisted of state-owned firms created under the import substitution policies until 1977. Many domestic oriented state-owned manufacturing firms were running at a loss or closed down since 1977. As a result, by now, more than 100 state-owned firms have been privatized in Sri Lanka. After privatization many of those firms reduced the number of employees and increased the output prices. However, private sector-owned export oriented manufacturing firms (mainly garment firms) have

**Table 1 Regional and Sectoral Shares of GDP and Employment in Sri Lanka, 2004**

% Share of Gross Domestic Production				
Province	Agriculture	Industry	Services	GDP
1. Western	1.68	16.00	32.02	49.70
2. Southern	3.47	1.67	4.16	9.30
3. Sabaragamuwa	1.73	1.81	2.61	6.14
4. Central	2.83	1.54	4.45	8.82
5. Uva	2.17	0.60	1.66	4.42
6. Eastern	2.25	1.30	1.94	5.48
7. North Western	2.47	3.00	4.00	9.47
8. North Central	1.66	0.33	1.96	3.94
9. Northern	0.78	0.18	1.75	2.72
10. Sri Lanka	19.03	26.41	54.56	100.00
% Share of Employment				
Province	Agriculture	Industry	Services	Total
1. Western	2.41	9.88	16.67	28.97
2. Southern	5.27	3.02	4.89	13.18
3. Sabaragamuwa	4.43	2.53	3.93	10.89
4. Central	5.62	2.10	4.67	12.39
5. Uva	5.65	0.94	1.75	8.34
6. Eastern	2.38	1.06	2.90	6.35
7. North Western	3.95	3.83	5.51	13.29
8. North Central	3.61	0.93	2.04	6.58
9. Northern	1.24	0.59	1.46	3.29
10. Sri Lanka	33.33	24.30	42.37	100.00

Source: Author's computations based on,

- (i). Central Bank of Sri Lanka (2005) Economic and Social Statistics of Sri Lanka.
- (ii). Department of Census and Statistics (2005) Annual Report on Labour Force Survey.

been performing well in terms of employment generation and foreign currency earnings since trade liberalization (Athukorala, 2004). Due to this structural change occurred within the manufacturing sector, overall performance of it has not been attractive in comparison to services sector during the concerning period. After introduction of trade liberalization policies in Sri Lanka in 1977, services sector became the dynamic sector, and it had expanded to current position by positively contributing to inequality augmented growth occurred at national and regional level. The service sector contributed more than 70 percent of economic growth during the recent past.

Regional and sectoral shares of GDP and total employment have quite naturally distributed in Sri Lanka. However, two special relationships can be identified by using data given in the Table 1. The first one was associated with the Western Province agricultural share in GDP and its share in the total employment. In the Western Province, agricultural sector employment was 2.4 per cent from the total employment in Sri Lanka, but its share in GDP was 1.7 percent of the whole island GDP. This means even in the most developed province of Sri Lanka, agricultural employees were not better-off. Usually in developed countries, urban agriculture is more capital or knowledge intensive and uses less labour than the agriculture in rural areas. Therefore, productivity improvement projects should be implemented even within the Western Province (urban agriculture) in Sri Lanka to reduce sectoral inequalities.

The second special character was associated with the Western Province in relation to its service sector share in the GDP and total employment. The Western Province service sector share in GDP was 32 percent and employment share was 17 percent. Among the various services, wholesale and retail trade, transportation and communication, banking and insurance, real estate, hotel and storage were expanded in the western province since 1977. Many of these services were highly capital and knowledge intensive and generated limited number of employment opportunities in comparison to agriculture or garment industry. As a result inequality within the Western Province, as well as among the provinces have also been substantially increased during the past few years.

Figure 1 illustrates the provincial disparities in sectoral GDP and employment shares. Unlike the values given in the Table 1, statistics in Figure 1 were calculated by considering within province share as in the total GDP and total employment. Service sector share in Northern Province was high due to high government services in the form of defense activities in the province. The largest share of government troops has been deployed in the Northern Province due to civil war since early 1980s. As a result, public administration and defense activities were important in Northern Province than the other provinces. It can be considered as a temporary phenomenon. However, it is important to understand regional differences in sectors by looking at Figure 1.

Figure 2 illustrates the behavior of labour productivity ratio by industry in Sri Lanka during 1990–2005. It is worth to remember that values given in Figure 2 are in nominal terms. However, since there was no substantial annual difference in inflation rate during the concerning period, it is also possible to predict growing trend of labour productivity in real terms during the concerning period. Nevertheless sectoral differences in labour productivity is clearly expanded during the recent past. As shown in Figure 2, labor productivity associated with agricultural sector has been low in comparison to manufacturing and service sectors during the period. This was due to larger share in the total employment and smaller share in GDP in agriculture. Therefore, in order to eliminate labour productivity gaps among different economic sectors, it is essential to shift employees or employers from agriculture to manufacturing or services sector in Sri Lanka. Since majority of farmers have been

Figure 1 Sectoral Shares of GDP and Employment at Provincial Level in Sri Lanka, 2004

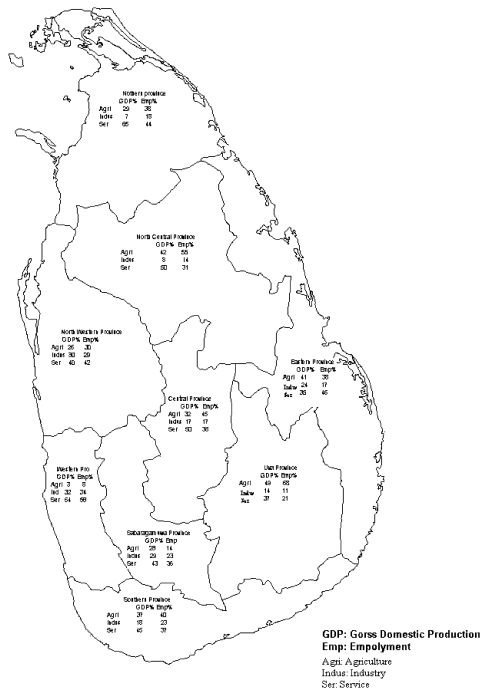
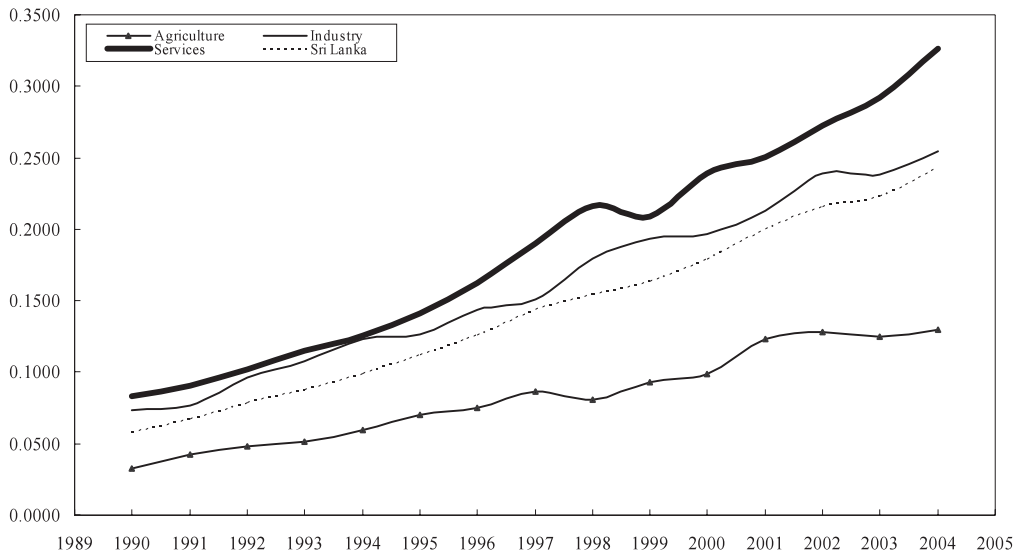


Figure 2 Labour Productivity Ratios by Industry in Sri Lanka, 1990–2004



Source: Author's Computations Based on (i) CBSL (2005) & DCSSL (2004)



facing problems such as low fertility of land due to long-term cultivations, increasing fertilizer prices, difficulty of selling output, lower prices for their products, and rural credit problems, the most desirable alternative is to increase value addition of their products by themselves starting entrepreneurial activities. Especially, rice farming in Sri Lanka has come to the level of self-sufficiency and it is essential to start rice-based industrial products as soon as possible to keep growing trend in rice production. For this purpose they need the necessary support from the government, non-governmental and private institutions.

Since GDP growth rate was considerably higher than the growth in employment during the past decade, the labour productivity ratio (output per worker) has shown substantial growth. Average annual GDP growth rate was more than 5 per cent but average annual growth in employment was around 2.8 per cent for Sri Lanka during period of 1996–2004. This was mainly due to rapid expansion in services sector especially in the Western Province.

The time path of the regional per capita income differentials can be illustrated with the help of empirical results given in Table 2. As depicted in estimations given in column 2 of the Table 2, regional inequality in Sri Lanka, measured by the coefficient of variation, has increased from 1996 to 2000 and after sudden decline until 2002, it has again indicated the increasing trend in 2003. However, year 2001 was not a normal year for Sri Lankan economy. It was the year which recorded negative GDP growth since gaining political independence in 1948. There were two major reasons for the negative GDP growth in that year. First was the sudden increase in terrorism activities. There was a terrorist attack on Colombo International Airport and as a result many international transportation firms implemented surcharge on sea and air transportation to and from Sri Lanka. It badly affected raw material imports and final output export of the garment industry. Majority of the garment factories were located in the Western Province and some factories even had not paid salaries for workers during this period. Second reason was the sever drought occurred in Southern Province. Especially, Hambantota District's agricultural production went into almost zero level in year 2001. Apart from that there was a considerable amount of resource transfer from foreign countries, government, private sector and individuals in other provinces to Hambantota District during this year. As a result of above-mentioned two reasons, inequality in the regional per capita income declined in 2001 and 2002. Therefore, this phenomenon cannot be accepted as a permanent solution to regional inequality gap in Sri Lanka. As shown in the empirical findings given in the third column of the Table 2, the regional inequality trend in the per capita income has been similar even if war-affected provinces (Northern and Eastern province) are excluded from the data set. However, when data from the Western Province are excluded, regional inequality in per capita income has been declining during the entire period. This means that the Western Province was the principal contributor to the regional per capita income disparity in Sri Lanka during the concerning period. Apart from the Western province other provinces indicate somewhat normal pattern of regional inequality in comparison to their population,

**Table 2 Weighted Coefficient of Variation (CVw) of Regional Per capita Income Levels, 1996–2003**

Year	Sri Lanka	Without Northern and Eastern Provinces	Without Western Province
	(For 9 Provinces)	(For 7 Provinces)	(For 8 Provinces)
1996	0.4408	0.3780	0.2378
1997	0.4520	0.3996	0.2357
1998	0.4709	0.4303	0.2295
1999	0.5414	0.4944	0.2032
2000	0.5659	0.5071	0.2313
2001	0.4474	0.4140	0.1750
2002	0.4456	0.4113	0.1541
2003	0.4779	0.4547	0.1322
2004	0.4789	0.4557	0.1285

Source: Author's computations based on,

- (i). Central Bank of Sri Lanka (2005) Economic and Social Statistics of Sri Lanka.
- (ii). Department of Census and Statistics (2005) Annual Report on Labour Force Survey.

employment and income shares. Furthermore, the Western Province's influence on regional disparity in per capita income was much greater in the 2003 than the earlier years, as indicated by the difference in the coefficients for the Sri Lanka without Western Province (column 2 minus column 4 in Table 2).

Since it is possible to identify Western Province as the main contributor to the inequality in per capita income, attempts were not made to decompose regional inequality in Sri Lanka into within-region and between-region components in this paper. [However, if the readership is interested in seeing that type of decomposition, then see Karunaratne (2006)]. Instead of that, as explained in the methodology section, following Akita (2003), within-province inequality in per capita income ( $Y_i$ ) can be decomposed into two components as labour productivity ratio ( $P_i Y_i / E_i$ ) and Labour participation ratio ( $E_i / P_i$ ). Usually, labour productivity in each province is different across the sectors such as agriculture, industry, and services. Inequality in sectoral labour productivity can be decomposed into two components as within-province coefficient of variation and provincial share of the total employment. This type of decomposition is undertaken and results are presented in the Table 3.

Inequality in the sectoral labour productivity in Sri Lanka as measured by the coefficient of variation was 0.2678 in 2003. It is decomposed into two components as within-province component and contribution made by employment share to the total inequality. As indicated by the estimations given in column 2 in the Table 3, the highest inequality in the sectoral labour productivity was recorded again in the Western Province. The coefficient of variation of sectoral labour productivity in the

**Table 3 Decomposition of Inequality in Sectoral Labour Productivity\* by Province in Sri Lanka, 2004**

Province	Within Province Coefficient of Variation	Share of Total Employment	Contribution to Coefficient of Variation	Percentage Contribution to Total inequality
1. Western	0.5314	0.2897	0.1540	57.5
2. Southern	0.1837	0.1318	0.0242	9.0
3. Sabaragamuwa	0.1064	0.1089	0.0116	4.3
4. Central	0.1892	0.1239	0.0234	8.8
5. Uva	0.1854	0.0834	0.0155	5.8
6. Eastern	0.0760	0.0635	0.0048	1.8
7. North Western	0.1161	0.1329	0.0154	5.8
8. North Central	0.1919	0.0658	0.0126	4.7
9. Northern	0.1895	0.0329	0.0062	2.3
10. Sri Lanka	0.2678	1.0000	0.2678	100.0

\*Agriculture, industry, and service are the sectors of concern here.

Source: Authors calculation based on data available in CBSL (2005).

Western Province was 0.5314 and it was almost 7 times higher than the sectoral labour productivity differences in the lowest region (Eastern province). That coefficient value for the Western Province was considerably high not only in comparison to other provinces but also in comparison to the national level. In other words, within the Western Province output per worker is significantly different across the agriculture, manufacturing and service sectors. That has contributed to substantial portion of the inequality in the per capita income among sectors and regions in Sri Lanka. This situation has become worse due to record of highest employment share in the Western Province (as indicated by the estimations given in column 3 in Table 3). Finally, decomposition of inequality in the sectoral labour productivity by province in this paper leads to identify high Western Province share in the total inequality as 57.5 percent. Therefore, any inequality reduction policy in Sri Lanka should be focused on the Western Province. Even though per capita income of the Western Province has grown at a significant rate in comparison to other provinces in-migration to that province was very negligible amount. The western province population share has been remaining at 28 per cent during the past five decades. This is a contradicting phenomenon in comparison to theoretical and empirical explanations of Harris-Todaro (1974) model and its later developments, polarization theories and practical examples of the countries (for example, when regional share of real per capita income of Tokyo, Nagoya and Osaka regions together in Japan increased from 43.6 percent in 1955 to 54.3 in 1990, population share associated with these growth poles increased from 17.1 percent to 25.7 percent due to industrialization and employment creation in manufacturing sector).

This is because economists believe that usually labour migrates from low income regions to high

income regions to find better employment opportunities or better living standards. This was not true for Sri Lanka due to employment-lack service sector (mainly domestic market oriented wholesale, retail trade, communication, transportation, banking and insurance sub items) expansion in the Western Province after the introduction of trade liberalization policies in 1997. On the other hand urban unemployment is neutral in a small country where highly government subsidized low cost transportation facilities are available. Therefore, people in the Western Province (more specifically employees in service sector of the Western Province) enjoy higher per capita income than the other provinces in Sri Lanka. This was the crucial determinant of the growing inequality in the per capita income and labour productivity in Sri Lanka during the recent past. Some of the possible solutions for this problem are to promote more export-led manufacturing industries instead of services in any region to work as growth poles or to promote exportable services in other provinces like tourism, education (there are many students in Maldives willing to come for university education in Sri Lanka for low cost, but practically the other way happens due to rigidities in the education system in Sri Lanka), health, skilled labour and knowledge based industries. The roots of regional inequality in Sri Lanka has coming from problems in institutional systems such as education system, tax system, incentive system, health system, transportation system. Therefore, the role of government in terms of reforming institutional system, planning and implementation is bigger in reduction of regional inequality in Sri Lanka.

#### **4. Concluding Remarks**

The main objective of this paper was to analyze disparities in per capita regional incomes and sectoral labour productivity to understand trends in and determinants of regional inequality in Sri Lanka during the recent past. Apart from regional GDP and employment shares, sectoral GDP and employment shares in different regions were used to elaborate on determinants. The coefficient of variation was used as a measure of dispersion in regional per capita income and sectoral employment. The share of the Western Province in total regional inequality was the highest and it was growing during the past decade in Sri Lanka. On the other hand, inequality among sectoral (agriculture, industry and services) labour productivity was highest in the Western Province. Therefore, the problem of regional inequality in Sri Lanka can be divided into two sub-problems; (i) problem between the Western Province and other provinces, and (ii) problem between the service sector and agricultural sector mainly within the Western Province. In other words, per capita income of Western Province is substantially higher than that of the other provinces and labour productivity in agriculture, manufacturing and service sector indicated divergent values. The highest labour productivity is recorded in service sector in the Western Province. Relatively a less number of people is employed in wholesale, retail trade, banking and insurance, transportation and communication industries and they

are receiving substantially higher sources of income. On the other hand, per capita income of the employees or employers associated with agriculture in the Western Province was very low, indicating surplus labour situation even within that province.

Even though per capita income of the Western Province was substantially high and growing rapidly in comparison to other provinces, in-migration was very low due to the nature of employment lack growth in the service sector. On the other hand, urban unemployment is neutral in a small country where highly government subsidized low cost transportation facilities are available. This has led to aggravate regional disparity problem in Sri Lanka. People in the Western Province enjoy substantially higher living standards than people in other provinces. This is not reflected only by per capita income level or labour productivity level, but by many other dimensions also.

Based on findings of this paper, it is possible to suggest three types of policy actions to reduce regional income inequality in Sri Lanka. The first is to develop economic linkages between the Western Province and other provinces. For instance, promoting domestic tourism from the Western Province to other provinces may reduce regional inequality in Sri Lanka. The second is to promote labour intensive industries or services to absorb excess labour in agricultural sector in Sri Lanka. The third is to gradually changing institutional systems such as education, taxation, incentives, health, and transportation to address regional disparities. Therefore, the government is required to play an important role in reduction of regional inequality in Sri Lanka.

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## Notes

- 1 The author would like to thank Professor Mitsuo Ezaki, and two anonymous referees for their valuable comments on the earlier draft of this paper. The usual caveat, however, applies. Further he would like to express his sincere gratitude to Professor Hideki Esho, Dean, Faculty of Economics, Hosei University, Japan for inviting him to take up a visiting professorship and providing facilities to undertake this study.
- 2 Consumer Finances and Socio-economic Survey conducted by the Central Bank of Sri Lanka. The most recent survey was conducted in 2003/2004.

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## References

- Akita, T. 2003. Regional Income Inequality in the Postwar Japan. *Papers of the 43<sup>rd</sup> Congress of the European Regional Science Association*. Jyväskylä, Finland, August 27–30.
- Athukorala, P. 2004. Complementarity of Trade and FDI Liberalization in Industrial growth: Lessons from Sri Lanka. *A Paper Presented in the 10 years of ASARC an International Conference*. Institute of Economics and Business, Australian National University, April 2004.
- Athukorala, P. & S. Jayasooriya. 2000. Liberalization and Industrial Transformation: Lessons from the Sri Lankan Experience. *Economic Development and Cultural Change*. 48, 543–572.
- Borts, G. H. and J. L. Stein. 1964. *Economic Growth in a Free Market*. Columbia University Press, New York.
- Bourguignon, F. 1979. Decomposable Income Inequality Measurements. *Econometrica*. 47 (4): 901–920.
- Central Bank of Sri Lanka. 2004. *Annual Report*. Colombo, Sri Lanka.

- Central Bank of Sri Lanka. 2005. *The Consumer Finances and Socio-economic Survey Report 2002/04*, Part I & II. Colombo, Sri Lanka.
- Central Bank of Sri Lanka. 2005. *Economic and Social Statistics of Sri Lanka 2005*. Colombo, Sri Lanka.
- Department of Census and Statistics. various years. *Labour Force Survey 1992–2005*. Colombo, Sri Lanka.
- Ezaki, M. 1995. Growth and Structural Changes in Asian Countries. *Asian Economic Journal*. Vol. 9, No. 2: 113–136.
- Glewwe, P. 1985. *An Analysis of Income Distribution and Labour Market in Sri Lanka*. Unpublished PhD. Dissertation, Stanford University, USA.
- Glewwe, P. 1986. The Distribution of Income in Sri Lanka in 1969 – 1970 and 1980 – 81: A Decomposition Analysis.” *Journal of Development Economics* 24, No. 4: 255–74.
- Kalirajan K, T. Akita. 2002. Institutions and interregional inequalities in India: finding a link using Hayami’s thesis and convergence hypothesis. *The Indian Economic Journal*. 49 (4): 47–59.
- Karunaratne, H. D. 1999. Sectoral Diversity of Income Inequality in Sri Lanka: A Disaggregated Analysis by Factor Incomes. *Regional Development Studies* 5: 1–26. Annual Journal of the United Nations Center for Regional Development (UNCRD), Japan.
- Karunaratne, H. D. 2000a. *Income Inequality in Sri Lanka, 1953–1997: Structure, Trends and Factors*. Unpublished Ph. D. Dissertation, Graduate School of International Development, Nagoya University, Japan.
- Karunaratne, H. D. 2000b. Income Inequality among Sub-groups of Population at the Sectoral Level in Sri Lanka, 1963–1997: A Decomposition Analysis. *Forum of International Development Studies*. 16, Graduate School of International Development, Nagoya University, Japan.
- Karunaratne, H. D. 2000c. Income Distribution in Rural Sri Lanka, 1963 – 1997. *The Economic Science*. Vol. 8, No. 3, Graduate School of Economics, Nagoya University, Japan.
- Karunaratne, H. D. 2000d. Age as a Factor Determining Income Inequality in Sri Lanka. *The Developing Economies*. Vol. XXXVII, No. 2. 211–42.
- Karunaratne, H. D. 2001. An Analysis of Long-term Income Inequality Trends in Sri Lanka. *Sri Lanka Economic Journal*. The of the Sri Lanka Economic Association, Vol. 1 (2) New Series.
- Karunaratne, H. D. 2002. Gender Specific Employment Creation and Male-Female Income Disparity in Sri Lanka. *A paper presented at the First Annual Research Conference of the Faculty of Management & Finance*. University of Colombo, August 30, 2002.
- Karunaratne, H. D. 2002/2003. Globalization, Service Sector Expansion and Income Inequality in Sri Lanka. *Sri Lanka Journal of Social Sciences*. Vol, 32, 2003/2004.
- Karunaratne, H. D. 2006. Managing Regional Income Inequality in Sri Lanka: Lessons from Japanese Experience. *Paper Presented in the International Research Conference on “Management for Growth and Development”(IRCMGD) September 14–15, 2006*, held in Sri Lanka Foundation Institute, and organized by the Faculty of Management & Finance, University of Colombo, Sri Lanka.
- Kuznets, S. 1955. Economic Growth and Income Inequality, *American Economic Review*. 49: 1–28.
- Lakshman, W. D. 1997. Income Distribution and Poverty, in *Dilemmas of Development: Fifty Years of Economic Change in Sri Lanka*, ed. W. D. Lakshman. Colombo: Sri Lanka Association of Economists.
- Mathur, A. 1983. Regional Development and Income Disparities in India: A Sectoral Analysis. *Economic Development and Cultural Change*. Vol 31, No. 3.
- Mera, K. 1986. Population Stabilization and National Policy of Public Investment, The Japanese Experience. *International Regional Science Review*. Vol. 10, No. 1: 47–65.
- Mizoguchi, T. 1985. Economic Development Policy and Income Distribution: The Experience in East and Southeast Asia. *The Developing Economies* Vol 33, No. 4: 307–24.
- Mutlu, S. 1991. Regional Disparities, Industry and Government Policy in Japan. *Development and Change*. 22: 547 – 586.
- Nishioka, H. 1962. Interregional Economic Difference within Japan. *Aoyama Keizai Ronshu (The Aoyama Journal of Economics)*. Vo. 13. (4): 37–57.
- Sala-i-Martin XX. 1996. Regional Cohesion: Evidence and Theories of Regional Growth and Convergence. *European*

- Economic Review*. 40: 1325–1352.
- Tabuchi. 1988. Interregional Income Differentials and Migration: their interrelationships. *Regional Studies*. 22 (1): 1 – 10.
- Theil, H. 1967. *Economic and Information Theory*. North-Holland, Amsterdam.
- Toutain, J. C. 1981. The Uneven Growth of regional Incomes in France from 1840 to 1970, in P. Bairoch and M. L. Leboyer (des). *Disparities in Economic Development since the Industrial Revolution*. pp. 302 – 16, St. Martin's Press New York.
- Shinohara, M. 1970. *Structural Changes in Japan's Economic Development*. Tokyo: Kinokuniya Bookstore Co.
- Vestel, J. 1994. *Planning for Change; Industrial Policy and Japanese Economic Development 1945–1990*. Clarendon Press, Oxford.
- Williamson, J. G. 1965. Regional Inequality and the Process of National Development: a Description of Pattern. *Economic Development and Cultural Change*. 13, 4: 3–45.
- Yamano, N. & T. Ohakawara. 2000. The Regional Allocation of Public Investment: Efficiency or Equity? *Journal of Regional Science*. 40, 2: 205–229.
- Yamamoto, K. 1987. Regional Disparity and Its Development in Postwar Japan. *Journal of International Economic Studies*. No. 2, The Institute of Comparative Economic Studies, Hosei University, Tokyo, Japan.