Beyond the Millennium Development Goals: Regionally Inclusive Economic Growth for Lasting Peace and Prosperity in Sri Lanka

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Abstract

Similar to many other developing countries, Sri Lanka has agreed to streamline its development process in order to achieve the eight millennium development goals (MDGs) by 2015. Even though the country is well on its way in achieving a number of MDG targets at the national level, it has to think beyond these goals in overcoming the long lasting regional economic disparities. While economic disparities are leading to civil conflicts, such conflicts are in turn leading to widening disparities and slow economic growth. Clear understanding about regional economic disparities and their dynamics over the time is crucial in designing effective development strategies for the country. The objective of this paper is to provide a better understanding of the magnitude, nature and dynamics of regional economic disparities in Sri Lanka. It starts with a brief overview of some related theories and previous empirical studies. As analytical results focussing on per capita gross domestic product (GDP) data reveal, there is a considerable inequality among Sri Lankan provinces. Though the provinces are diverging in terms of per capita GDP during the period 1996 to 2000, they are actually showing evidence of converging (with a fluctuating pattern) from the point of 2000 onwards. This data shows that whilst individual provinces behave differently, the gap between the richest and poorest regions has reduced significantly over time. However, even if the country can maintain its current trend of convergence linearly, it requires another 15 years to halve the current level of disparity and about 30 years to achieve a regionally balanced economy. Since achievement of convergence among regions will not occur automatically or in a timely manner, the country needs well planned policy options aimed at promoting regionally inclusive economic development that can lead it to a prosperous country with lasting peace.

Key words: Economic disparity, regions, inequality, convergence, divergence

JEL Codes: O2, O53, R11, R12, R58
1. Introduction

At the dawn of the third millennia Sri Lanka agreed to streamline its development activities aimed at achieving the agreed millennium development goals by the end of 2015. Even though the country is on track of for achieving these goals as a nation, it has to think beyond towards accelerating its economic development which had been hampered for long time mainly because of the three decades long civil conflict. Further, the country also has a challenge in framing its development strategy so that an equitable share of the benefits of economic growth is accessible to all regions and communities.

Regionally imbalanced economic growth and regional disparities in the level of well-being is widely discussed in literature, and this socially unfavourable condition is evident in both developing and developed countries (Smith 2007). As many authors have highlighted, economic disparities are leading to social unrests and civil conflicts, and these conflicts are in turn contributing to the further widening of those disparities (e.g. Sen, 1997; World Bank, 2011; Wright, 2009; Xuan-Binh, Duc-Tho, Smith, & Hong-Son 2012). In its recent history, Sri Lanka experienced youth insurrections in the South and nearly three decades of civil armed conflict in the Northern and Eastern parts of the country. The catchy slogan “Kolambata Kiri Gmata Kekeri” (Villagers have only low value cucumber, while people in Colombo enjoy the cream!) used by the revolutionary youth movement uprising in the late 1980s provides a good example of civic unrest aroused with regional inequality (Government of Sri Lanka, 1990; Hasbullah & Morrison, 2004; Karnik, 2002; Yeung & Lin, 2003). Even though the armed struggle of Liberation Tigers of Tamil Eelam (LTTE), or commonly known as the Tamil Tigers, for a separate state in Northern and Eastern parts of Sri Lanka is widely interpreted as a terrorism problem, regional economic disparities that prevent the access to opportunities generated with the economic development and globalization is often acknowledged to be a major cause of it (Abeyratne, 2004; Arunathilake, Jayasooriya, & Kelegama, 2001; Dhananjayan, 2005; Grobar & Gnanaselvam, 1993).

As many scholars have argued, Sri Lanka was unable to capitalize on most of the opportunities it had in flourishing its economy as an independent nation due to both the impacts of civil conflicts and the shortcomings in the development policies that it adopted (Kelegama, 2000; Snodgrass, 1998). After ending a long lasted destructive armed conflict in 2009, Sri Lanka has gained another chance to rethink about its lost opportunities and to streamline its policies and institutions so that it can well capitalize on its current development potentials. To ensure the longevity of the developments, the process of development has to address two basic questions; (1) How to escape from slow growth and (2) How to reduce regional inequality. Clear understanding about the current level of economic disparities and the dynamics of those disparities during the past and the impact on them of different policy regimes is of key importance in developing a regionally inclusive development strategy. Related
economic theories and insights from global experiences can also play a vital role in identifying the most suitable development policies for the country in its current context (World Bank, 2010).

The objective of this paper is to conduct a systematic analysis of these disparities with available scattered data. It also undertakes a brief review of related theories and global experiences in analysing and mitigating regional disparities. On the basis of a systematic analysis of regional disparities, the paper suggests some potential policy options that Sri Lanka could adopt in vitalizing its process of development for vibrant growth coupled with enhanced regional convergence.

The next section of the paper provides a brief overview of the structure and current situation of Sri Lankan regions (provinces). Section three comprises a summary of related economic theories and global experience. It also reports on past attempts to analyse regional development disparities in Sri Lanka. The fourth section provides a comprehensive analysis of regional economic disparities of the country over the last 16 years. The final section presents some concluding remarks and discusses some relevant policy implications. Further, it also highlights some limitations of the current study.

2. Sri Lankan Regions: Stylized Facts

Sri Lanka is a small island in the Indian Ocean, located at the south east of the Southern tip of the Indian sub-continent. It had its own ruling system with a Monarchy for over two millennia up until it become a colony of European interests in the second half of the 20th century. Coastal parts of the country were under the control of Portuguese and Dutch empires from 1505 to 1796; however the British took control over these coastal parts from the Dutch in 1796 and ruled until 1815. The whole country was then a colony of the Great Britain from 1815 to 1948. After attaining independence in 1948, Sri Lanka practiced a parliamentary democracy that it learned from the British. During the British period, the country was geographically divided into 9 provinces (See Figure 1). For three decades after independence, Sri Lanka had a centralized unitary government with closed economic policies. The right-of-centre government led by the United National Party (UNP), which came to power in 1977, opened the economy by introducing a trade liberalisation package and undertaking other structural reforms including privatisation. In 1978, the newly elected government also introduced a new constitution making considerable changes to the administrative system. As a response to growing ethnic unrest in the Northern and Eastern provinces, the 13th amendment to the 1978 constitution was made to establish provincial council as a second layer of government (Government of Sri Lanka, 1987; Marasinghe, 2007).

With the introduction of the provincial council system, the planning and administrative activities of Sri Lanka were decentralized to a certain extent. Due to variations in the natural conditions, resources endowment and socio cultural settings,
the production systems and economic conditions also vary across the provinces. According to statistics for 2011, 44 percent of the total GDP of the country is produced in its Western province (centred around the capital Colombo) with 5.7 percent of land area and 28 percent of the population (Wijerathna, Karunagoda & Bandara, forthcoming). The distribution of the land area, population and economic activity across the provinces is given in Table 1.

3. Theoretical and Empirical Evidences from Previous Studies

There are a number of alternate theories on regional development and analysing regional development disparities (Smith, 2004; World Bank, 2009). A review of these theories is important since these concepts are important in understanding possible causes for existing problems and also in finding the most appropriate ways of overcoming these problems. Development theories of the 1950s and 1960s primarily focused on the material growth associated with the process of modernization (Barca, McCann & Rodríguez Pose, 2012). According to neo classical regional growth theories the disparity across regions would not persist since convergence would occur naturally over time through the operation of free market forces. The movement of factors of production across regions in search of greater economic returns and absorption of new technologies from leading regions (by peripheral lagging regions) are identified as the key factors leading to convergence (Ray, 2007). According to the associated catching up hypothesis, the rate of growth of per capita income of lagging regions should be inversely related to their initial level of per capita income. Barriers to the free movement of factors of production (such as family ties, links to the land, and ethnic loyalties or religious affinities to particular localities) in addition to government interventions which create price distortions, can adversely affect the process of convergence (Fotopoulos, 2012). As per endogenous growth theory, the smart use of resources owned by the region is the key to economic success. Even long term persistent disparity of lagging regions is possible due to differences in resource endowment and their inadequate capacities to benefit from agglomeration (Marques & Soukiazis, 1998; Matsuki & Usami, 2011; Robert & Francesc Xavier, 2012). Though there are number of alternative theories and arguments, there does not exist any best identified theory or historical consensus on the best mechanism for successful regional development. In the World Development Report 2009 this issue is well discussed. It identifies three main dimensions of the issue, namely density, distance and division, and in overcoming these problems it suggests three solutions, namely institutions, infrastructure, and interventions. Other authors such as Barca et al. (2012) have also discussed the importance of a regional focus within an overall development agenda. For some time, public investment in backward regions was recognized as the best possible way of inducing development in the economies of lagging regions. However promotion of private investment and public private
partnerships are now also considered as mechanisms to be explored for generating new employment and income creation in lagging regions.

Following the pioneering work of Williamson (1965) and Barro and Sala-i-Martin (1992), there have been number of research papers focused on the analysis of regional economic disparities. The level of development of a region is essentially explained by its capacity to add economic value per head of population (per capita regional GDP). The sigma convergence (i.e. a reduction in the disparities of levels of income across countries or regions) analysis method initiated by Williamson (1965) is widely accepted as an appropriate measure in understanding the overall regional disparity of a country within a given time (Shankar, R., & Shah, A. 2003). The beta convergence (i.e. a convergence that occurs when poor countries or regions grow faster than rich countries or regions) analysis method of Barro and Sala-i-Martin (1992) is useful in both interpreting the converging behaviour of individual provinces over time and in understanding their rate of convergence.

There are a few attempts to analyse regional level disparities within Sri Lanka both by local and international researchers (Bandara & Jayasooriya, 2010; Gunewardena, forthcoming; Kakwani, 1988; Karunaratne, 2007b; Uduporuwa, 2007 ). Two of these studies are based on theories of convergence. Shankar and Shah (2003) have considered the level of regional disparity among Sri Lankan provinces during the period 1990-1995. They have also compared the level of regional disparity in Sri Lanka together with some other developed and developing countries either with unitary and federal governing systems. Karunaratne (2007a) analyses the provincial disparity of per capita income in Sri Lanka with a sigma convergence analysis that he carried out using the coefficient of variation measure. He also discusses the importance of improving economic integration and promoting labour intensive industries.

4. Analysis of Economic disparities among Sri Lankan provinces

The level of economic disparity between regions can either be analysed as a static or dynamic measure. Our analysis in this paper is primarily based on provincial level per capita GDP that we denote as Per capita GDP (Per capita Gross Provincial Domestic product) in the rest of the paper. Data required for the study was obtained from published and unpublished reports of Central of Sri Lanka (Central Bank of Sri Lanka, 2004, 2005, 2012). A multi-method approach consisting of simple tabular and graphical analysis and convergence analysis with some statistical indicators was applied in understanding the nature and dynamics of regional (provincial) economic inequality in the country. Since provincial level GDP data for the country is available only from 1996, our quantitative analysis is also restricted to the period of 16 years starting from 1996 to 2011.
The sigma convergence analysis initiated by Williamson (1965) is commonly used in cross sectional studies to understand the level of overall economic disparities within countries. Repeated sigma convergence analysis is useful in understanding the variation in overall disparity over time. Different authors have come up with different inequality measures for analysing the level of sigma convergence (Shankar, R., & Shah, A. 2003). Since those alternative indicators with varying complexities are best used for highlighting different aspects of disparity and convergence, we decided to use following four widely used indicators in our analysis.

4.1 Maximum to Minimum ratio (MMR)

The ratio $MMR$ of maximum and minimum per capita GPDP is the most simple and direct measure or indicator that can be used in understanding the range of disparity in between regions. In interpreting this measure, the ratio gets closer to one with an equal distribution and further from one with increasing disparity. Though this indicator is easily used, it is highly sensitive to the presence of outliers. Further it does not provide any idea about the regions with per capita GPDP values which fall in between minimum and maximum.

$$MMR = \frac{GPDP_{\text{richest Province}}}{GPDP_{\text{poorest Province}}}$$

4.2 Coefficient of variation (CV)

Following the work of Williamson (1965), the coefficient of variation is widely used in convergence literature (smith 20004). CV is defined as the ratio between real value of mean per capita GPDP and its standard deviation across the regions. It is essentially a measure of dispersion of per capita GPDP of each region from their average. Since this is a standardized value it can be used in comparisons over time or across other countries. It is possible to calculate CV either as a simple or weighted measure in few different ways. We use following methods in calculating weighted and unweighted CV.

4.2.1 Unweighted Coefficient of Variation (CVu)

$$CV_u = \sqrt{\frac{\sum (Y_i - \overline{Y}_u)^2}{N \overline{Y}_u}}$$

Where $Y_i$ is the per capita GPDP of $i^{th}$ province, $N$ is the number of provinces and $\overline{Y}_u$ is the simple average of per capita GPDP and it is calculated as
Some authors, including Williamson (1965), have used national per capita GDP as the denominator in the above equation. Following the convention of Shankar and Shah (2003) an unweighted simple average of per capita GPDP is generally considered appropriate. The value of CV varies from 0, for perfectly equal distribution, to $\sqrt{N - 1}$ for perfectly unequal distribution. One problem in this measure is its sensitivity to outliers. A highly deviated single per capita GPDP value can increase the value of CV and provide an incorrect picture in comparisons (either across time or countries). The simple CV is also sensitive to the varying population in different regions.

\[ \bar{Y}_w = \frac{1}{N} \sum_{i} Y_i \]

4.2.2. Weighted Coefficient of Variation (CVw)

To overcome the possible biasness due to varying populations in provinces, an alternative measure of weighted CV can be calculated. The population weighted coefficient of variation is calculated as

\[
CV_w = \sqrt{\frac{\sum_{i}^{P}(Y_i - \bar{Y})^2 P_i}{\bar{Y} P}}
\]

Where $Y_i$ is the PGDP of $i^{th}$ province, $\bar{Y}$ is per capita GDP of the country, $P_i$ is population of the $i^{th}$ province and $P$ is population of the country. The value of CV varies from 0, for a perfectly equal distribution, to $\sqrt{(P - P_i)/P_i}$ for perfectly unequal distribution where a single province owns the entire GDP of the country.

4.3 Weighted Gini Index (Gw)

The Gini index is one of the widely used indices in analysing inequality among people, households or regions. Following Kakwani and World Bank (1980) and Shankar and Shah (2003) we calculated the weighted Gini index as given below.

\[
G_w = \left(\frac{1}{2P^2}\right) \sum_{1}^{i} \sum_{1}^{j} |Y_i - Y_j| \frac{P_i P_j}{P^2}
\]

Where $\bar{Y}$ is the national per capita GDP, $Y_i$ and $Y_j$ are per capita GPDP of $i^{th}$ and $j^{th}$ provinces, $P_i$ and $P_j$ are population of $i^{th}$ and $j^{th}$ provinces, $P$ is national population and both $i$ and $j$ equal to number of provinces. $G_w$ varies from 0, for perfectly equal
provincial distribution, to \(1 - (P_i/P)\) for perfectly unequal distribution with single rich province who literally earn all of the national GDP.

### 4.4 Weighted Mean deviation (MD\(_w\))

Weighted mean deviation is another measure used by researchers including Smith (2004); Williamson (1965), Kakwani (1988) and Shankar and Shah (2003). In some studies this measure is named as the relative mean deviation (e.g., Shankar, R., & Shah, A. 2003). Given however that it is a summation of the absolute difference between national per capita GDP and per capita PGDP of each province, we favour the use of the MD\(_w\) term. This indicator is advantageous over the others for a couple of reasons. Firstly, as it does not require the squaring of mean differences it is less sensitive to outliers. Secondly, it is an additively decomposable measure. The following method is used in calculating MD\(_w\):

\[
MD_w = \left( \sum_{i=1}^{n} \left| Y_i - \bar{Y} \right| \frac{P_i}{P} \right) / \bar{Y}
\]

Where \(Y_i\) is the per capita GPDP of \(i^{th}\) province, \(\bar{Y}\) is per capita GPDP of the country, \(P_i\) is population of \(i^{th}\) province, \(N\) is the number of provinces and \(P\) is population of the country.

\(MD_w\) takes the value of 0 for perfectly equal distribution and varies up to \(2P(N-1)/ P_i\) for perfectly unequal distribution.

A summary of our sigma convergence analysis is presented in Table 2 and Figure 2. As depicted by all indicators, Sri Lankan provinces diverged during the period 1996 to 2000, before starting to converge again with some fluctuations. In 2000, the per capita GDP of the richest province is about seven times as that of poorest. By 2011 the condition is drastically improved such that the richest is only two and half times as the poorest. According to other indicators the overall disparity among regions has only experienced a slight improvement compared to the 1996 situation. As it is shown in Figure 2, three weighted indicators (\(CV_w, G_w, MD_w\)) behave in the same pattern over time period though the magnitudes of those are different.

Even though many authors have used beta convergence analysis, with a cross sectional regression for a given time lag, this method is not feasible for our case due to the limited number of cross sectional data points with only nine provinces. We have, however, used some alternative measures in understanding rate of convergence and the time required for full convergence with the rate of current convergence. Since we can observe a linear trend in convergence from 2000, we estimated the rate of convergence as the mean annual percentage decrease of each of our weighted coefficients. As Table 3 shows, sigma convergence among Sri Lankan regions is taking place at an average rate of 3.01 per cent to 3.59 per cent from year 2000. If the
country can maintain this rate for another 14 to 17 years it may able to halve its regional disparity and have a regionally balanced situation in about another 30 years.

5. Concluding Remarks and Policy Implications

Based on our analysis of data and insights from previous studies, we can derive a set of conclusions. Economic conditions in Sri Lankan provinces are not equal geographically and there is a considerable level of inequality that has persevered over time. The disparity between provinces is visible both in the contribution that they are making to the national GDP and also in terms of value addition per head (in the Province) or per capita GPDP. Variation in per capita GPDP is not high as that of the provincial GDP due to comparatively higher population density in leading regions.

All three weighted indicators \( CV_{w}, G_{w}, MD_{w} \) calculated to understand the sigma convergence (in terms of per capita GPDP) show similar patterns of temporal variation. Though the magnitudes of indicators are not comparable, any of them can be used in analysing the temporal variation. Sri Lankan provinces diverged during the period from 1996-2000. From 2000 onwards there is a declining trend in inequality with some temporary fluctuations. Some fluctuations in the pattern of convergence are coincident with changes in political conditions and the prevailing armed conflict. For example in 2009, at the peak of civil war, there is a divergence. A clear convergence is visible after the war. Further, the current level of convergence took place during the current ruling party may be associated with the current government’s policy of developing some rural infrastructure; mainly rural roads. The average rate of convergence observed with three weighted indices \( CV_{w}, G_{w}, MD_{w} \) during the period 2000-2012 varies from 3.3-4.1 %, and is almost twice as the average rate of 2% of beta convergence observed by Barro and Sala-i-Martin (1992) with US data. If the average rate of convergence prevailing in the period 2000-2012 continues linearly, the country may be able to halve its current level of disparity in 16 years and eliminate the asymmetry in about 30 years. In saying this however, it must be recognized that there is no guarantee about continuity in the same level of policies or same rate of convergence. Further, the current rate of convergence observed with per capita GPDP is not autonomous and is mostly associated with the recent rural road development projects and reconstruction taking place after ending the war. Further, as theory suggests, the rate of convergence of a lagging region is inversely related to the initial level of income of that region.

The rate of growth in different provinces as well as their rate of convergence towards the national average is fluctuating over the time. While the fluctuations in Northern and Eastern regions are associated with the changing intensity of civil conflict, in other regions it is relating to government interventions with various projects and programs. Ad hoc private investments taking place in different provinces are also contributing to these fluctuations. Variations in natural resources endowment, quality
of human resources, available technology, and level of infrastructure conditions are the other main reasons for varying economic conditions in the provinces.

As it is suggested by many authors convergence is not taking place automatically, and if the solving of this problem is left to the market it may take many years even under perfect institutions. With the given variations in natural conditions, level of infrastructure, production systems, knowledge and available technology, automatic convergence in Sri Lankan provinces is not very realistic. Hence some policy interventions that promote regionally inclusive growth are important. Since the market is not working all areas, some government interventions with public investments, public private partnerships as well as some incentives for private sector to work in lagging regions is paramount.

**Limitations**

The quality of our quantitative analysis is directly related to the quality of the data that we could gather. Provincial level production data for Sri Lanka were available only from 1996. The best available provincial level GDP data include some values systematically derived from national level GDP calculations. As result, the level of accuracy of data in terms of coverage or reporting is unknown. Provincial level GDP deflators were also not available, and thus our real price calculations are based on available national GDP deflators. This may have led to some incorrect estimation with varying price levels in different provinces. The population census in Sri Lanka is usually carried out once in every ten years. However there was no census from 1981 to 2001. Hence most of the annual regional population data used in calculating per capita GDP are estimated values published by Department of Census and Statistics. Some over or underestimation of per capita GDP and GPDP values may have thus also resulted with the estimation errors of population.

It should be noted also that GDP is an imperfect measure of economic welfare, and its use as the focus of our convergence/divergence analysis may need some qualification in subsequent research. Per capita GDP represents income generated in a particular region or province rather than the per capita income actually received by residents of that region. For example some of the GDP recorded as being associated with the Northern and Eastern provinces represents expenditure on Sri Lankan armed forces located in these regions for ‘peace-keeping’ purposes. Furthermore, a large proportion of the GDP generated in the Western provinces accrues as gross operating surplus (or profits) to multinational corporations based in Colombo and the migrant work force rather than representing income that finds its way into the hands of local residents. Consumption, or household disposable income, is arguably a better measure of economic wellbeing and subsequent research by the current authors will focus in on this measure.
References


Appendices

Table 1: Land area, population and GDP (2011)

<table>
<thead>
<tr>
<th>Province</th>
<th>Land Area (Sq.km)</th>
<th>Land Share</th>
<th>Population ('000)</th>
<th>Population share</th>
<th>GDP (RS Mn -Nominal)</th>
<th>GDP share (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Western</td>
<td>3,593</td>
<td>5.7%</td>
<td>5,919</td>
<td>28.4%</td>
<td>2,905,000</td>
<td>44.4%</td>
</tr>
<tr>
<td>Southern</td>
<td>5,383</td>
<td>8.6%</td>
<td>2,519</td>
<td>12.1%</td>
<td>727,000</td>
<td>11.1%</td>
</tr>
<tr>
<td>North Western</td>
<td>7,506</td>
<td>12.0%</td>
<td>2,366</td>
<td>11.3%</td>
<td>652,000</td>
<td>10.0%</td>
</tr>
<tr>
<td>Central</td>
<td>5,575</td>
<td>8.9%</td>
<td>2,719</td>
<td>13.0%</td>
<td>644,000</td>
<td>9.8%</td>
</tr>
<tr>
<td>Sabaragamuwa</td>
<td>4,921</td>
<td>7.8%</td>
<td>1,962</td>
<td>9.4%</td>
<td>406,000</td>
<td>6.2%</td>
</tr>
<tr>
<td>Eastern</td>
<td>9,361</td>
<td>14.9%</td>
<td>1,584</td>
<td>7.6%</td>
<td>375,000</td>
<td>5.7%</td>
</tr>
<tr>
<td>North Central</td>
<td>9,741</td>
<td>15.5%</td>
<td>1,255</td>
<td>6.0%</td>
<td>300,000</td>
<td>4.6%</td>
</tr>
<tr>
<td>Uva</td>
<td>8,335</td>
<td>13.3%</td>
<td>1,342</td>
<td>6.4%</td>
<td>292,000</td>
<td>4.5%</td>
</tr>
<tr>
<td>Northern</td>
<td>8,290</td>
<td>13.2%</td>
<td>1,203</td>
<td>5.8%</td>
<td>241,000</td>
<td>3.7%</td>
</tr>
<tr>
<td>Total</td>
<td>62,705</td>
<td>100.0%</td>
<td>20,869</td>
<td>100.0%</td>
<td>6,542,000</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Source: Central Bank of Sri Lanka (2012)

Table 2: Sigma convergence observed in Sri Lankan provinces

<table>
<thead>
<tr>
<th>Year</th>
<th>Max/Min Ratio</th>
<th>Simple Coefficient of Variation</th>
<th>Weighted Coefficient of Variation</th>
<th>Weighted Gini Index</th>
<th>Weighted Mean Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996</td>
<td>5.311</td>
<td>0.395</td>
<td>0.466</td>
<td>0.270</td>
<td>0.361</td>
</tr>
<tr>
<td>1997</td>
<td>4.759</td>
<td>0.406</td>
<td>0.480</td>
<td>0.276</td>
<td>0.378</td>
</tr>
<tr>
<td>1998</td>
<td>4.655</td>
<td>0.467</td>
<td>0.500</td>
<td>0.290</td>
<td>0.397</td>
</tr>
<tr>
<td>1999</td>
<td>5.680</td>
<td>0.539</td>
<td>0.575</td>
<td>0.331</td>
<td>0.461</td>
</tr>
<tr>
<td>2000</td>
<td>6.747</td>
<td>0.577</td>
<td>0.602</td>
<td>0.357</td>
<td>0.480</td>
</tr>
<tr>
<td>2001</td>
<td>3.961</td>
<td>0.443</td>
<td>0.488</td>
<td>0.286</td>
<td>0.393</td>
</tr>
<tr>
<td>2002</td>
<td>3.652</td>
<td>0.434</td>
<td>0.485</td>
<td>0.282</td>
<td>0.393</td>
</tr>
<tr>
<td>2003</td>
<td>3.561</td>
<td>0.451</td>
<td>0.512</td>
<td>0.291</td>
<td>0.423</td>
</tr>
<tr>
<td>2004</td>
<td>3.422</td>
<td>0.487</td>
<td>0.550</td>
<td>0.312</td>
<td>0.457</td>
</tr>
<tr>
<td>2005</td>
<td>3.302</td>
<td>0.465</td>
<td>0.533</td>
<td>0.301</td>
<td>0.444</td>
</tr>
<tr>
<td>2006</td>
<td>3.519</td>
<td>0.465</td>
<td>0.524</td>
<td>0.303</td>
<td>0.431</td>
</tr>
<tr>
<td>2007</td>
<td>3.129</td>
<td>0.386</td>
<td>0.443</td>
<td>0.252</td>
<td>0.361</td>
</tr>
<tr>
<td>2008</td>
<td>2.933</td>
<td>0.358</td>
<td>0.416</td>
<td>0.235</td>
<td>0.339</td>
</tr>
<tr>
<td>2009</td>
<td>2.904</td>
<td>0.366</td>
<td>0.426</td>
<td>0.241</td>
<td>0.348</td>
</tr>
<tr>
<td>2010</td>
<td>2.681</td>
<td>0.346</td>
<td>0.407</td>
<td>0.228</td>
<td>0.333</td>
</tr>
<tr>
<td>2011</td>
<td>2.450</td>
<td>0.336</td>
<td>0.395</td>
<td>0.223</td>
<td>0.321</td>
</tr>
</tbody>
</table>

Source: Authors’ calculation based on data from Central Bank of Sri Lanka
Table 3: Rate of Convergence

<table>
<thead>
<tr>
<th></th>
<th>Weighted Coefficient of Variation</th>
<th>Weighted Gini Index</th>
<th>Weighted Mean Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average annual % convergence (2000-2011)</td>
<td>3.22%</td>
<td>3.59%</td>
<td>3.01%</td>
</tr>
<tr>
<td>Half a life</td>
<td>16</td>
<td>14</td>
<td>17</td>
</tr>
<tr>
<td>Time for Full convergence</td>
<td>31</td>
<td>28</td>
<td>33</td>
</tr>
</tbody>
</table>

Source: Authors’ calculations

Figure 1: Sri Lankan Provinces
Figure 2: Dynamics of Sigma Convergence
Figure 3: Temporal behaviour of regional economics with respective to national average

Graphs by province