

## **Impact of Economic Growth on Income inequality: A Case Study of Sri Lanka**

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### **Introduction**

Economic growth and distribution of income can be recognized as two important issues, which are concerned with economic development. Although the poverty rate of Sri Lanka is a single digit value, the GINI coefficient value reflects relatively high income inequality. At the same time, even though Sri Lanka belongs to the middle income category<sup>2</sup>, the overall economic growth rate is unstable and not sustained. In addition, regional and provincial poverty levels depict disparities of income distribution at a micro scale. Therefore it is important to understand the growth-income inequality nexus.

Income inequality in economics is the significant disparity in the distribution of income between individuals, groups, populations, social classes, or countries. This territory is staked out by founding scholars. The seminal work of Kuznets (1955) is both important and controversial. He asserted that inequality was a consequence – though only temporary – of economic growth. In this respect, inequality was seen as increasing in the early stage of the economic development process before decreasing with further development. The existing empirical studies found a positive (e.g., Rubin and Segal 2015; Wahiba and Weriemmi 2014; Lundberg and Squire 2003), a negative (e.g., Majumdar and Partridge 2009; Nissim 2007) and mixed (e.g., Huang et al. 2015; Chambers 2010) relationship between economic growth and income inequality.

So in most cases, the nature of the relationship between income inequality and growth is dubious at best. Especially for developing countries, rising per

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<sup>2</sup> Sri Lanka had been elevated to the status of an upper middle-income country in July 2019 and again down rated as lower middle income country in July 2020.

capita income induces more inequality, which retards growth in this range. By contrast, in developed countries, rising per capita income tends to reduce inequality, which lowers growth in this range (Barro, 1990). Moreover, the relationship may differ depending on the region or the size of an economy. Fallah and Partridge (2007) show that the impact of inequality on economic growth is opposite in rural and urban settings.

In considering the Sri Lankan literature an uncertain relationship is observed due to the policy changes in the country (Rathnayaka, 2014). Also, Sri Lanka has been experiencing different phases of income inequality; 1963-1973 low income inequality with welfarism policies, 1973-1987 high income inequality and 1987-1997 low income inequality (Karunaratne, 2000). Related studies on other Asian countries prove that economic growth impacts on income inequality significantly and positively. Further, Kakwani (1988) highlights that economic development and income inequalities are positively related in Sri Lanka, with the turning point of the Kuznets inverted U shape hard to find, or occurring at the last stage of development. In sum, studies highlight that there is no consensus on the sign and strength of the relationship.

### **Objective**

The main objective of this study is to examine the impact of economic growth on income inequality in Sri Lanka.

### **Methodology**

This study is based on time-series data of Sri Lanka over the period 1980-2019 to analyse the impact of economic growth on income inequality. The data was obtained from the World Development Indicators of the World Bank database. Variables of this study were selected based on some of the existing studies (e.g., Shahbaz 2010) and the model is expressed as follows:

$$LGINI_t = \beta_0 + \beta_1 LGDPC_t + \beta_2 LFDI + \beta_3 UMP_t + u_t \quad (1)$$

Where, LGINI: log of GINI coefficient, LGDPC: log of Gross Domestic Product per capita, LFDI: log of foreign direct investment, UMP: unemployment rate,  $\varepsilon$ : error term and the subscript t indicates time period.

Augmented Dickey Fuller (ADF) and Philips Perron (PP) unit root tests were used to check the stationarity of variables. AIC criterion was used to select the optimum number of lags that can be included in the model. Autoregressive Distributed Lag (ARDL) model - which was developed by Pesaran et al. (2001) – was employed to examine equation (1). ARDL Bounds Testing approach was used to find the existence of cointegration and long run equilibrium relationship between variables. ARDL version of Error Correction Model (ECM) was estimated to study the short run relationship between variables and long run adjustment of the model.

Diagnostic tests of Jarque-Bera, Lagrangian Multiplier (LM) and Breusch-Pagan-Godfrey test were conducted to check whether the residual was distributed normally, no serial correlation between two error terms and residual has constant variance respectively. Further, Ramsey RESET test was used to check whether the model is specified correctly. Cumulative Sum (CUSUM) test and Cumulative Sum Squares (CUSUMSQ) test was employed to check the stability of the model.

### Results and Discussion

ADF and PP unit root tests identified that all variables are integrated in I(1) except unemployment which is integrated in I(0) (see Table 1 in Appendix). AIC criteria selected ARDL (1, 2, 0, 0) model among the top 20 models. The results of ARDL Bounds test (see Table 2 in Appendix) confirm the existence of cointegration between the variables since the F statistic is greater than I(1) bound value. The table below shows long run relationship between the variables that were estimated from the ARDL model.

Table 3: Results of Long- run Relationships

Constant	LGDPC	LFDI	UMP	R <sup>2</sup>
2.223932***	0.110969**	-0.028958**	0.050689*	
(0.0000)	(0.0413)	(0.0442)	(0.0594)	0.911329

Note: Probability values are given in parenthesis. \*, \*\* and \*\*\* indicate variables are significant at 10%, 5% and 1% level of significance respectively.

Above results imply that GDPC and unemployment rate are positively and significantly correlated with GINI while FDI is negatively correlated with GINI in the long run. That is, a 1 per cent increase in per capita growth rate

induces income inequality by 0.11% in the long-run, *ceteris paribus*. Also, 1 per cent rise in FDI tends to decrease income inequality by 0.029 per cent whereas, a 1% increase in unemployment rate tends to rises income inequality by 0.05 per cent in the long run. Some of the existing empirical literatures on the developing and middle income countries are similar to these findings (e.g., Barro 1990). It may occur with the acceleration of economic growth through more investments, as the real return is not equally distributed and the higher income group gain more benefits. Corruption, structural features, high low-skilled labour proportion and low employment opportunities worsen this in the long run.

The results of ECM (see Table 4) depict that GDPC affect income inequality negatively at lagged 1 and positively at lagged 2 in the short-run. FDI has a positive and significant impact on income inequality in the short run. The speed of adjustment coefficient is negative and significant which implies that the disequilibrium of income inequality that arises from exogenous shocks moves towards steady state line at a speed of 70.64% in each year one period after the shocks. The short run impact is aligned with some studies (e.g., Majumdar, 2009) and the negative impact in the short run may occur due to welfare programs and high immigration of low skilled labour.

Table 4: Results of Error Correction Representation of ARDL Model

Panel A: Results of Short run (Dependent Variable: LGINI)			
Lag Order	0	1	2
$\Delta$ LGINI		0.592* (0.0730)	
$\Delta$ LGDP	0.206 (-0.4101)	-0.651** (0.0162)	0.503** (0.0344)
$\Delta$ FDI	0.016* (0.0970)		
$\Delta$ UMP	-0.002 (0.1068)		
Panel B: Results of Long run Adjustment			
ECT (-1) = -0.7064 (0.0489)***			

Note: Probability values are given in parentheses. \*, \*\*, and \*\*\* show variables are significant at 1%, 5% and 10% level of significance respectively.

All the diagnostic tests proved that there are no diagnostic errors in the model and the results are robust (see Table 5 in Appendix).

## Conclusion

This paper examines the impact of economic growth on income inequality in Sri Lanka both in the long run and in the short run. This study found that an increase in the economic growth tends to decrease income inequality in the short run but increase inequality in the long run. There is a negative relationship between FDI and income inequality in the long run while a positive relationship exists between these two variables in the short run. Unemployment affects income inequality positively and significantly in the long run while it does not have a significant impact in the short run. In taking policy decisions, one has to be conscious of these mixed results. Absence of corruption, transparency and proper management of welfare policies, reduce the dependency mentality of economically poor people, improve human capital, rule of law and long sighted economic policies over political biasness would be crucial to mitigate the income inequality conditions in Sri Lanka, although these are not directly revealed in this study. Therefore, it is planned to explore these factors in a further study.

## References

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## Appendix

Table 1: Results of Unit Root Test

Variable	ADF test		PP test	
	Level	1 <sup>st</sup> Difference	Level	1 <sup>st</sup> Difference
LGDP	0.9116	0.0062***	0.9115	0.0062***
LGINI	0.6348	0.0000***	0.1487	0.0000***
LFDI	0.2376	0.0003***	0.2368	0.0000***
UMP	0.0364**	0.0022***	0.0405**	0.0019***

Note: \*, \*\* and \*\*\* indicate rejection of null hypothesis at 10%, 5% and 1% respectively.

Table 2: Results of Bounds Test

Test Statistic	Value	Significance.	I(0)	I(1)
			Asymptotic: n=1000	
F-statistic	4.026663	10%	2.37	3.2
K	3	5%	2.79	3.67
		1%	3.15	4.08

Table 5: Diagnostic Tests

Diagnostic Test	Test Applied	P- Value
Serial correlation	BG Serial Correlation LM Test	0.6612
Functional Form	Ramsey's reset test	0.7267
Normality	Test of skewness and Kurtosis	0.6287
Heteroscedasticity	Breusch-Pagan-Godfrey	0.7270

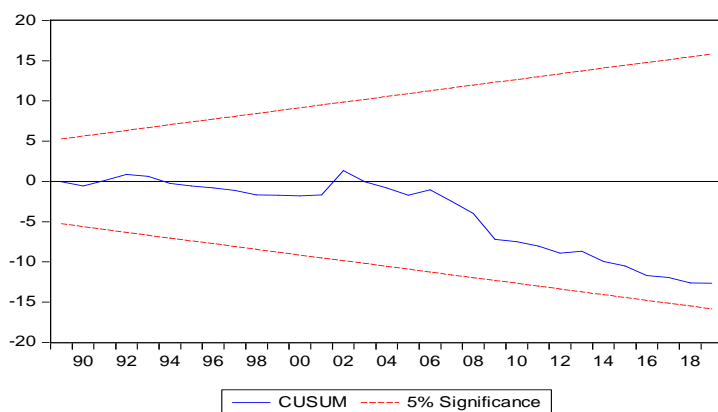


Figure 1: Results of CUSUM Test