

Effect of Inflation on Growth and Poverty in South Asia

Sanjaya Acharya¹ and Mohamed Ileas Miah²

¹Tribhuvan University, Kathmandu, Nepal, E-mail: sanjaya.acharya@gmail.com

²Ministry of Public Administration, Dhaka, Bangladesh, E-mail: ileas.miah@gmail.com

Received: 14 December 2020; Revised: 23 December 2020;

Accepted 11 January 2020; Publication: 10 February 2021

Abstract: This study investigates the impact of inflation on growth and income of the poorest section of the society in South Asian five major economies for the period 1986-2014. Using 28 years of time series data of five major South Asian countries – India, Pakistan, Sri Lanka, Bangladesh, and Nepal – this study concludes that inflation has negative but insignificant impact on growth. Trade openness is still not supportive to the pro-poor growth because the poor are not well integrated to the supply chain in the global market. The population growth has immediate impact on food prices; therefore, the latter also has some positive effect on the income of the poorest who basically draw their livelihood from agriculture. Overall consumption expenditure and gross investment in the economy are also not supportive to raise the income of the poor because the effects of consumption and investment expenditure basically benefit to middle-and higher-income groups. However, population growth rate and debt servicing do have positive impact; the former due to overall rise in the prices of food items that farmers produce and the latter due to the public sector borrowing which oftenspent on public infrastructure.

Key words: Inflation; Growth; Poverty; Income Distribution; South Asia

JEL Classifications: E31; O47; I32; D31; O53

1. Introduction

The World Bank's Global Economic Prospects, June 2011, recognized and expressed concern about stubbornly high inflation and large fiscal deficit in South Asia. The report pointed that the average 9.3 percent inflation during the decade of 2000s in the South Asia region might have slowed the potential growth rate. The tighter financing conditions and rising food and fuel prices have contributed to pathetic consumption and investment growth. High international fuel and food prices are key factors pushing inflation rate high in South Asia because of its heavy reliance on imports of petroleum fuels and some other food items, such as edible oils. Additionally, food represents a large share regional household consumption basket, a key concern from poverty perspective. Furthermore, a series of local one-off factors have contributed to price pressures including the economic disruptions from flooding in Pakistan during the second half of 2010 and Sri Lanka in early 2011; the partial liberalisation of petroleum prices in India in mid-2010; and

the rising administered petrol prices elsewhere in the region including Bangladesh and Pakistan.

Inflation remains a key downside risk to growth, as policymakers face numerous challenges in reducing price pressures. If inflation remains elevated, it is likely to hamper the region's international competitiveness and foreign investment – creating headwinds to gains in productivity. Fiscal slippage is contributing to inflationary pressures and limits policy options in the event of future crises through limited fiscal space.

Despite numerous studies on inflation and growth, the result is not yet conclusive. Sarel (1995) conducted empirical studies on inflation and growth before 1970 and found insignificant positive relation. Rate of inflation was relatively low and stable during post-war period. But afterwards, inflation began rising and studies by Kormendi and Meguire (1995), Fischer (1993), Motely (1994), and Barro (1995) found negative and insignificant relation between inflation and growth. Furthermore, the relation of inflation with other macroeconomic variables such as growth and investment is also under debate and there is still disagreement among the policy makers on cost of inflation and cost of reducing inflation (Mankiw, 2000).

Major concern for South Asia with inflation is that it is the home to the vast majority of the world poor. Inflation might have adverse impact on the poor and other vulnerable groups in the society. Since the consumption pattern of the poor is different from that of the non-poor and the poor spend a higher share of their budget on food and other essential commodities, inflation hurt the poor more than the non-poor.

Various target programmes are operational in South Asia that expects to protect the poor from various macroeconomic shocks such as unemployment and inflation. The other strategy to achieve the same goal is to devise effective policies which would enhance the economic growth as the latter is assumed to be helpful in reducing poverty (Lopez and Humberto 2004; Rodrik 2005).

Inequality growth nexus shows that more equal countries grow faster than the less equal countries. East Asia is shown as an example. East Asian countries grew rapidly and high-inequality Latin American and African countries grew very slowly. South Asia with relatively low inequality in distribution of income is not growing sustainably compared to the East Asian countries. Therefore, in addition to inequality, there should be other factors as well that are interlinked to affect growth in the region. This study intends to bring these factors in light.

In this backdrop, the objectives of this paper are two folds. First it aims to examine the impact of inflation on growth in case of South Asian economies. Moreover, the second objective of the paper is to assess how inflation hits the poorest of the poor section of the society. The latest poverty statistic (population living below poverty line) by the World Bank shows approximately two-fifths of the population are below the poverty line in South Asia (World Bank, 2019).

Therefore, this study has assessed the effect of inflation on poverty – in terms of the income of the lowest quintile of the population.

The rest of the sections in this paper are organised as follows. Section 2 describes the method to this study. It describes the sources of data and the method of analysis to see the impact of inflation on economic growth and income of the poorest group of the society. This section also presents the empirical model to be implemented in the study. The model proposed in Section 2 is run in Section 3. Furthermore, this section also presents the diagnostics based on some simulation runs. The paper concludes in Section 4.

2. Methods

2.1. The Objectives, Hypotheses, and Data

This paper aims to investigate impact of inflation on growth, and income distribution with reference to the economies of south Asia. It has a series of hypotheses in this regard. First, the growth is reducing inequality. Rising inflation might have induced inequality and indirectly affected poverty reduction adversely. Furthermore, the inflation, both food and non-food types, affects growth and income distribution of the lowest quintile population negatively and increase the income share of the highest quintile, the rich. This is how inflation widens inequality. The inclusion of food price inflation is very pertinent in including it in the analytical framework. The World Food Programme cautioned that the rising prices of food items might cause political cost because the marginal propensity of food consumption expenditure of poorer households is approximately 70 percent of their income (ILO, 2009).

This study has used World Development Indicators data, as well as IMF's International Financial Statistics. Furthermore, based on availability of consistent macroeconomic data, this study has selected five major economies of south Asia: India, Pakistan, Bangladesh, Sri Lanka, and Nepal and has formed a panel of 28 years. Upon the gap of required data from the common external source, the study has fulfilled them from national statistics available from the respective government sources. While combining data from different sources, consistency has been thoroughly reviewed.

2.2. Empirical Model

This paper uses the model developed by Barro (1995) and Sala-I-Martin (1997) to answer why the countries of South Asia are lagging behind in growth and inequality reduction and whether inflation has anything to do with them. Moreover, inflation as an explanatory variable has been more specifically used in terms of food and consumers price index inflation. The study has diagnosed its impact on GDP growth and income of the poorest quintile of the population as a major indicator of inequality in the economy. More specifically, the study has used two-stage regression analysis as follows:

Regression Model

$$Y_{it} = \alpha_0 + \alpha_1 \pi_{it} + \alpha_{mi} X_{it} + \alpha_i D_i + \varepsilon_{it}$$

where,

Y is GDP growth rate.

π is the rate of inflation-food and non-food inflation and lag of inflation,

Xs are different income, fiscal and trade variables, regarded as control variables.

They are trade openness, saving and investments in the economy, total consumption expenditure, and debt servicing expenditure. D is the country dummy included in both models. It refers D1 for India, D2 for Nepal, D3 for Pakistan and D4 for Sri Lanka. The model without any dummy refers to that of Bangladesh.

Some other country specific studies of the region show inflation, economic growth, investment, and trade openness are closely linked with poverty (Rahman 2019, Chani 2011, Acharya and Cohen 2008, Acharya, Holscher, and Perugini 2013). The selection of the variables used in this model, therefore, accommodates the perspectives followed by the previous studies. However, this study conducts series of simulations using both fixed effect model and random effect model. Consequently, the conclusion drawn would therefore, be definitely robust.

3. Findings

Table 1 reveals the effect of inflation on growth, using fixed and random effect methods applied to panel data. Inflation hampers economic growth but the coefficient is statistically insignificant. In random effect model the one period lag of inflation has also been taken into consideration and the result is still negative and insignificant. Among the control variables, only the level of investment is statistically significant and positive, and other variables such as trade openness, savings, consumption expenditure, debt service are insignificant. Except trade openness, all other variables are found to have expected positive sign. The results are robust with respect to the methods chosen, random effect model and the fixed effect model.

Table 1: Inflation and GDP Growth Rate

Dependent variable: GDP growth rate

Variable	EQ 1(FE)	EQ2 (RE)	EQ3(RE)
Intercept	-0.409218 (0.757)	.3752458 (0.720)	.5530601 (0.602)
Inflaindx	-.0052098 (0.320)	-.004338 (0.413)	
Inflaindx1			-.007187 (0.223)
Tradeopenness	-.0071922 (0.196)	-.0075602 (0.177)	-.0055493 (0.326)

contd. table 1

Variable	EQ 1(FE)	EQ2 (RE)	EQ3(RE)
Saving	.0610658 (0.261)	.0708809 (0.194)	.082381 (0.136)
Consumption exp.	.0657795 (0.527)	.0951505 (0.357)	.111414 (0.281)
Investment	.1999614 (0.000)***	.1725166 (0.000)***	.168025 (0.000)***
Debt service	-.1163646 (0.520)	-.0260593 (0.883)	-.1300635 (0.473)
D1		-1.497844 (0.131)	-1.615917 (0.108)
D2		-1.173835 (0.124)	-1.30286 (0.090)
D3		-.230139 (0.804)	-.060794 (0.948)
D4		-1.338672 (0.164)	-1.156188 (0.233)
R ²	Wthn.0.162 Btwn.0.218 Ovll. 0.131	Wthn. 0.151 Btwn.0.961 Ovll. 0.178	Wthn0.139 Btwn.0.966 Ovll.0.169

Note: Figures in the parentheses are P-value (*, **, and ***, indicate significance level at 10%, 5% and 1%, respectively.) FE and RE refer to fixed effect and random effect model, respectively.

Inflaindx = inflation index (based on IFS data on consumer's price index, base year 2010=100)

Inflaindx1 = inflation index of the previous year

Tradeopenness = trade openness, i.e. (import+export)/GDP

Saving = total domestic saving (% of GDP)

Consumption exp. = total final consumption expenditure of the government (% of GDP)

Investment = total investment (% of GDP)

Debt service = total debt servicing expenditure (% of total export)

Consumers Price Inflation, both current and past year's, do have negative impact on the income of the poorest of the poor, i.e. lowest quintile population. However, the food price spiral does have positive impact on their income (Table 2) as majority of the poor are agricultural workers. Food price inflation is the only factor contributing the growth of income of lowest quintile population. The population growth has immediate impact on food prices; therefore, it also has some positive effect on the income of the poorest. Similar is the impact of the GDP growth. But, the impacts of these two factors are not strong enough to raise the level of the income of poor significantly.

Government consumption expenditure and gross investment in the economy are also not supportive to raise the income of the poor. Similar is the effect of trade openness; it is raising the income of the richer group than the poor; therefore, the share of income of the lowest quintile population is declining. However, population growth rate and debt servicing do have positive impact; the former due to overall rise in the food prices and the latter

Table 2: Growth, Inflation and Income Share of the Poorest Quintile
Dependent Variable: Income Share of the Lowest Quintile

<i>Variable</i>	<i>EQ1(FE)</i>	<i>EQ2(RE)</i>	<i>EQ 3(RE)</i>	<i>EQ4(RE)</i>
Intercept	9.529757*** (0.000)	9.628286*** (0.000)	9.662333*** (0.000)	9.537663*** (0.000)
Inflaindx	-.0037026* (0.061)	-.0026659 (0.250)		
Inflaindx1			-.0039136 (0.109)	-.0067934** (0.030)
GDP	.004706 (0.846)	.0073168 (0.766)	.0071332 (0.770)	-.0129683 (0.666)
PGro		.0908674 (0.539)	.0423757 (0.771)	.227266 (0.136)
Foodprice				.0039448*** (0.008)
Tradeopenness	-.0023065* (0.101)	-.0024417* (0.087)	-.0022479 (0.113)	-.0020833* (0.097)
Saving	-.0243804 (0.180)	-.0099908 (0.569)	-.0069063 (0.693)	-.0391327 (0.147)
Consumptionexp.	-.0993032*** (0.001)	-.099928*** (0.001)	-.0942973*** (0.002)	-.070641** (0.051)
Investment	.0159389 (0.417)	-.0037735 (0.829)	-.0015009 (0.930)	-.003467 (0.889)
Debt-service	.0758464 (0.157)	.0865636* (0.095)	.0786471 (0.125)	-.0636211 (0.383)
D1		.3644114 (0.242)	.3060702 (0.321)	
D2		-.8272384*** (0.000)	-.8123622*** (0.000)	
D3		.347988 (0.200)	.3733686 (0.167)	
D4		-.7689004** (0.030)	-.8299781** (0.018)	
R-	Wthn.0.233 Btwn.0.005 Ovll. 0.076	Wthn.0.243 Btwn.0.999 Ovll. 0.623	Wthn.0.242 Btwn.0.999 Ovll. 0.620	Wthn.0.350 Btwn.0.002 Ovll. 0.066

Note: Figures in the parentheses are P-value (*, **, and *** indicates significance at 10%, 5% and 1%, respectively.)

due to the public sector borrowing that are often spent on public infrastructure. The conclusion is robust irrespective to the models applied – random and fixed effects models.

Raising the level of domestic saving does have negative impact on the income of the poor; it is likely due to the fact that saving is possible from the higher income group and their less consumption expenditure has contracting trickle down effects that reduce the income of the poor. Growth in overall investment boosts economic growth (Table 1) that also raises the income of the poor to some extent (Table 2) but that is not strong enough to raise their

income significantly. The return to the investment is definitely more to the investors – the higher income group.

4. Conclusion

This study has studied inflation, growth and distribution nexus in South Asia. Using 28 years (1986-2014) time series data of five major South Asian countries – India, Pakistan, Sri Lanka, Bangladesh, and Nepal – this study formed into a panel data set of major macroeconomic indicators. It has made a diagnostic of the inflation and its impact on growth, and share of national income by the poorest quintile of the population group. In addition to the fixed effect model, the study has also created country-specific dummies and used random effect model as well.

In South Asian countries, inflation is hampering economic growth but this effect is statistically insignificant. The result is robust in terms of lagged and non-lagged inflation index used as an independent variable in the model. The level of investment is the only significant factor among those used in the analysis to explain the GDP growth rate in South Asian economies. Consumer Price Inflation does have negative impact on the income of the poorest of the poor, i.e. lowest quintile population in terms of income distribution. However, the food price spiral does have positive impact on their income as majority of the poor are agricultural workers. It is the only factor proved as significant among others used in the model to explain positive impact on the income of the poor. The population growth has immediate impact on food prices; therefore, it also has some positive effect on the income of the poorest who basically draw their income from agriculture. Similar is the impact expected from the GDP growth. But, the impacts of overall GDP and population growth are not strong enough to raise the level of income of the poor significantly.

Overall government consumption expenditure and gross investment in the economy are also not supportive to raise the income of the poor because the effects of consumption and investment expenditure basically benefit to middle- and higher-income groups. However, population growth rate and debt servicing do have positive impact; the former due to overall rise in the food prices and the latter due to the public sector borrowing that are often spent on public infrastructure.

References

- Acharya, S., and Cohen, S., (2008). Trade liberalization and household welfare in Nepal. *Journal of Policy Modelling* 30, 1057-1060.
- Acharya, S., Holscher, J., and Perugini, C., (2012). Trade liberalization and inequalities in Nepal. *Journal of Economic Modelling* 29, 2543-2557.
- Barro R.J. (1995). Inflation and economic growth. NBER Working Paper, No. 5326.
- Chani, M. I., Pervaiz, Z., Jan, S. A., Ali, A. and Chaudhary, A.R., (2011). Poverty, inflation and economic growth: empirical evidence from Pakistan. Munich Personal RePEc Archive.

- Fischer, S., (1993). The role of macroeconomic factors in growth. *Journal of Monetary Economics* 32, 485-512.
- ILO (International Labour Organization), (2009). Global Wage Report 2008/09, ILO, Geneva.
- Kormendi, R., and Meguire, P., (1985). Macroeconomic determinants of growth. *Journal of Monetary Economics* 16.
- Lopez, J. H., (2004). Pro-growth, pro-poor: is there a trade-off? Policy Research Working Paper Series 3378, The World Bank.
- Motley, B., (1994). Growth and inflation: across-country study. Federal Reserve Bank of San Francisco, Working Paper, No. 08.
- Rahman, M., Rana, R. and Barua, S., (2019). The drivers of economic growth in South Asia: evidence from a dynamic system GMM approach. *Journal of Economic Studies* 46, 564-577.
- Rodrik, D., (2005). Rethinking Growth Strategies. WIDER Perspectives on Global Development. Basingstoke: Palgrave-Macmillan in association with UNI-WIDER.
- Sala-I-Martin, X. X., (1997). I just ran two million regressions. *The American Economic Review* 87, 178-183.
- Sarel, M., (1995). Nonlinear effects of inflation on economic growth, Working Paper, No. 56, IMF, Washington DC, International Monetary Fund.
- World Bank, (2019). World Development Outlook. The World Bank, Washington DC.