The Impact of Tax and Social Expenditure Policies on Income Distribution: Evidence from South Asia

Suhrab Khan[1*], Ihtsham Ul Haq Padda[2]

[1,2]Federal Urdu University of Arts, Science & Technology, Islamabad, Pakistan
E-mail: [1]suhrab_k@yahoo.com, [2]ihtsham91@gmail.com

[*]Corresponding Author

Abstract

Tax and social expenditure policies have a crucial role in income distribution. This study explores the potential role of taxation and social expenditure policies in income redistribution in South Asia. For this purpose, empirical analysis is conducted by Fixed Effect (FE) and Instrumental Variable (IV) FE models. The analysis suggests that both taxation and social expenditures policies effectively reduce income inequality in South Asia. These findings indicate that social spending and taxation can be used as a policy tool to redistribute income in developing countries. The results also indicate that higher social spending, increased direct taxes, and more reliance on foreign debts can ameliorate the income distribution. Based on the results, it can be suggested that for this region, with the low level of taxes, direct taxes, a large informal economy, and other weak features of tax administration, more reliance on direct taxes and social expenditure policies should be the primary tool for income redistribution.

Keywords:
direct and indirect taxes, GDP per capita, social expenditure policies, gini coefficient

Introduction

Fiscal policy has a significant impact on income distribution and welfare. Through an appropriate mix of tax and social spending policies, wealth and income can be distributed fairly. During the last decade's income inequality has been rising almost in all countries due to an era of skepticism about claims that low-tax driven growth would eventually lead to everyone being well-off; an expectation that economists formalize in the Kuznets curve hypothesis (Agnello & Sousa, 2014; Piketty & Sáez, 2013). The global income inequality has slightly reduced due to catching up with China and India. However, from 1980 to 2016, the top 1% has captured twice as much total growth as the global bottom 50% (Alvaredo et al., 2018). The unequal income distribution is a significant cause of social injustice, political unrest, ethnic and regional violence. The high disparity in income and wealth persuade the poor to indulge in disruptive activities such as crimes, riots and thus, it retards economic growth (Bartels, 2018; Berg et al., 2018). Moreover, some empirical studies show that a more equal society enjoys a more significant life expectancy, fewer mortality rates, low school dropout, more minor mental illness, and drug abuse (Elgar & Aitken, 2011; Wilkinson & Pickett, 2009).

The developing countries have not yet succeeded in devising economically efficient and fairly distributive tax and transfer systems. The tax system of developing countries has multiple problems such as low tax to GDP ratio, high tax evasion and avoidance, weak tax institutions, high reliance on indirect taxation, which are likely regressive, affecting negatively the low-income households. Moreover, corruption, poor governance, and little attention to imposing taxes on the elites due to political reasons undermine the potential tax revenue (Auriol & Warlters, 2005; Besley & Persson, 2014; Fuest & Riedel, 2009). Regardless of that, in developing countries, redistribution and social expenditure programs are politically motivated, and certain political clouts, military elites, business tycoons, and real estate owners have effective control over the government programs and projects. Henceforth, most of these projects are carried out in urban areas rather than in rural areas where the majority of the poor and ultra-poor households reside (Alesina et al., 2002; Hemming et al., 2002). Due to low revenue generation capacity, it is a policy constraint for the developing countries to increase the domestic revenue to finance their high public and social expenditures. Moreover, it is also challenging for policymakers and economic planners to devise tax policies that are economically efficient and fairly distributive (Alavuotunki et al., 2017; Tanzi, 2000).

Market forces alone do not always bring a fair distribution of income. That is why government intervention is justified for redistributing income and correcting other market failures (Aikins, 2009; Wade, 2004). The government often uses tax and transfer policies to affect the income distribution, though significant redistribution through tax reforms is complex (Alesina & Angeletos, 2005; Berg et al., 2018). Tax and expenditures policies have a significant impact on income and wealth redistribution. Government spending might help ameliorate income disparity if tax revenues and transfer systems are redistributed in favor of the poor. A prudent and sound fiscal policy can reduce income inequality and poverty through tax and transfer systems (Cubero & Hollar,

2010; Milligan, 2013). In the case of developed countries, taxation is more effective in income redistribution and resource reallocation. The developed nations have adequate tax machinery, and they mostly rely on progressive income and corporate taxes. Therefore taxation is relatively effective in reducing income inequality (Bird, 2003; Lustig, 2017).

However, some strands of literature indicate that taxation is less effective in income distribution in developing countries due to large informal economy, excessive dependence on indirect taxes, and lack of adequate tax machinery, while the social expenditure policies have a relatively distributive effect (Bastagli, 2015; Bird & Zolt, 2005; Gemmell & Morrissey, 2005). In the case of developing (and transition) countries, due to low level of direct taxes, large shadow economy, and other weak features of tax administration, many have argued that social expenditures should be the primary tool for redistribution (Chu et al., 2000; Goñi et al., 2011; Tanzi, 2000). However, high reliance on indirect taxes may be rejected on equity standpoints as regressive, but it may be desirable on the equity ground as the resulting tax revenue is used for the social sector in rural areas (Inchauste & Lustig, 2017). Government spending on social sectors such as education, health, sanitation, and other necessities effectively reduces poverty and income inequality. Moreover, the expenditure policies such as primary education, essential health, and poverty reduction programs are believed to be progressive and can better target low-income households than taxes without much distortion of incentives (Bastagli, 2015; Bird & Zolt, 2005; Niehues, 2010).

Similarly, Martínez-Vázquez et al. (2012) study the impact of social expenditures such as social protection, education, health, and housing for a sample of developed and developing countries taking data from 1970-2009. The results show that all four categories of social expenditures effectively reduce income inequality. Causa and Hermansen (2017), using household-level microdata of Organization for Economic Co-operation and Development (OECD) countries, show that income inequality can be reduced by progressive taxes such as income and corporate taxes and increasing the expenditures on social security and transfer payments. According to Hoeller et al. (2012), a country with a relatively small tax base and transfer system can attain the same income redistribution level compared to a large tax base and transfer system if the former has a progressive tax system. In Pakistan, empirical studies also confirm that government transfer payment and social safety net programs such as Benazir Income Support Program (BISP) have significantly reduced the income disparity and poverty level (Farooq, 2014; Mumtaz & Whiteford, 2017; Iqbal et al., 2020; Nawaz & Iqbal, 2020). Similarly, Maboshe and Woolard's (2018) and Rossignolo's (2017) studies also indicate that social security contribution and personal income and wealth taxes reduce the income disparity in Argentina and South Africa.

Like other low-income countries, South Asia's tax and transfer payment systems have almost the same symptoms. Low tax to GDP ratio, complex tax system with a plethora of tax exemptions and privileges to various sectors and activities, narrow tax base, tax evasion, less compliance, and undocumented economy have undermined the potential tax revenue in the region (Kleven & Waseem, 2013; Padda, 2014; Gupta, 2015). Most countries' tax to GDP ratios is below the cross-country average, resulting from inadequate financial needs. Despite high growth in the last decades, mostly the regional countries

have under performed in the tax revenue collection especially larger countries such as Bangladesh, India and Pakistan, the tax to GDP ratio has either declined or stagnated. This underperformance in revenue mobilization extends to all kinds of tax instruments such as income tax, goods and services tax (GST), and property taxes (Gupta, 2015). Figure 1 indicates the tax composition of regional countries for the year 2018-19. In all regional countries except India, indirect taxes such as GST, excise, and customs duty significantly contribute to the total revenue. Empirical studies show that the incidence of indirect taxes likely falls on the poor segment of the society as the poor households tend to consume more of their income as tax than higher-income individuals (Inchauste & Lustig, 2017; Martinez-Vazquez et al., 2012).

Figure 1. Regional Comparison of Tax Revenue Composition
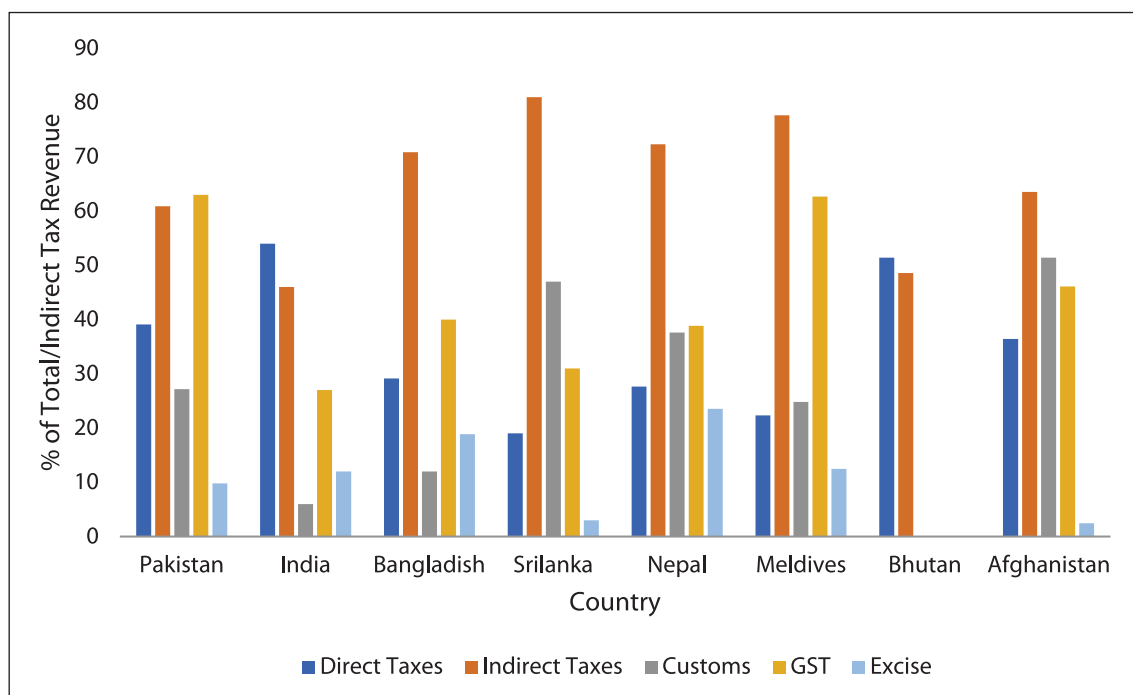
Source: Economic Surveys of the respective countries

In this study, we analyze the association between the distinguishing taxes -direct and indirect taxes and social expenditures- and the inequality in income distribution in South Asian countries during 2000- 2017. Governments in low and developing countries are particularly interested in assessing their fiscal policies to promote inclusive growth and reduce inequality and poverty. So this study has two main objectives. Firstly we assess whether taxation is effective in reducing income inequality in South Asia or not. In the case of developing (and transition) countries, due to the low level of direct taxes, large shadow economy, and other weak features of tax administration, many have argued that social expenditures policy will be effective in income distribution. Therefore, secondly, we examine the impact of social expenditures in reducing income disparities in the region. Recently there has been an acknowledgment of joint assessment of tax

and expenditures policies to find their impact on poverty and income inequality. There is scarce systematic research that has been undertaken regarding the joint assessment of tax and expenditures policies on income inequality for South Asia. Therefore, the current study is intended to explore it in a detailed manner. For empirical analysis, the impacts of direct taxes, indirect taxes, and social spending programs are explored using Fixed Effect (FE) and Instrumental Variable (IV) FE models. Our results show that taxation and social expenditures policies significantly reduce income inequality in South Asia.

Methods

We have taken the data from 2000 to 2017 of seven South Asian countries, including Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka. The Gini coefficient, a well-known statistical measurement of income inequality in the economic literature, is the dependent variable in this study (Liang, 2006; Milligan, 2013). The data on the Gini coefficient is retrieved from Standardized World Income Inequality Database (SWIIB). The SWIIB (2020) uses after-tax and transfer income for the measurement of the Gini coefficient. The availability and reliability of Gini coefficients' data are significant, and there are specific missing numbers in time series data. However, SWIIB uses various imputation techniques to fill the missing values and standardizes the data for all the countries, taking the World Income Inequality Database (WIID) as the starting point (Solt, 2020).

The tax to GDP ratio is our primary independent variable. It is an aggregate of all tax revenues comprising direct taxes such as income tax, wealth tax, corporate tax, and withholding tax, while indirect tax revenues include GST, tariff, excise, and customs duty. The data on taxation are obtained from the 2017 edition of government revenue Dataset (GRD) and economic surveys of the respective countries. This GRD dataset provides disaggregated data on tax revenues that help analyze the effect of tax composition on the Gini coefficient. Moreover, we also disintegrated the total tax revenue into direct and indirect taxes. The direct taxes are expected to be more effective in equalizing the income by redistributing the income from rich to poor, while the indirect tax revenues are regressive and lead to income distribution more deteriorated (Martorano, 2018; Tsounta & Osueke, 2014). Our second primary independent variable is the social expenditure to GDP ratio. It includes the government spending on the social sector such as health, education, and other social safety net programs. It is expected that spending on social sectors has an income ameliorating effect (Bastagli, 2015; Niehues, 2010). So our baseline model will be;

$$Gini= F\ (TT,\ SE,\ Z)$$

Here Gini is the Gini Coefficient, statistical measurement of income inequality, TT is the total tax to GDP ratio, SE is the total social expenditures to GDP ratio, and finally, Z is composed of control variables included in the model to avoid omitted variable bias. These variables also affect income inequality. To ascertain the heterogeneous effects of direct and indirect taxes, the total taxes are replaced with direct taxes and indirect taxes, respectively. Besides taxes and social expenditures, several other variables are expected to have influences on the Gini coefficient. The choice of control variables

is based on the previous researches on the inequality determinants. The first included control variable in our model is GDP per capita. An increase in GDP per capita may increase the income disparity, but later it decreases. Increasing inequality is due to the shifting of some workers from agriculture to the industrial sector, as the industrial sector return is higher than agriculture. Therefore the per capita income of people involved in industry rises, leading to an increase in inequality. At later stages of development, more workers who entered the industrial sectors move up the ladder, reducing income disparity (Chan et al., 2014; Muinelo-Gallo & Roca-Sagalés, 2011; Naguib, 2017).

Trade openness is also included in the model as a proxy of globalization. International trade has become a significant factor in income inequality. However, economic literature has no consensus on trade openness on income inequality in developing countries. Trade can increase the demand of abundant unskilled workers in developing countries thus can have an income ameliorating effect (Grossman & Rossi-Hansberg, 2008; Mischi & Vivarelli, 2009). However, if trade increases the demand for scarce skilled workers, widening wage dispersion leads to income inequality (Lee & Virarelli, 2006; Jalil, 2012).

Foreign direct investment (FDI) is also included in our econometric model. It has an ambiguous impact on inequality. The reason is that FDI influx may increase the relative demand of high-skilled workers, increasing the wage and income compared to low-skilled labor, thus increasing the income disparity. However, it is also expected to equalize the income by increasing the demand for low and unskilled workers (Couto & Center, 2018; Figini & Gorg, 2011). Moreover, for the developing countries, capital inflow/outflow may create shocks, and it needs prudent and sound fiscal and monetary policies to manage the exchange rate and capital accounts (Ostry et al., 2011).

Table 1. Definition of Variables and Sources of Data

Variable descriptions	Unit of measurement	Sources
Gini coefficient, the dependent variable	0-1	World Income Inequality Database (WIID), 2015
Taxes excluding the social contribution	% of GDP	2018, Government Revenue Data Set
Direct taxes including resource revenue and excluding social Expenditures	% of GDP	2018, Government revenue Data Set
	% of GDP	
Indirect Taxes, excluding the social contribution	% of GDP	2018, Government revenue Data Set
Government spending on the social sector such as health, education, and other social safety nets	% of GDP	WDI (2020)
GDP per capita *(GDPC)*	constant (2010US$)	WDI (2020)
Trade openness; the sum of export and import	% of GDP	WDI (2020)
Foreign Direct Investment (FDI)	% of GDP	WDI (2020)
The stock of foreign Debt (SDE)	% of GDP/GNI	WDI, (2020)

Source: Authors' elaboration

Last but not least, the external debt to GDP ratio also has a significant impact on income inequality. The external debt increases the government's fiscal space and helps channel the resource towards the social sector, such as health, education, and other essential services to the poor, thus reducing the income disparity in the country (Akram & Hamid, 2016; Ngerebo, 2014). Moreover, external debt increases the foreign reserves, and it helps in the time of recession and sudden capital flight to stabilize the exchange rate and capital account (Adam et al., 2018). However, it is impossible to finance social spending by borrowing abroad indefinitely, as time will come when the debt will have to be repaid, with interest leading to fewer resources available for government expenditures.

This study takes panel data of seven South Asian countries from the period 2000 to 2017. As the data is the short panel in nature, there will not be an issue of stationarity, and conventional Fixed Effects (FE) and Random Effects (RE) models are suitable econometrics techniques for empirical analysis. A general panel regression is given below in equation 1.

$$\text{Gini}_{it} = \alpha_0 + a_1 \text{TT}_{it} + a_2 \text{SE}_{it} + a_3 Z_{it} + U_{it} \quad (1)$$

$$\text{here } U_{it} = U_i + V_{it} \quad (2)$$

Two main econometric techniques, i.e., Fixed Effects (FE) and Random Effects (RE) models, are used to analyze the micro panel data. FE model explores the relationship between the outcome/dependent variable and predictors/independent variables that vary over time within an entity (country, company person). Each entity has its characteristics that may or may not affect both the outcome and predictors. In the case of the FE model, we assume that the individual's time-invariant effects (U_i) may affect the predictors or outcome variables; therefore, we need to control for this. Here Ui shows the unobservable individual country's time-invariant effects, and Vit represents the remaining error terms. At the same time, there is no correlation between our included independent variables and V_{it} for all i and t. The advantage of the FE model is that it removes the effect of U_i from the independent variables and only captures the net effect of the independent variables. So the final equation for the FE model is given below.

$$\text{Gini}_{it} = \alpha_i + a_1 \text{TT}_{it} + a_2 \text{SE}_{it} + a_3 Z_{it} + V_{it} \quad (3)$$

$$\text{Here } \alpha_i = U_i + a_0 \quad (4)$$

Equation 3 accounts for the individuality of each cross-sectional unit by allowing the intercept to vary for each while assuming the slope coefficients constant across all the cross-sectional units. The subscript i on the intercept term shows that the intercepts of the cross-sectional units may vary. In the RE model, we assume no correlation between our included independent variables and U_{it}, i.e., the individual's time-invariant effects (U_i) and V_{it} are independent and identically distributed. It means that the variation across entities is random and uncorrelated with the independent variables in our model. So the RE model is given in equation 5.

$$\text{Gini}_{it} = a_0 + a_1 \text{TT}_{it} + a_2 \text{SE}_{it} + a_3 Z_{it} + U_{it} \quad (5)$$

Here U_{it} consists of two components, i.e., individual country's time-invariant specific error component (U_i), and V_{it} is the combined time-series and cross-sectional

error components. The decision between FE and RE models will be decided based on Hausman (1978) test. It measures whether the countries' specific time-invariant effects (U_i) are correlated with the included exogenous variables or not. The Null Hypothesis (Ho) of the Hausman Test is that countries' specific factors are not correlated with the exogenous variables, while the alternative hypothesis (H_1) is correlated with the exogenous variables. The rejection of Ho is the acceptance of the FE Model, and acceptance of Ho is in favor of the RE Model. Moreover, most economic variables are dynamic, i.e., the lag value of the dependent variable is correlated with the country-specific fixed effects. Due to endogeneity issue, i.e., the correlation between the exogenous variables and the error terms, the conventional FE and RE models give biased and inconsistent estimates of the parameters and also underestimate the variance (Ahn et al., 2001; Baltagi, 2008; 2000; Ebbs et al., 2004). To cope with this issue, Arellano and Bond (1991) and Blundel and Bond (1998) have developed a model for the short dynamic data that produces efficient and unbiased estimates. However, these methods are suitable for dynamic panel data with many panels and short periods. However, these methods provide relatively biased and inefficient estimates for a data set with small panels like ours (Judson & Owen, 1999). To tackle this issue, we employ the standard instrumental variable FE and RE models. Following Devereux et al. (2007), we take the first lag of the dependent variable and other additional independent variables as instruments.

Results and Discussion

Table 3 reports the results of the Hausman (1978) test and all four FE models. These results show that taxes can be used as a policy tool for redistributing income, contrary to many empirical studies in other developing countries that taxation is ineffective in redistributing income and wealth (Baihui, 2017; Lustig et al., 2013; Martorano, 2018). The results of the Hausman (1978) test favors the FE model. Therefore we provide the results of only FE models. The total tax to GDP ratio, direct tax to GDP ratio, and indirect tax to GDP ratio has a significantly negative impact on the Gini coefficient. The negative impact of taxes may reflect the progressive structure of the tax system of the analyzed countries. In a progressive tax system increase in the tax revenue through increasing the tax base or tax rate would yield a more significant redistributive effect, thus lower inequality (Martinez-Vazquez et al., 2012; Muinelo-Gallo & Roca-Sagalés, 2011).

Moreover, the expenditures on the social sector correlate negatively with the Gini coefficient, validating other empirical studies that social spending can ameliorate income inequality in the sample countries (Bastagli, 2015; Niehues, 2010). The results indicate that a 1% increase in social expenditure reduces the Gini coefficient by 0.005% on average. So these results are consistent with the previous literature arguing that expenditures on education, health, and other poverty reduction programs are more effective in redistributing income (Álvarez-Gálvez & Jaime-Castillo, 2018; Martinez-Vazquez et al., 2012; Shah et al., 2018). However, taking into account the low level of social expenditures, a great budgetary effort would be necessary to reduce the income inequality in South Asia.

The GDP per capita has a positive and significant impact on income inequality. The results show that the GDP per capita increases the Gini coefficient validating the conventional Kuznets hypothesis. As our sample consists of low-income countries, this result is in line with the Kuznets type relationship. Increasing inequality is due to the shifting of some workers from agriculture to the industrial sector, as the industrial sector return is higher than agriculture. Therefore the per capita income of people involved in industry rises, leading to increase income inequality (Chan et al., 2014; Naguib, 2017).

The trade has a positive and but insignificant effect on the Gini coefficient. This is likely attributed to the low level of share of world trade of South Asian countries. However, the positive sign of the trade openness indicates that international trade is expected to widen the wage dispersion between unskilled and skilled workers, resultantly increasing the income inequality in the region (Lee & Virarelli, 2006; Jalil, 2012). A possible justification could be that in South Asia, the significant exports sectors, i.e., agriculture and manufacturing, are dominated by the elites who extract rents and other tax exemptions, increasing income inequality (Zakariya & Fida, 2016). However, the FDI inflow has negative coefficients but is insignificant. Due to lack of inadequate infrastructure facilities, governance issues, and internal conflict, the South Asian countries still go a long way to attract FDI (Bhavan et al., 2011). However, if FDI inflow increases the demand for low-skilled labor, it is expected to equalize the income by increasing the wage of low-skilled and less-educated workers (Couto & Center, 2018; Figini & Gorg, 2011).

Table 2. Results of FE Fixed Models

Dependent Variables	(1)	(2)	(3)	(4)
Total taxes	-0.0406*** (0.0061)			0.0120 (0.0318)
Direct taxes		-0.0115** (0.0036)		-0.0079 (0.0085)
Indirect tax			-0.0352*** (0.0058)	-0.0377** (0.0142)
Social expenditures	-0.0054* (0.0027)	-0.0049* (0.0025)	-0.0057** (0 .0035)	-0.0058** (0.0031)
GDP per capita	0.0495** (0.0185)	0.0440 (0.0204)	0.0439** (0.0156)	0.0460** (0.0173)
Trade	0.0346 (0.0272)	0.0375 (0 .0300)	0.0321 (0.0255)	0.0344 (0.0273)
FDI	-0.0010 (0.0023)	-0.0005 (0.0025)	-0.0018 (0.0025)	-0.0012 (0.0020)
External debt stocks	-0.0161* (0.0070)	-0.0089 (0.0094)	-0.0103 (0.0061)	-0.0107 (0.0085)
Constant	3.3586*** (0.2343)	3.2711*** (0.3001)	3.3618*** (0.2135)	3.3184*** (0.2646)
R-Sq	0.5171	0.4491	0.5200	0.5344
No of observation	122	122	122	122
Hausman Test (P Value)	0.0000	0.0000	0.000	0.001

Note: Robust standard errors are in parenthesis. ***, **, and * indicate significant at 1%, 5% and 10% level respectively.

Lastly, the external debt also has a significantly negative impact on the Gini coefficient in model 1, showing that foreign debt accumulation decreases the income disparity in the country. Debt can affect the income distribution in different directions depending on how the debt is utilized as the external debt increases the fiscal space of the government and help to channel the resource towards social sector such as health, education, and other essential services to the poor thus reducing the income disparity in the region (Agnello & Sousa, 2012; Akram & Hamid, 2016). When spending is financed by borrowing abroad, the government is not taking from the poor, at least in the short run, which is why this combination is more effective for reducing inequality (Ngerebo, 2014). However, one particular aspect is the impossibility of financing social spending by borrowing abroad indefinitely, as time will come when the debt will have to be repaid with interest. If that finance is carried out from indirect taxes, as in the case of South Asia, then the inequality is expected to increase.

Table 3. Results of IV FE Model

Dependent Variables	(1)	(2)	(3)	(4)
lag of Gini coefficient	0.5506***	0.6550***	0.3392	0.5680***
	(0.1213)	(0.0913)	(0.5482)	(0.2437)
Total taxes	-0.0129**			0.0061
	(0.0062)			(0.0114)
Direct taxes		-0.0036***		-0.0044**
		(0.0010)		(0.0019)
Indirect taxes			-0.0184	-0.0104
			(0.0237)	(0.0129)
Social Expenditures	-0.0003	0.0001	-0.0013	-0.0003
	(0.0009)	(0.0006)	(0.0032)	(0.0017)
GDP per capita	0.0142***	0.0083*	0.0226	0.0129
	(0.0050)	(0.005)	(0.0219)	(0.0095)
Trade	0.0103*	(0.0073	0.0170*	(0.0102)
	(0.0060)	(0.0062)	(0.0094)	(0.0077)
FDI	0.0002	0.0005	-0.0003	0.0003
	.000939	(0.0007)	(0.0015)	(0.0009)
External debt Stocks	-0.0035	-0.0012	-.0028636	-0.00157
	(0.0031)	(0.0014)	.0061187	(0.0036)
Constant	1.5603***	1.1925***	2.2574	1.4772***
	(0.4568)	(0.3204)	(1.9127)	(0.8565)
R square	0.9561	0.9797	0.8117	0.9561
No of Observation	115	115	115	115

Note: Robust standard errors are in parenthesis. ***, **, and * indicate significant at 1%, 5% and 10% level respectively. All variables are in log form.

In order to check the robustness of our results, we use instrumental variables to examine the simultaneity between the fiscal variables and income inequality. Moreover, we take the first lag of both the dependent variable (Gini coefficient) and trade as instruments to tackle the issue of endogeneity. However, to check whether one particular country in our sample drives the results, we drop one county at a time from the regression

equation. The results are stable after repeating this process, indicating that no single country is driving our results. Table 3 reports the IV FE results of all four models. The expected signs and significance levels of both IV FE and conventional FE models are almost similar. The significant positive coefficients and high significance level of the previous year's Gini coefficient indicate the high persistence of inequality in income redistribution in the short run.

Moreover, the estimated coefficient value is between 0 and 1, indicating the convergence of income inequality in the region. The total tax to GDP ratio, direct/ indirect taxes ratios has a significantly negative impact on the Gini coefficient. These results show that taxes can be used as a policy tool for redistributing income in the region, validating other empirical studies (Lustig et al., 2013; Martorano, 2018; Muinelo-Gallo & Roca-Sagalés, 2011). Similarly, the social expenditures harm the Gini coefficient, but they are not significant in either model. The GDP per capita has a positive and significant impact on income inequality again. The positive signs indicate a Kuznet relationship, i.e., in the early stages of development, an increase in GDP leads to an increase the income inequality in South Asia.

However, in IV FE, the trade has a positive and significant effect on the Gini coefficient. The positive sign of the trade openness indicates that international trade is expected to widen the wage dispersion between unskilled and skilled workers, resultantly increasing the income inequality in the region, validating other empirical studies (Lee & Virarelli, 2006; Jalil, 2012). Again FDI has no significant effect on the Gini coefficient of the south Asian countries in either model. Lastly, the external debt stock has a negative but insignificant effect on the Gini coefficient. However, the negative signs indicate that the external debt supplements the government's fiscal space and helps channel the resource towards social infrastructure and other essential services to the poor, thus expected to reduce the income disparity in the region. However, it is impossible to finance social spending by externally borrowing indefinitely, as time will come when the debts will have to be repaid, with interest leading to fewer resources available for government expenditures.

Conclusion

Income inequality has increased over the past three decades in developing (transition) countries. Our study examined how tax and expenditures policies affect income inequality. This study investigated the impact of government tax revenue, social expenditures, and other variables such as GDP per capita, trade openness, FDI, and external debt stocks on the income distribution of South Asia, taking the data from 2000-2017. Our empirical study suggests that in the case of South Asia, taxation policies, direct taxes are effective in income distribution. These results show that taxes can be used as a policy tool for redistributing income, contrary to the popular notion that taxation is ineffective in redistributing income and wealth in developing countries. The negative impact of taxes may reflect the progressive structure of the tax system in South Asia. In a progressive

tax system, increasing tax revenue by increasing the tax base or tax rate would yield a more significant redistributive effect.

Moreover, the expenditures on the social sector also ameliorate the income disparity in the region. This region has a relatively low tax to GDP ratio, sizeable informal economy, excessive dependence on indirect taxes, and lack of adequate tax machinery undermine the potential revenues and constraints governments' investment in the social sectors. Therefore, regional countries should mobilize the internal resources for inclusive growth by increasing direct taxes' tax base. The government's antipoverty programs are primarily constrained by limited tax revenue. Regional governments could benefit from expanding their tax base, raising the tax rate on top income, developing well-designed social benefits to target vulnerable people, and focusing on education and health sectors. So this study suggests that in the case of South Asia, due to low level of taxes (direct) taxes, large shadow economy, and other weak features of tax administration, the taxation and social expenditures policies should be the primary tool for income and wealth redistribution.

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