

How does Income Inequality Affect Human Development in Pakistan?

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Abstract:

Inequality weather has a negative impact on development, but it is still an unresolved discussion and it affects the various development measures. Income Inequality means no proper distribution of income among rich and poor. Income inequality can vary significantly by section, education and various collective statuses. The researchers are separated as to whether the income equality is ultimately positive or negative and what are the implications of such difference. This study is an attempt to analyze the determinants of income inequality in the economic growth of Pakistan by using time series data over the period 1980-2012. This data examined by using an econometric model with the help of eviews software. The dependent variable is GDP (per capita) and the independent variable is income inequality (GINI). GDP per capita is taken as a worldwide measure of economic success and welfare. The auto-regressive distributed lag (ARDL) co-integration approach is employed to check the existence of a long-run relationship and an error correction (ECM) model based on ARDL approach is used to find out short run relationship between

variables. The result shows there is negative relationship between GDP and income inequality. Further, I used the HDI control variable as a measure of development which shows the positive relationship with economic growth of Pakistan. The human development index (HDI) attempted and emphasis on human welfare rather than on the growth of the national economy.

Key words: income inequality (GINI), economic growth (GDP), Human development index (HDI).

Introduction:

Income inequality has become a crucial issue in the modern world. It has been a very sensitive indicator when comes to measure development. It is influencing the society in various ways. In order to investigate its harm effects; measuring its impacts on gross domestic product (GDP) per capita is one of its ways. GDP per capita is taken as a universal measure of economic prosperity and wellbeing. This relationship of income inequality and GDP per capita needs more arguments and justification. Modern studies on HDI and income inequality have emphasized the importance of HDI as an indicator of development in any country (Human Development Report). HDI is selected as a control variable because it is good at measuring wellbeing and it includes health and education along with income. Yet the relationship between inequality and the course of economic development is far from being well understood (Zeira et. al., 1993).

If inequality determines the level of redistribution, it will then have an indirect effect on the rate of growth of the economy. In general, we would expect that in very unequal societies, more voters favor high redistribution than in more equal societies. If redistribution decreases the incentives to invest and the growth rate, then more equal societies would

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grow faster. Although it accounts for the negative correlation between inequality and growth found by reduced-form equations, the political economy approach is not fully supported by the data. It implies that larger inequality increases the extent of redistribution, which in turn has a direct negative effect on economic growth (Rodrik et. al., 1994).

The saving and total production functions depend on the original distribution and it is greater along the extra unequal steady-state. When combined with an AK production function, this leads to predict that new unequal economies will produce faster. The growth in the group of goods, services and capital across boundaries in particular countries .He goes further and says that it is a nonstop process by which the western market economies have successfully extended across the globe. With this definition, the complete process of integrating the economy of the world has reached extraordinary levels surpassing the pre-World War I high position As a result, this new change in the world economic atmosphere has brought far reaching consequences in the economic welfare of individuals in all areas of the world and more significantly between all income groups (Bourguignon, F. 1981), (Heshmati, A. 2003).

The saving tendency of capitalists is superior to the workforce, and as a result total savings depend on the circulation of income. There is also viewed the rate of economic growth as given. With stable saving propensities and the rate of investment determined by the exogenous growth rate, only the distribution of income could correct to make sure equality between investment and savings. This meant that the rate of growth determined how income is distributed between capitalists and workers. In particular, more rapid growth compulsory for larger savings and for this reason a higher part of income must increase to capitalists. Inequality is finally determined by the opposite special effects that machinery and education make use in that order, on the demand for and supply of trained labor, and hence on the comparative wage. He

specifies that the connection among growth and inequality is determined by the “competition among technological development and education” (Kaldor, 1956), (Pasinetti 1962), (Tinbergen 1975).

There is a trade-off among dropping inequality and promoting development. In the post- World War period, however, many East Asian economies had comparatively short levels of inequality (for countries of comparable income levels) and grew at extraordinary rates. In a quick gap in this understanding, numerous Latin American countries had extensively upper levels of inequality and grew at a portion of the normal East Asian rate. These trends encouraged a flow of interest in the connection between inequality and development, and in particular, a check of how a country’s level of income inequality predicts its successive rate of economic growth (Kaldor, 1950) and (Kuznets, 1960).

The land endowments of Latin America lent themselves to produce featuring economies of range and utilize the slave of labor (sugar cane is their first example) and thus were historically associated with high inequality. In contrast, the endowments of North America lent themselves to commodities grown on family farms (wheat being exhibited) and thus promoted the growth of a large middle class. The ES work suggests a natural instrument for inequality: the exogenous suitability of land for wheat versus sugar cane. This instrument is particularly attractive because it picks out the variation due to structural inequality rather than that due to market inequality (Engerman & Stanley, 2002).

Preceding literature is consisted on the discussion of the connection among inequality and economic growth has been calculated for an extended time, and it is still uncertain argue. There have been several opinions on all sides; that inequality does deteriorate economic growth, that inequality basically enhances the growth in the extended Period, or that they do not have any fundamental result, or that the relationship is

undecided. Inequality may obstruct economic growth during the succeeding channels: politics, insufficient capital market, and institutions. The initial channel, politics, suggests that high inequality would reason increase in redistribution which would obstruct economic growth.

Alesina et. al., (1994) tested that a high original level of inequality hinders economic development is one of the huge amounts extremely competition problem in the current literature on economic enlargement and development. Unlike much experimental growth research, hypothesis and a priori testable mechanisms have in part guided the inequality and growth literature. The most important mechanisms that researchers have anticipated have been redistributive policies, quality of institutions, and human capital. The first sign of the latest literature saw high inequality lowering growth because the poor majority would vote for redistributive slightly than growth-enhancing policies. Secondly, due to short term credit constraint, the poor will be enabled to make the long term profitable investment. Human capital accumulation will be prevented through insufficient capital markets (like education) by the poor majority.

Galor (2006) analyzed that institutions instability and political instability could cause by the income inequality which will depreciate the economic growth .Inequality could also direct to politically unbalanced institutions as authority swings reverse and forward between redistributive populist section and oligarchy-protecting traditional section.

Perotti (1996) challenged a few mechanisms evidently at work in these conclusions (e.g. He originates no confirmation for higher tax rates in more unequal societies), but did find a relationship among inequality and expansion through political instability and human capital. A challenge to this literature came from researchers who broken the panel magnitude of the data.

Benabou (1996) summarized the results of 23 current studies on the relations from inequality to growth that deal with lost variable wrong and non-linearity. These studies controlled for original situation of economic inequality, political, human rights, spending on education, generally the level of government transfers, tax rates, efficiency of credit markets, political instability and human capital, security of property rights, and provincial reproduction that the purpose to balance countries at related levels of progress and wealth. The definite results are that high primary economic inequality and little human capital are powerfully connected to slower economic growth. The hypothetical opinions that income or wealth inequality increases expectations growth usually rely on imperfect markets or assumptions that are not empirically supported.

Easterly (1997) and Alesina (1999) argued that schooling is affected by cultural fractionalization because of the complexity of different ethnic groups supportive on the type and quality of public services. They used the commodity endowment as an instrument to find the problems of middle class share and tested that higher middle class share increases the per capita income. (Forbes and Barro, (2000); Banerjee and Duflo, (2003) these authors established a zero, nonlinear, or still a positive relationship among inequality and growth and examined the several opinions which are helpful or explain the nonlinear relationship among inequality and growth. One of the most important theories suggests that the growth of capital between the rich promotes effectiveness as they are extra expected to save additional and increases their encouragement to work hard and lift up the ranking. Acemoglu, Johnson and Robinson (2005) are modern researcher and they are paying a lot of attention on the nonlinearity of the connection; that the relation is uncertain or not connected. They measured the mechanisms of inequality literature that is supportive because it allows us to check the inequality suggestion beside further

determinants of economic development that have been planned in the literature. Rajan and Zingales (2006) suggested that education and institutions have together been estimated as standard determinants of economic development, with tears in circle depending on exogenous country characteristics. They present more general arguments that the upper and educated middle part will be a selection of combination not in favor of education of the poor so as to check both large-scale improvement and erosion of the rents accruing to the already educated. These authors argue that factor endowments are the basic determinant, in their case affecting “Constituencies” for and against special policy changes. However, they do not follow the practical line of analysis in this paper. Engerman (1997) and Sokoloff (2000) advocated that structural inequality causes poor institution, small human capital investment and underdevelopment. These authors ES have also promoted an institutional mechanism in which rich leaders will hold democracy and identical rights before the law so as to defend their honored position. (e.g. Bourguignon and Verdier, (2000). Acemoglu (2005) also has a model in which the oligarchy blocks democracy to preserve its collective liberties.

Easterly (2007) mentioned and raise a question in his paper that whether the panel methods are appropriate test using high frequency data for the relationship whose mechanism seem to be long run strangeness that is practically secure over time. He used the cross country data for the prediction of agriculture endowment and fined that inequality also affects the development outcomes – institutions and schooling. Further, he explained inequality lowers the per capita income.

Overall **objectives** of my research are:

- To find out the nature of the relationship between income inequality and development.

- To investigate whether income inequality causes underdevelopment?
- To analyze the strictness of the structural inequality as compared to the market inequality.

Methodology and results

The study is used to examine the determinants of income inequality and its impact on underdevelopment from 1980 to 2012. The main objectives of this study, is to estimate that what will be the effect of income inequality, does it cause underdevelopment. Here it includes GDP (per capita) as a dependent variable, GINI is first independent variable and HDI is used as a control variable.

Table 1 Labeling of variables and sources of data

Label	Variables	Source of data
HDI	Human development index	The data are obtained from the World Development Indicators (WDI)
GINI	Income inequality	Data is taken from WDI
GDP	GDP (per capita)	World Development Indicators (WDI)

Methodological frameworks

In this study, empirical analysis was carried out by following the model

Model

$$\text{HDI} = f(\text{GINI}, \text{GDP})$$

$$\text{HDI} = \beta_0 + \beta_1 \text{GINI} + \beta_2 \text{GDP} + \mu_t$$

HDI = Human development index

GINI= Income inequality

GDP= GDP (per capita)

μ_t = error term

Long Run Equation

$$\Delta GDP = \alpha_0 + \sum_{i=1}^k \alpha_{i,t-i} GINI + \sum_{i=1}^k \chi_i HDI_{t-i} + \varepsilon_t.$$

Short Run Equation

$$\Delta GDP_t = \sum_{i=1}^m \rho_i \Delta GINI_{t-i} + \sum_{i=1}^m \tau_i \Delta HDI_{t-i} + ECM_{t-1} + \varepsilon_t \dots$$

Hypotheses of Model

- H₀: β₁= 0 GINI does not have an impact on GDP.
- H₁: β₂ ≠ 0 GINI does have an impact on GDP.
- H₀: β₁= 0 HDI does not have an impact on GDP.
- H₁: β₂ ≠ 0 HDI does have an impact on GDP.

The unit root test is used to test stationarity of variables. A quality of a statistical model of a time series whose autoregressive limitation is "one" called as unit root. Unit root is used to check the stationarity of time series data. There are different test planned by the theory for the existence of unit roots. These tests consist of Dickey and Fuller (1979), Augmented Dickey-Fuller (Dickey and Fuller, 1981), Phillips Perron test (Phillips, 1987), Perron (1988 and 1989), KPSS test (Kwiatkowski, et al, 1992). I used one main unit root tests which are ADF (Augmented Dickey-Fuller). The Augmented Dickey-Fuller test (Dickey & Fuller (1981)) is the addition of the DF tests to make sure of serial correlation in the error terms by including further lags difference terms of the dependent variable. There is another advantage of ADF test is that, it can be used for higher order auto regressive model.

Result

Variables	Results of Augmented Dickey Fuller			Stationarity
GDP	-4.703927	1%	-4.243644	At Level
		5%	-3.544284	
		10%	-3.204699	
GINI	-10.02005	1%	-4.252879	At 1 st Difference

		5%	-3.548490	
		10%	-3.207094	
HDI	-4.376654	1%	-4.252879	At 1 st difference
		5%	-3.548490	
		10%	-3.207094	

The above Table 1 show the stationarity of variables which is checked through Eviews model. These results are derived from unit root test. It applied to check the stationarity of different variables. GDP stationer at level, HDI stationer at 1st difference and GINI is also stationer at 1st difference.

Result of Model

Table 2 Variable Addition Test (OLS case)

Lagrange Statistic	Multiplier	CHSQ (3)	13.5091
Likelihood Ratio Statistic		CHSQ (3)	17.9516
F Statistic		F (3, 22)	6.0073

The above results of the variable addition test verified that their exit long run relationship between income inequality (GINI) and GDP. F-statistic shows the rejection (negative response) of null hypothesis means has no co-integration, as recommended Pesaran, et al (1999).

Table 3 Estimated Long Run Coefficients using the ARDL Approach

ARDL (2, 1, 0) selected based on Akaike Information Criterion

The dependent variable is GDP

31 observations used for estimation from 1982 to 2012

Regressor	Coefficient	Standard Error	T-Ratio	Probe
GI	-.0058611	.0022959	-2.5529	.017
HDI	.048234	.015038	3.2075	.004
C	8.1655	1.4539	5.6164	.000

The observed results of long run model are obtained by normalizing the GINI which shown in the above table. The majority of the economist shows the negative relationship between the GINI and GDP means that because of the increase in the GDP the GINI of the country decreases. Like Berkeley (University of California May 2013) He published his paper “Inequality does cause underdevelopment: Comprehensive analyses of the relationship” finds that inequality has negative effect on economic growth. William Easterly (October, 2006) also predicts that inequality negatively correlated with growth. Another economist (KRISTIN J. FORBES*) his paper “A Reassessment of the Relationship Between Inequality and Growth “conclude that income inequality has a negative relationship with economic growth. Ünay Tamgaça (June, 2014) with the investigation of his paper “Effect of inequality on growth with concern for relative deprivation” when persons are concerned about RD under this condition when higher concern for RD increases growth inequality reduces growth so due to relative deprivation the incentives are reduced to accumulate and lowers growth. According to the table of Pesaran (1997) and Pesaran *et al.* (2001) the above result shows a negative relationship between variables. The results show that one unit change in the GDP leads to change the -.0058611 units in the GINI and .048234units in HDI are statistically significant. If the calculated F- statistic is compared with the two sets of critical values and calculated F-statistic is less than the critical value, then no co-integration and we reject the null hypothesis shows that there exists long run equilibrium among the variable.

Table 4 Error Correction Representation for the Selected ARDL Model

ARDL (2, 1, 0) selected based on Akaike Information Criterion

Dependent variable is dGDP

31 observations used for estimation from 1982 to 2012

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Regressor	Coefficient	Standard Error	T-Ratio	Probe
dGDP1	.34388	.14190	2.4234	.023
d GI	097570	.021715	4.4932	.000
d HDI	-.059589	.024664	-2.4161	.023
dC	10.0877	2.6559	3.7982	.001
ecm(-1)	.80892	2.8679	-5.9132	.000

Once identifying the reality of the long - run relationship among GINI and GDP; therefore in command to establish the short-run dynamics we used the Error-Correction Model (ECM). From the above Table, elaborates the ECM model results that verify the reality of a short-run relationship among GINI and GDP in Pakistan. Error correction model (ECM) that shows the speediness of convergence which is close to concerning .80892. The value of the ECM shows that 80 % (per cent) convergence get position in one year.

R-Squared	.72822	R-Bar-Squared	.67387
S.E. of Regression	1.1743	F-stat. F(4, 26)	16.7469
Mean of dependent variable	-.065806	S.D of Dependent Variable	2.0563
Residual Sum of Squares	34.4745	Equation Log-likelihood	-45.6337
Akaike Info. Criterion	-51.6337	Schwarz Bayesian Criterion	-55.9357
DW-statistic	2.4576		

As of lower Table, elaborates the Error correction model results that verify the reality of a short-run relationship among GDP and GINI in Pakistan. The negative value of the Error correction model (ECM) value shows the speediness of .80892 convergences, and divergence show positive value mean the economy has left away from the learning begin point.

Conclusion

This paper concludes that inequality and growth has a negative relationship. The explanation is that the countries with a small

level of inequality and in which the income is very unequal distributed, experience a low rate of growth, while in the countries where there is a large percentage of average income class, the rate of growth will be higher. By using time-series data, this paper explains helpful variable analysis shows that inequality is negatively correlated with GDP (Per capita). Per capita income growth rate is also negatively and significantly correlated with inequality. HDI growth is an additional general measure of developmental outcome. This paper finds HDI growth is positively affected by inequality, using both OLS and ADF analysis. Therefore, this paper through complete analysis, finds that inequality does cause underdevelopment.

I suggest that proper government policies could reduce the economic inequality that have an uncertain effect on economic growth. Policies that decrease inequality and increase economic expansion policies that facilitate the increase in human capital, encourage the combination of immigrants, raise the female labor market contribution or decrease tax expenditures. Policies that generate a trade-off among inequality and economic growth contain direct interventions in the labor market such the legal expansion of combined wage agreements or reduced employment security for short-term employees. Policies that have an uncertain effect on inequality and economic growth include least wage levels and the level of unemployment profits. The Government should apply structural adjustments in the areas of education, immigration improvement, and tax reform to reduce inequality and increase economic growth. I also suggest that,

- ✓ **"Flat Taxes."** By increasing flat taxes on the foundation and center while decreasing them on the top, the "flat tax" plan redistributes the national income upwards. Making tax burdens "flatter" as part of a development to increase in the general tax level can be necessary provided surplus revenue is covered into transfers.

- ✓ **Eliminating Capital Taxes.** The entire schedule of taxes that fall almost completely on the super-rich, including taxes on capital gains, dividends, interest, and huge gifts. Such a reform would be a huge good deal to the rich.
- ✓ **Civil rights.** The Govt. should provide civil rights as well as job opportunities for poor people. To balance the budget while reducing the overall tax level.

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