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Farm Sector and Economic Disparity: A Cross-country Analysis

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Abstract: The study of income distribution plays significant role in balancing the economic, social and political scenarios of a nation. The country-wise analysis of income distribution data indicated that despite distinct peculiarities of various economies, the rate of economic progress is bound to widen the economic gap and despite stringent fiscal measures, it is often impossible to revert back to the original and well-matched level of economic dispersion. As a consequence of economic growth, the farm sector due to inbuilt slow growth normally gets squeezed and outflow of quality resources is bound to happen. Yet the upkeep of agricultural sector exerts positive effect in normalizing the income disparity. Therefore, poorer nations with high incidence of poverty came out to be more egalitarian.

Keywords: Economic disparity, Growth, Farm sector, Gini Ratio, Employment, Investment

Introduction

The social unrest and political turbulences within the country have been mainly due to the widening of economic gap and such disturbances leave behind the trail not only in the country itself but elsewhere on the globe as well. In the dynamic world, the developments in terms of technological improvements, infrastructure developments, policy measures etc in the economy often take place which sometimes drastically effect the economic distribution directly or indirectly. As a consequence of such a change in economic disparity, the impacts also get reflected in the aggregate economic parameters such as national income, savings, investment pattern, employment scenario, price fluctuations, market sharing etc. At times, the direct consequences get alarming when the poorer sections remain derived even of food and other basic necessities of life. The subject of income inequalities have been widely deliberated from various angles at national and international levels. Often inter-country comparisons of economic disparities are made which loses its relevance due to the fact that there exist wide variations in purchasing power and tolerance levels apart from a variety of other factors. Yet intra-country inter-regional and personal income disparity; and its impact on quality of life are of still greater importance.

The divergence of economic gap can be related to diversity in availability and exploitation of natural resources, human factor development, direction of investments, market explorations etc. The recent data indicates that most of the lagging economies have shown tendency to grow faster than developed ones and, hence, for their levels of income is on a convergent path. The present paper focuses on verification of these two derivations through secondary cross country data available in the World Bank Reports and explores possible determinants of it.

Methodology

The data compiled in the World Bank Reports of 2012 on country-wise socio-economic parameters were taken. The analysis on cross-country cross sectional data obviously suffers from certain limitations because of variations in the structure of the economies, rate and stage of progress, potential resources available, inbuilt socio-economic characteristics etc but does provide a fairly good idea on the objectives laid down. In all 132 countries representing different continents and subcontinents were taken for the analysis. However, lack of comprehensive and reliable data on the parameters was another hurdle hindering the inclusion of all countries in the analysis and thus some observations had to be left out.

Review of some relevant studies

Some researchers have made efforts to study the various economies with a view to bring out some commonalities in behaviour of income distribution and causes of such tendencies. In the pioneering work, two most significant hypotheses put forth by Simon Kuznets (3) include; firstly, the growth process improves the national income but lands the economies in higher economic disparities. After attaining a certain high level of economic gap, it starts narrowing down, making the overall impact on inequalities as inverted U-shaped. Secondly, more egalitarian picture is visualized in economies dominated by agricultural sector and vice versa. The second hypothesis appears to be almost a corollary of first one because normally, the agricultural sector automatically gets contracted with the economic growth of the country.

From the estimates, it is clear that the percent population in poverty on the globe is diminishing faster than in terms of absolute number of the poor. Such population was 52% in 1981, 20% in 2010 and further decelerated to 12.4% in 2014. But the absolute number of poor declined merely by almost half i.e. from 1.94 billion to about 1 billion during the past 35 years owing to faster growth rate of population particularly in the already poverty ridden areas of South Asia and Sub-Saharan Africa (5)

Thomas Piketty (6) argued that widening economic disparity is an inevitable phenomenon of free market capitalism when the rate of return to capital is faster than the overall growth of the economy. Neoclassical school of thought believes that it is due to variation in the productivity pattern of different groups of workers and between highly paid and low paid professionals. Marxian economists attribute disparity to capitalism as well as to rising job automation conflicting with wage labour system. However, Palma (5) refuted the existence of Kuznets U-shaped inequality curve on the pretext that low and middle income countries have income distribution similar to middle income countries (other than Latin America and Southern Africa). Around 80% of the world population was stated to live in countries with Gini Ratio of about 40.

Economic differences between rich and poor countries are considerable (1). A study by the World Institute for Development Economics Research at United Nations University reports that the richest 1% of adults alone owned 40% of global assets in the year 2000, and that the richest 10% of adults accounted for 85% of the world total assets. The bottom half of the world adult population owned barely 1% of global wealth. In terms of income, in 2005, 43% of the world population (3.14 billion people) had an income of less than US$2.5/day and 21.5% of the world population (1.4 billion people) had an income of less than US$1.25/day. According to current research, global income inequality peaked approximately in the 1970s when world income was distributed bi-modally into "rich" and "poor" countries with little overlap. Since then inequality have been rapidly decreasing, and this trend seems to be accelerating. Income distribution is now unimodal, with most people living in middle-income countries (4).

Economic growth and disparity

The Kuznets' basic argument is that economic inequality depends upon the level of development. This is indication of increasing economic inequality due to increase in income or high income countries show higher inequality. However, the inference drawn from the cross country data brings out deceleration in Gini coefficient as we move from low income to middle income levels but it slightly increases in higher income ranges. As may be viewed from Fig 1, U-shaped curve depicted against the established inverted U-shape nullifies the Kuznets' hypothesis. To further visualize the relationship between Gini coefficient and mean income level of different countries, polynomial regression curve was chosen to be most appropriate and gave out the following equation.

$$Y=44.437-0.412X+0.003X2 \quad (R2=0.221)$$

Therefore, variation in the country-wise income level explains almost 22% of income disparity. Further, every successive increase in income by US$1000 leads to decline in Gini coefficient by about 0.41% with a minor increase at later stages of economic growth. The data were split into three equal numbers of countries on the basis of per capita income. The average Gini ratio worked out to 42.35, 44.66 and 34.72 per cent for low income, middle income and high income countries respectively (Table 1). Thus the growing economies in initial stage of development are more cautious about the aspect and make efforts to redistribute the gains specifically targeting the poor through fiscal policies.

Role of Agricultural sector

Agricultural sector plays an important role as it employs about 20% of work force of the world but the contribution to GDP by this sector is only 6% due to its inbuilt slow growth. Based on this statistics, the average personal income in the non-farm sector is more than 8 times that of farm sector. Higher dependence on this sector would mean slow economic growth with vast majority with low but equitable economic status. In agriculture based economies, land being the critical resource, its distribution policies makes the economy more egalitarian. As more people move out of labour intensive farm sector and get engaged in secondary and tertiary sectors, high variation in return to capital, opportunities and profit shares in such diverse occupations, the area under Lorenz curve swells on. Table 1 further reveals the fact that contribution of farm sector is inversely related to per capita income of the economy. In case of the low income, middle income and high income countries the average contribution of agricultural sector to the national income was estimated to 27.73, 10.48 and 5.39 per cent respectively.

Both the hypotheses indicated by Kuznets have a common initial base because contribution of farm sector and income level is inversely associated (r= -0.46). Conversely, growth rate of economy is positively linked to the role of agriculture and with the forwarding of growth process economies tend to shift from farm sector to secondary and tertiary sectors.

Again an effort was made to observe graphically the impact of size of agricultural sector on income disparity. Fig 2 clearly depicts that economies with low contribution of agricultural sector in the national income were clustered around the high Gini coefficient and vice versa. Gini ratio (Y) regressed against per cent contribution of agriculture gave a linear negatively sloping trend. The contribution of this slow growing sector had about 22.5% role in decelerating the income inequality.

Determinants of disparity

There are many reasons for economic inequality within a society, particularly the application of law of inheritance of property and low return to labour as compared to capital and entrepreneurship have cumulative effect of concentration of economic power in the hands of a few. Recent growth in overall income inequality has been driven mostly by increasing inequality in wages and salaries. Widening economic disparity is an inevitable phenomenon of free market capitalism when the rate of return of capital is greater than the rate of growth of the economy6. The other factors thought to impact economic inequality include globalization and liberalization, technological changes, policy reforms, taxation structure, discrimination amongst social groups and natural ability. Labour market is another important dominant cause of economic disparity. The intensity of unemployment problem in the economy in terms of size of population not finding suitable employment is reported to stay on agriculture, rendering them poorer.

Some possible determining factors of income inequality were regressed against Gini Ratio. The parameters considered as determinants of income disparity were tested for multicollearity problem and it was minimized by dropping and merging together some variables. Apart from average income and contribution of farm sector; the level of poverty (%) and growth rate of economy (%) also came out to be significantly affecting the income disparity (Table 2). Thus the economic growth appears to have accentuated the disparity while poorer economies have witnessed lesser of it. The contribution of farm sector also showed negative association with income disparity. Poverty ratio too attributed to slacken the cross-country income inequality.

Conclusion

To sum up, the inter-country analysis indicated that despite distinct peculiarities of different economies on the globe, the higher level the income and the rates of economic progress are bound to widen the economic gap. In spite of progressive taxation policies, it is rather impossible to revert back to the original level. As a consequence of economic growth, the farm sector would normally get squeezed on due to inbuilt slow growth but has positive effect on normalizing the income disparity. Poorer nations with high rate of poverty also are more egalitarian.

Table 1: Mean and range values of Gini Ratio and associated factors

Countries	*Per capita income (US$)*	*Gini Ratio (%)*	*Contribution of farm sector in National Income*	*Growth rate of economy*	*Unemployment rate (%)*	*Investment rate*
Low income	1095	42.35	27.73	5.26	5.19	5.65
Middle income	5687	44.66	10.48	3.49	0.45	5.43
High income	33931	34.72	5.39	4.40	0.73	1.82

Table 2: Results of Linear Regression Analysis, Gini Ratio regressed against some determinants

Parameter	*Regression coefficient*	*Standard error*	*t-value*
Intercept	41.5769	1.5945	26.0744
Mean per cap Income (US$/ annum)	-0.0002	0.00004	-3.5313
Poverty in the economy (%)	0.14401	0.04882	2.9496
Contribution of agricultural sector (%)	-0.1444	0.0834	-1.7343
Growth rate of economy (%)	-0.3015	0.0842	-3.5804

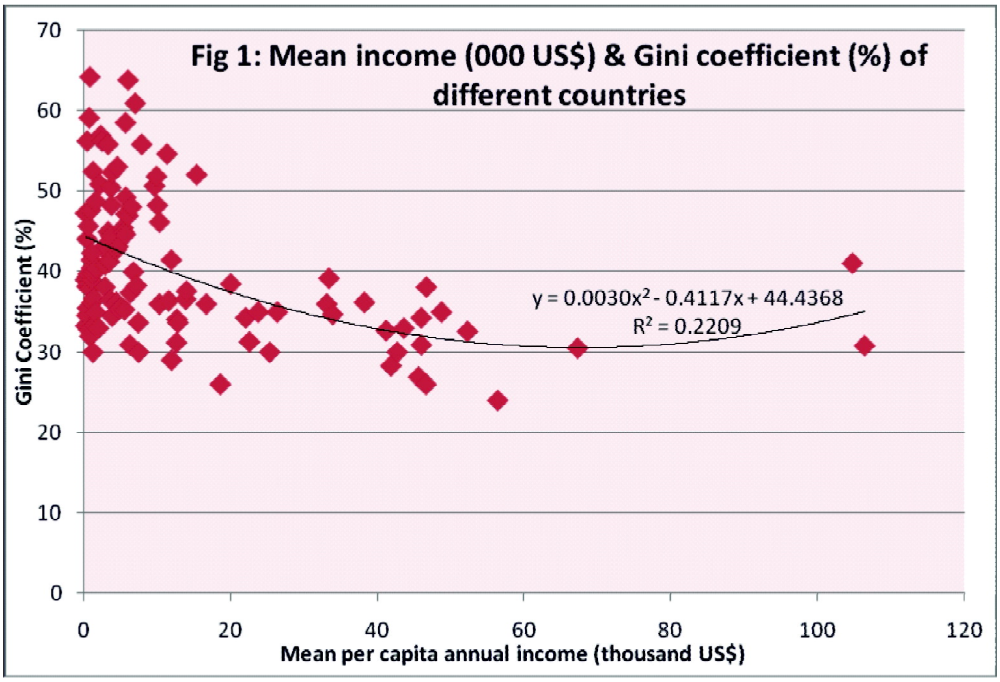
Fig 1: Mean income (000 US$) & Gini coefficient (%) of different countries
y = 0.0030x² - 0.4117x + 44.4368
R² = 0.2209
Gini Coefficient (%)
Mean per capita annual income (thousand US$)
0
10
20
30
40
50
60
70
0
20
40
60
80
100
120

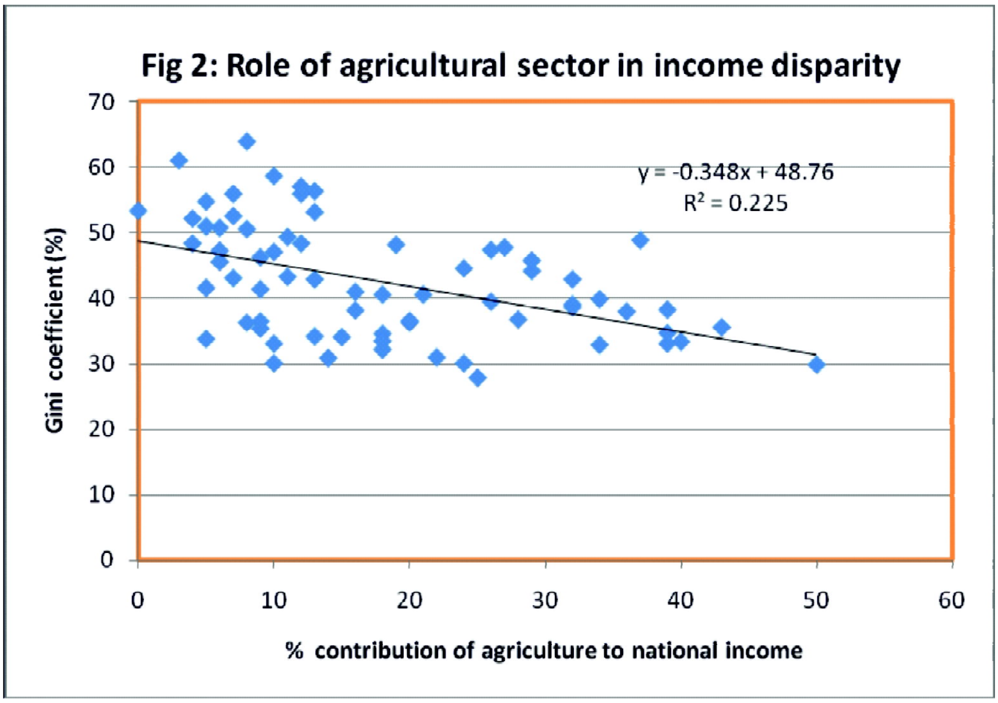
Fig 2: Role of agricultural sector in income disparity
y = -0.348x + 48.76
R² = 0.225
Gini coefficient (%)
% contribution of agriculture to national income
0
10
20
30
40
50
60
70
0
10
20
30
40
50
60

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