Impact of Economic Growth on Income Inequality:

A Regional Perspective

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I. Introduction:

Egalitarianism refers to the doctrine of the equality of mankind and the desirability of political, economic and social equality. In this paper, we are going to refer to the concept of economic equality. 'Economic inequality refers to the contrasts between the economic conditions of different people or different groups' (Champernowne and Cowell, 1998). The authors suggest that since income is the condition that is considered most often and the groups are the people who lie on different ranges of the income distribution, income inequality is the most familiar indicator of economic inequality.

Income inequality has always existed. Even though efforts have been made at all levels, local, national and global, income inequality has become more acute. One important characteristic of income inequality has been that in almost every economic system, it seems to affect the minorities more than the others. This is the same in the case of political and social inequality, and surely all the three forms of inequalities are intertwined.

Growth affects not only economic structure like the relative importance of sectors, labour skills, remuneration of factors, and the size of the public sector, but also the whole social structure, that is the relative weight of socio-economic groups or the way in which individuals define themselves with respect to the rest of the society (Bourguignon, 2004). An important factor that can affect the impact of economic growth on social structure is by affecting the distribution of income among the populace. However, an

important parameter in the degree of the impact could be the location of the populace. For example, economic growth, say brought about by education could result in higher returns for the urban population who have access to jobs requiring higher skills than the rural population who are mostly engaged in agricultural activities learnt from their forefathers. Also, economic growth brought about by explosion of the service sector may not have as deep an effect on the rural population, especially those settled in the poorest and underdeveloped belts of the country, as on the urban population. Thus, the location of the population could be an important parameter in determining how economic growth affects income inequality.

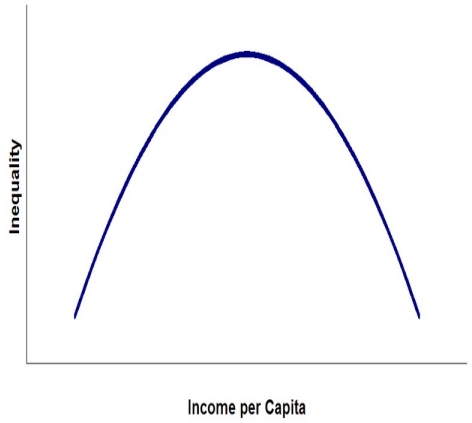
This paper aims to show how location plays an important role in explaining the heterogeneity in the impact of economic growth on income inequality in the US counties.

II. Previous Research

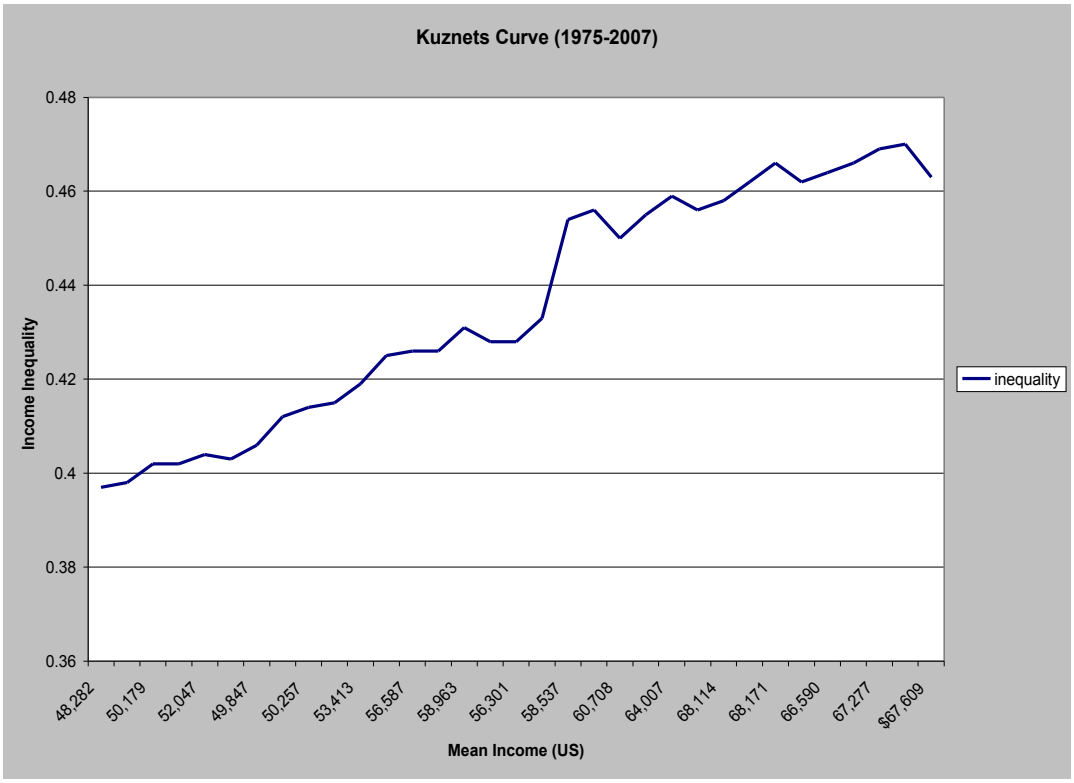
Theory shows that income inequality is a condition that prevails along with economic growth. According to the utilitarian view, income inequality must exist along with economic growth in order to maximize social welfare. This is in sharp contrast to the egalitarian view according to which all members of the society should have equal access to all economic resources in terms of economic power, wealth and contribution.

According to Gottschalk and Smeeding (1997), the U.S. income distribution was viewed as one of the great constants of economics. However, the constancy of income inequality changed when the labour market earnings in the U.S. began to rise. Earnings grew with a stable earnings distribution until around 1973 and this was followed by a rapid increase in earnings inequality around a stagnant median starting in 1979 (Levy and

Murnane, 1992). The earnings inequality continued to rise in the 1990s and Harris et al (1986) call this the 'great U-turn', where trend towards a growing income inequality occurred after a period of stability. This was a contrasting view to the Kuznets hypothesis which suggests that income inequality follows an inverted U-shaped curve. One difference between the scenario that Kuznets described and the present economic growth is noted by Partridge et al (1996). According to Kuznets, the manufacturing sector was the main driver of the economic growth whereas the modern day economic growth is being spear-headed by the services industry. Thus the whole premise is different.



The Kuznets Curve



The Kuznets curve in the above figure shows a positive relationship between mean income and income inequality the United States between 1975 and 2007.

Fallah and Partridge (2007) categorizes the three approaches that explain how inequality harms growth. While the political economy approach hypothesizes that in unequal societies, the median voter favours policies that redistribute wealth from the rich to the poor (Alesina and Rodrick, 1994, Persson and Tabellini, 1994), a second approach suggests that inequality retards growth by encouraging social conflicts (Alesina and Perotti, 1994, Benhabib and Rustichini, 1996). The imperfect capital market hypothesis suggests that since inequality is associated with credit barriers, it reduces the ability of the poorer classes to invest in physical and human capital (Banerjee and Newman, 1991, Aghion and Bolton, 1992). Fallah and Partridge (2007) shows that a positive linkage exists between inequality and

growth in the metropolitan areas, a negative linkage exists in the non-metropolitan areas. The explanation given is that in the urban areas, agglomeration economy and specialization of labour play a major role in attracting high-skilled labour into the urban areas, and hence lead to polarization of the wages whereas in the rural areas, presence of more intimate personal relationships and lack of anonymity results in inequality being more personal and hence weakens social cohesion, and in turn economic growth.

While Bartik (1994) shows that economic growth disproportionately benefits less-skilled worker, which reduces inequality, other studies by Blank and Card (1989), Cutler and Katz (1991) and Pasrtridge et. al (1996) are less sanguine about the ability of economic growth to reduce income inequality. Levernier, Partridge and Rickman (1998) find out that central-city metropolitan counties and single-county metropolitan counties have more family income inequality that non-metropolitan and suburban counties. This paper also shows that industrial restructuring directly affects income inequality.

Most of the research dealing with the inequality-growth relationship has either looked at the impact of inequality on economic growth (Fallah and Partridge, 2007) or the impact of various socio-economic variables on inequality. Though there has been some research on finding out the causality between economic growth and wage inequality, research assessing whether economic growth affects income inequality, have been few, except the one by Levernier, et al. To my knowledge, there have been no study looking at the spatial impact of economic growth on income inequality using US county-data. The aim of this paper is to see how economic growth affects income inequality. Does improved economic growth lead to a more redistributive system of social welfare or does the

polarization become more acute? Does the impact of economic growth on income inequality differ between metropolitan and non-metropolitan areas? Does inequality vary depending on the nature of the agglomeration or the demographic composition of a region? This paper intends to use the county-data from 48 counties as used in the paper by Levernier, Partridge and Rickman in finding the effect of economic growth on income inequality. In addition to this, the paper aims to look at the presence of heterogeneity in the impact of economic growth on income inequality between urban, rural counties, as well as the Appalachian counties and the Mississippi Delta counties. The paper also aims to find out the spatial impact of economic growth on income inequality of the neighbouring counties.

III. The empirical model

The empirical equation is:

$$Gini_{c\ 2000} = \rho_1 WGini_{c2000} + \rho_2 WG_{c2000} + \alpha G_{c1990} + \beta Edu_{c1990} + \gamma POP_{c1990} + \delta LAB_{c1990} + \lambda Immig_{c1990} + \mu Str_{c1990} + \sigma_s + \sigma_{1990} + \varepsilon$$

where,

Gini denotes the Gini coefficient, ρ denotes the spatial autoregressive parameter, WGini denotes the spatially lagged Gini coefficient (dependant variable) for weight matrix W, G denotes growth rate of per capita income; WG denotes the spatially lagged Growth coefficient; Edu denotes educational attainment; POP denotes the vector of population variables, such as population density, proportion of urban and rural population, population proportions of different ethnic groups; LAB denotes labour market variables, such as per capita employment and unemployment, total labour force, sectoral sizes of labour force;

Immig denotes international immigration; Str denotes the structural change index, σ_s denotes state fixed effects and σ_{1990} denotes time fixed effects. The subscripts c, s and y denotes county, state and year, respectively.

The literature review suggests that the basic factors of income inequality are higher returns to education, rise in technology, structural changes, shifts in labour market and immigration. There is also evidence of racial differences with regards to income inequality in the U.S. Counties with higher proportions of ethnic minority populations have higher income inequality than other counties, especially where structural change has taken place (Levernier, Partridge and Rickman, 2000, Gallet and Gallet, 2004).

Structural change affects income inequality, at least in the short run (Levernier, Partridge and Rickman, 1998). Educational attainment is an important factor in reducing poverty, though the degree of its impact varies between metropolitan and non-metropolitan areas (Levernier, Partridge and Rickman, 2000, Levernier, 2003). Education is also an important correlate of rural prosperity (Isserman, Feser and Warren, 2007).

Income inequality is often attributed to the higher returns of education (Dunbar, 2005). An analysis of a panel of states show that income inequality increases within narrowly defined education-experience categories (Partridge, Rickman and Levernier, 1996).

It is also true that educational attainment among the ethnic minorities is lower than the rest of the population. Thus, the ethnic minorities do not accrue the higher returns of education. As a result, they have a lower bargaining power in the labour market. Due to structural changes, shifts in the labour market and immigration, the ethnic minorities are more susceptible to displacement than others.

Poverty rates vary across geographic areas because of differences in both person-specific and place-specific characteristics (Levernier, Partridge and Rickman, 2000). The authors find out that skills mismatches was important factor resulting in poverty and that this was especially high in the non-metropolitan areas where the geographic isolation of the residents were much higher than elsewhere. Research also shows that wage inequality has a great geographical dimension to it (Korpi, 2008). Isserman, Feser and Warren (2007) however show that geographical factors are less important in explaining why some counties are more prosperous than the others. It might be interesting to see whether and how regional differences play its role in affecting income inequality.

One of the main focuses of the paper is to analyse whether the impact of economic growth on income inequality varies between rural and urban areas. Population density and international immigration could be the two main factors that lead to the difference between the rural and the urban areas. Higher population density and international immigration may lead to greater competition for jobs, especially the low-skilled ones and hence lead to poorer access to income-earning opportunities.

IV. Data

The analysis for this paper will be done at the county-level. For the dependant variable and all explanatory variables except the per capita income, a panel will be constructed using county-level data for two decades, 1990 and 2000. The gini coefficient will be calculated using the income data from the U.S. Census Bureau. Data on per capita income, educational attainment, population density and international migration can be obtained from the U.S. Census Bureau. The ethnic diversity measure will be calculated

using the population data from the U.S. Census Bureau. The structural change index will be calculated by using data from the Bureau of Economic Analysis, Regional Economic Information System.

In order to test for heterogeneity in the impact of economic growth on income inequality, the data is categorized according based on location of the counties. The four separate samples are urban, rural, the Appalachian region and the Mississippi Delta region. The urban sample will consist of two sub-samples, the large metros (with population greater than half a million) and the small metros (with population lesser than half a million). The rural sample will constitute of the non-metro counties. The other two categories are the two poorest regions of the country, the Appalachian region and the Mississippi delta. While the former constitutes of the poorest counties with very poor income generating processes in the recent past, the latter constitutes of counties which have a high concentration of ethnic minorities and have acute economic and ecological problems. The aim breaking up the data according to the regions the counties belong to is to see whether location has a role to play in the impact of economic growth on income inequality.

V. Discussion:

The aim of the paper is to find out whether per capita income (representing economic growth) has an impact on the gini coefficient (representing income inequality), and to show whether this impact varies between rural and urban areas. The expected results are as follows. Economic growth may have a negative impact on income inequality since economic growth is often positively associated with higher investments, higher

employment-generating processes and higher employment, hence giving greater access to jobs and income to a larger number of people. The degree of the impact may vary between rural and urban areas because of the following reasons. A higher population density in the urban area may lead to greater job competition and hence lead to lower access to jobs than in rural areas. International immigration is usually higher in urban areas than in rural areas. The greater influx of immigrants, as well as often seen, the willingness of the immigrants to work at lower wages may lead to lower access to jobs for the locals. This should hold true for the low-skilled jobs. For the high-skilled jobs on the other hand, educational attainment of the people will play a more important role on their ability to get jobs in the urban areas than in the rural areas. However, growth may reduce income inequality in the urban areas because higher population density results in more personal contacts, better networking and access to information, and hence more opportunities to access more and better jobs.

If the results show that economic growth has a negative impact on income inequality, it will be possible to comment on the causality of the inequality-growth relationship. More so, if it is seen that economic growth has a stronger impact in decreasing income inequality in the urban areas than in the rural areas, it will show that the higher wages and more diverse job opportunities in the urban areas have a greater spillover effect than in the rural areas. The policy implication such a result may have is that higher investments will have to be made in educational and vocational training in order to generate a stream of skilled labourers, which in turn will add to economic growth and thus will lead to lower income inequality and better social cohesion.

The regression that will be run on four separate parts of the data is to test for the presence of heterogeneity in the impact of economic growth on income inequality.

(This is a working paper in progress and we are currently in the process of analyzing the data. We are hopeful that we will be able to present results at the meeting.)