Is Urban Economic Growth Inclusive in India?

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Abstract:

This paper measures the overall inclusive growth of a city by considering changing trends in the key economic variables based on 'Borda ranking' and establishes a relationship between city economic growth and overall city inclusive growth. By using data of 52 large cities in India, this paper finds that higher urban economic growth is associated with an increase in urban inequality, a reduction in urban poverty, and a lower level of overall inclusive growth of a city.

Key Words: Economic Growth, Poverty, Inequality, Inclusive Growth, Urban India.

JEL Classification: R11, D63, O15

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1. Introduction

Urban India has been experiencing increasing economic growth and rising income inequality with higher poverty ratio. For instance, the share of urban net domestic product (NDP) in total NDP increased from 41.09 per cent in 1980-81 to 52.02 per cent in 2004-05, accounted for about 6.2 per cent growth rate of urban NDP from 1970-71 to 2004-05 at constant prices (1999-00). On the other hand, as per 66th Round of National Sample Survey (NSS) of 2009-10 on consumer expenditure, the urban consumption inequality measured by Gini coefficient is about 0.39 and urban poverty head count ratio is 20.9 percent. These inequality and poverty figures suggest that, in spite of higher urban economic growth a large part of urban dwellers is still experiencing inadequate improvement in their standard of living. Thus, a reduction in consumption inequality and poverty between rural and urban India as well as within urban India is an important agenda of the ongoing XI Five Year Plan (2007-12) and in the Approach to the Twelfth Five Year Plan (2012-17) by emphasizing on the following key issues: i) to achieve high economic growth, ii) poverty reduction, iii) to add demographic dividend to the growth potential, iv) to increase agriculture growth, v) to increase total health expenditure, vi) improvement of higher education, vii) to increase expenditure in infrastructure, and viii) efficient use of energy.

How to define inclusive growth is a buzz word that has been discussed in recent development economics.[1] In this context, Ali and Zhuang (2007) argue that inclusive growth is growth that not only creates new economic opportunities but also the one that ensures equal access to the opportunities created for all segments of society, including the disadvantaged and the marginalized. This definition of inclusive growth is very close to the concept of pro-poor growth advocated by the OECD-Development Assistance Committee (DAC).[2]

[1] A details conceptual discussion on inclusive growth is available in Rauniyar and Kanbur (2010) and Klasen (2010).

[2] There are different concepts of pro-poor growth are given by different researchers. For instance, White and Anderson (2000) suggest that pro-poor growth as a situation where poor people enjoy higher income growth than other segments of society. Kakwani and Pernia (2000) suggested that pro-poor growth calls not only for poverty reduction, but more equitable distribution of income. Ravallion and Chen (2003) simply suggest that any growth that cuts poverty deserves to be called pro-poor.

Ali and Son (2007) define that inclusive growth depends on average opportunities available to the population and how opportunities are shared among the population. On the other hand, Ali (2007) emphasizes that the inclusive growth strategy rests on three anchors, i.e., expanding opportunity, broadening access to opportunity, and social protection that acts as a safety net and a springboard. Asian Development Bank (2007) defines inclusive growth strategy by giving importance of creation of opportunities and expansion of access to it. Rauniyar and Kanbur (2010) suggested that inclusive growth strategy should associate with reduction of inequality.

In the context of measuring inclusive growth, Ali and Son (2007) applied their new inclusive growth framework to the Philippines by using micro unit level data on Annual Poverty Indicators Survey data for 1998 and 2004. In the analysis to measure inclusive growth they used two indicators: access to primary and secondary education and access to health services. The main conclusion is that access to health and education becomes more inequitable from 1998 to 2004. In finding relationship between economic growth and poverty alleviation, using province level data for Kazakhistan, Agrawal (2007) finds that higher growth rates are likely to associate with more rapid reduction in poverty. Son (2007) examines the relationship between economic growth, income distribution, and poverty for Asian Development Bank (ADB) Developing Member Countries. The result indicates greater effectiveness of pro-poor policies in countries with higher incomes than in countries with lower incomes and they suggest that inequality-reducing pro-poor policies would be more effective policy, in countries where high inequality persists. In measuring income inequality in the People's Republic of China at the national, regional, and provincial levels, Lin et al. (2008) find that income inequality increased significantly during the last two decades. The major sources of the increases in inequality were found to be within urban inequality and between urban and rural inequality.

In the context of India, Unni and Raveendran (2007) find that employment growth slowed slightly in 1993-2004, as compared to 1983-1993; the slowdown is quite noticeable in rural India. They also find that employment has grown in urban areas over the past decade mainly in self-employment. However, there has been a decline in the real wage rates of regular salaried workers and urban casual workers. Tilak's (2007) paper critically looks at the approach to the development of education outlined in the Approach to the Eleventh Five-Year Plan and highlights the weaknesses and the continuation of the big policy vacuum. Most importantly,

Suryanarayana (2008) paper attempts to define the concept and aims at developing measures of inclusion. Using the broad-based growth process in terms of mean-based averages of income and absolute-norm based measures of deprivation, the tentative estimates indicate that the growth process between 1993-94 and 2004-05 bypassed the majority and was not inclusive. Thorat and Dubey (2012) examines the changes in poverty incidence and monthly per capita expenditure in India using the National Sample Survey's unit record data of three rounds, 1993-94, 2004-05 and 2009-10. They find that some groups benefited more than the others from poverty reduction strategies. In addition, inequality has also begun to adversely affect poverty reduction, particularly in the urban sector. In the context of urban inclusive growth, Kundu and Samanta (2011) analyse the present urban development policies (for instance, Jawaharlal Nehru National Urban Renewal Mission was launched) with a focus on inclusive development of urban centres. Moreover, Jayaraj and Subramanian (2012) suggest that a little evidence of inclusiveness in India's consumption growth experience over the last four decades or so.

In essence, the above cited review of Indian studies single out that higher economic growth bypasses the majority, especially, marginalized group in terms of poverty reduction and employment creation which leads to lower inclusive growth process in India. An important gap still exists in the measurement of urban inclusive growth. This paper attempts to fill the gap by measuring urban inclusive growth via constructing a composite index based on 'Borda ranking' to measure the overall inclusive growth of a city with emphasizing on the changing trends in the key economic variables. Moreover, this paper finds a relationship between city economic growth and overall city inclusive growth, which helps offer empirical evidence of increase in urban inequality and reduction in urban poverty and lower level of overall inclusive growth of a city.

Rest of the paper organized as follows. Section 2 presents the methodological issues regarding the measurement of overall inclusive growth of a city and to find the relationship between city economic growth and overall city inclusive growth. Section 3 outlines the measurement of variables with data sources used for the analysis. Section 4 highlights the details of estimated results followed by a summary of major conclusions and implications in Section 5.

2. Methodology

2.1 Composite Index of overall inclusive growth of a city : Proposed approach for the measurement of urban inclusive growth

The existing definitions of inclusive growth (discussed in section 1) clearly indicate that there is no clear cut specific definition for measuring inclusive growth. For that reason, we consider the changing trends of the 20 economic variables belong to seven major economic variables: (i) Economic growth as reflected in city - wise per capita income growth; (ii) Reduction in poverty (measured by poverty head count ratio, poverty gap index, and squared poverty gap index) as reflected by city-wise poverty ratio; (iii) Reduction in inequality (measured by Gini coefficient) as reflected in city - wise inequality level; (iv) Access to (or creation of) opportunities as reflected in city - wise employment (measured by usually self employed, regular/salaried employed, and casual labour employee) and unemployment situation (measured by unemployed and not in labour force persons) and (v) To capture the degree of equitable distribution of income, city - wise standard of living index divided into low, medium, and high standard of living index and educational situation (measured by primary and upper primary gross enrollment ratio) are proxied. The key motivation behind considering these 20 variables is to capture the changing trends of the seven major economic variables in more precisely. In addition, composite inclusive index (CII) for 'marginalized group' and 'other group' are also computed, separately, as strategies of inclusive growth mainly focus on improvements in wellbeing of 'marginalized group'.[3, 4]

To measure overall inclusive growth of a city, a CII based on 'Borda ranking' is constructed. 'Borda Rank' follows the methodology of 'Borda Rule' This rule provides a method of rank-order scoring, the procedure being to give each alternative a point equal to its rank in each criterion of ranking, and adding each alternative's scores to obtain its aggregate score, and then ranking alternatives on the basis of their aggregate scores.[5] The Borda score focuses only on ordinal information.[6] To make bias free measurement, equal weights are given to all the variables.

[3] Our measure of composite inclusive index could be considered as overall measure of well being, as it measures different dimension of standard of life.

[4] With the limited information, only Poverty (i.e., poverty head count ratio, poverty gap index, and squared poverty gap index), inequality (i.e., Gini coefficient), employment (i.e., usually self employed, regular/salaried employed, casual labour employee) and unemployment (unemployed and not in labour force persons) variables are disaggregated into 'Marginalized group' and 'others group'.

[5] This approach has been advocated by Dasgupta (1993 and 2001) in the context of international comparisons of well-being and much of the same approach to ranking has been used in the context of gender inequality among Indian states.

[6] The strengths and limitations of the Borda Rule have been investigated by Goodman and Markowitz (1952) and Fine and Fine (1974).

The CII based on the following calculation:

$$CII_j = \frac{\sum_{i=1}^{20} r_{ij}}{20} \qquad \text{---------- (1)}$$

where r stands as the rank of the cities; i = 1,2,……., 20 are the variables used for measurement of city wise inclusive growth; j = 1,2,……., 52, are the cities used in the analysis.

Table 1 explains the definitions of the 20 variables which are used in equation (1) to measure the city wise composite inclusive index. Based on the variable definition a higher (or lower) the value of CII indicates a lower (or higher) level of inclusive growth.

The most inclusive city is a city whose has the lowest values as per the CII_j , as cities are ranked in the following order:

Min { CII_1, CII_2, ……, CII_{52} }

Or, ($CII_1 < CII_2 <$, ……$< CII_{52}$)

2.2 The relationship between city inclusive growth and city economic growth

To establish the relationship between city inclusive growth and city economic growth rate we define city inclusive growth in the following three ways: First, as per the score of constructed CII index, second reduction in inequality as suggested by Rauniyar and Kanbur (2010), and third reduction of poverty (or pro-poor growth rate) as in Ravallion and Chen (2003). Ravallion and Chen (2003) proposed measure of pro-poor growth based on the Watts index and is derived from a "growth incidence curve" giving rates of growth by quantiles of the distribution of income.

The relationship between growth, inequality, and poverty are non-linear, complex, and path dependent in their dynamics. The relationship between inequality and growth has been established by Kuznet (1955).[7] However, most of the recent studies attempt to find the

[7] Kuznets (1955) was the first empirical finding of an inverted U (arch) shape relationship between growth and inequality which suggested that the inequality would increase with growth in the beginning, but will decline at higher levels of growth as the benefits of growth trickle down to lower income strata.

Table 1: Variable definitions used to calculate composite inclusive index (CII)

Vari-ables	Definitions	Measurement
Poverty		
x_1	Percentage change	Ranking (in descending order) of a city according to reduction of poverty head count ratio from 2004-05 to 2009-10.
x_2	Percentage change	Ranking (in descending order) of a city according to reduction of poverty gap index from 2004-05 to 2009-10.
x_3	Percentage change	Ranking (in descending order) of a city according to reduction of squared poverty gap index from 2004-05 to 2009-10.
Inequality		
x_4	Percentage change	Ranking (in descending order) of a city according to reduction of Gini coefficient from 2004-05 to 2009-10.
Economic Growth		
x_5	Compound annual growth rate	Ranking (in descending order) of a city according to increase in non primary real per capita District Domestic Product (DDP) from 2000-01 to 2004-05.
Education		
x_6	Percentage change	Ranking (in descending order) of a city according to increase in primary gross enrolment ratio from 2002-03 to 2008-09.
x_7	Percentage change	Ranking (in descending order) of a city according to increase in upper primary gross enrolment ratio from 2002-03 to 2008-09.
Employment		
x_8	Percentage change	Ranking (in descending order) of a city according to increase in usually self employed per 1000 distribution of male of age 15 years and above from 2004-05 to 2009-10.
x_9	Percentage change	Ranking (in descending order) of a city according to increase in usually self employed per 1000 distribution of female of age 15 years and above from 2004-05 to 2009-10.
x_{10}	Percentage change	Ranking (in descending order) of a city according to increase in usually regular wage/salaried employed per 1000 distribution of male of age 15 years and above from 2004-05 to 2009-10.
x_{11}	Percentage change	Ranking (in descending order) of a city according to increase in usually regular wage/salaried employed per 1000 distribution of female of age 15 years and above from 2004-05 to 2009-10.
x_{12}	Percentage change	Ranking (in descending order) of a city according to increase in usually casual labour employee per 1000 distribution of male of age 15 years and above from 2004-05 to 2009-10.
x_{13}	Percentage change	Ranking (in descending order) of a city according to increase in usually casual labour employee per 1000 distribution of female of age 15 years and above from 2004-05 to 2009-10.
Unemployment		
x_{14}	Percentage change	Ranking (in descending order) of a city according to reduction in usually unemployed per 1000 distribution of male of age 15 years and above from 2004-05 to 2009-10.

Table 1 (Continued)

x_{15}	Percentage change	Ranking (in descending order) of a city according to reduction in usually unemployed per 1000 distribution of female of age 15 years and above from 2004-05 to 2009-10.
x_{16}	Percentage change	Ranking (in descending order) of a city according to reduction in usually not in labour force per 1000 distribution of male of age 15 years and above from 2004-05 to 2009-10.
x_{17}	Percentage change	Ranking (in descending order) of a city according to reduction in usually not in labour force per 1000 distribution of female of age 15 years and above from 2004-05 to 2009-10.
Standard of living index (SLI)		
x_{18}	Percentage change	Ranking (in descending order) city according reduction of low standard living index from 2002-04 to 2007-08.
x_{19}	Percentage change	Ranking (in descending order) city according reduction of medium standard living index from 2002-04 to 2007-08.
x_{20}	Percentage change	Ranking (in descending order) city according increase in high standard living index from 2002-04 to 2007-08.

Source: Author's compilation

Note: 1. Due to unavailability of data, city level estimation for poverty, inequality, employment and unemployment is done by considering total urban sample of a city district (i.e., the district to which the sample city is located). However, education level and standard of living index are considered for whole city district.

2. Non primary district domestic product is used as a proxy of city level output.

3. For inequality estimation we use uniform recall period (or MPCE 30), and for poverty estimation we use mixed recall period (or MPCE365). City level poverty estimation is done by considering state level (cities located in the corresponding state) urban poverty line for 2004-05 and 2009-10 as worked out by the expert group (set up by the Planning Commission of India in 2009 (GOI, 2009) headed by Professor Suresh Tendulkar.

4. The definitions of usual activity status, self employed, regular wage/salaried employee, casual wage labour, unemployed, and not in labour force, uniform recall period, and mixed recall period are derived from the definition defined by National Sample survey Organization.

6. The District Level Household and Facility Survey calculates the standard of living index by adding the following scores:

Source of drinking water: 3 for Tap (own), 2 for Tap (shared), 1 for hand pump and well, and 0 for other; Type of house: 4 for pucca, 2 for semi-pucca, and 0 for kachcha; Source of lighting: 2 for electricity, 1 for kerosene, and 0 for other; Fuel for cooking: 2 for LPG gas/electricity, 1 for kerosene and 0 for other; Toilet facility: 4 for own flush toilet, 2 for own pit toilet, 2 for shared toilet and 0 for no toilet; Ownership for items: 4 each for car and tractor, 3 each for television, telephone and motorcycle/scooter, and 2 each for fan, radio/transistor, sewing machine and bicycle. The total of the scores may vary from the lowest of 0 to maximum of 40. On the basis of total score, households are divided into three categories as

(a) Low – if total score is less than or equal to 9,

(b) Medium – if total score is greater than 9 but less than or equal to 19, and

(c) High – if total score is greater than 19.

relationship among inequality, poverty, and growth. For instance, Bourguignon (2004) argued that poverty, growth and inequality form a 'Poverty-Growth-Inequality Triangle', which suggests that poverty reduction fully determined by the rate of growth of the mean income of the population and in the distribution of income. Ravallion (1997) suggests that countries with high levels of inequality cannot rely on growth to reduce poverty.

In the context of empirical framework to estimate the interaction between growth and inequality and how those two factors in turn affect efforts to reduce poverty in the course of economic development is widely studied in Deininger and Squire (1998). Following past literatures (for instance Heshmati, 2004; Janvry and Sadoulet, 2000; Le, 2010) to establish relationship among poverty, inequality, and economic growth, we use the following specification.

$$\Delta P_0 = \alpha_0 + \alpha_1 \Delta Y + \alpha_2 P_0 + \alpha_3 I + \alpha_4 \Delta YI + \alpha_5 \Delta YP_0 + \alpha_6 CII_0 + \epsilon_1 \quad \text{---------- (2)}$$

$$\Delta I_0 = \beta_0 + \beta_1 \Delta Y + \beta_2 P_0 + \beta_3 I + \beta_4 CII_0 + \epsilon_2 \quad \text{---------- (3)}$$

$$\Delta Y = \delta_1 + \delta_2 \Delta cii + \delta_3 P_0 + \delta_4 I + \delta_5 \Delta I + \delta_6 CII_0 + \epsilon_4 \quad \text{---------- (4)}$$

where ΔP_0 : growth rate in the incidence of district urban poverty; ΔY : growth rate of per capita district income; P_0 : initial incidence of urban poverty; I : initial inequality; ΔYP_0 : initial poverty multiplied by growth rate of per capita district income; ΔYI : initial urban inequality multiplied by growth rate of per capita district income; cii_0 : initial value of composite inclusive index of a city; Δcii : growth of composite inclusive index of a city; ΔI : growth rate in the district urban inequality.

However, as equations (2), (3) and (4) are intended to estimate in a static framework the predicted signs of the coefficients of the independent variables depend on the stage of development a country is presently experiencing.

3. Definition, specification and data sources by variables

Table 2, summarizes the descriptions, measurements, and data sources of all the variables used in the OLS estimation of equation (2) to (4) and in construction of the composite city inclusive index.

Table 2: Data sources and variable measurements

Variable description	Measurements	Data source(s)
Dependent variables		
Growth rate of urban poverty	Growth rate of incidence of city district urban poverty from 2004-05 to 2009-10.	Unit level data of NSS 2004-05 and 2009-10 on consumer expenditure, NSSO, GOI.
Growth rate of urban inequality	Growth rate of city district Gini coefficients from 2004-05 to 2009-10.	Unit level data of NSS 2004-05 and 2009-10 on consumer expenditure, NSSO, GOI.
Growth rate of average per capita non primary DDP	Growth rate of city DDP from 2000-01 to 2004-05	Directorate of Economics and Statistics (DES), various State Governments, GOI.
Growth rate of mean MPCE	Growth rate of mean per capita city district MPCE from 2004-05 to 2009-10.	Unit level data of NSS 2004-05 and 2009-10 on consumer expenditure, NSSO, GOI.
Independent variables		
Initial urban poverty	Incidence of city district urban poverty in 2004-05.	Unit level data of NSS 2004-05 on consumer expenditure. NSSO, GOI.
Initial inequality	District wise Gini coefficient in 2004-05.	
Initial city inclusive index	CII_0	Addition of ranking of a city district according to percentage increase in education variables in 2002-03, employment variable in 61st Round, and high standard living index in 2002-04 and ranking of a city district according to percentage decrease in unemployment variables in 2004-05 and low and medium standard of living index in 2002-04.
Final city inclusive index	CII_1	Addition of ranking of a city district according to percentage increase in education variables in 2008-09, employment variables in 2009-10, and high standard living index in 2007-08 and ranking of a city district according to percentage decrease in unemployment variables in 2009-10 and low and medium standard of living index in 2007-08.
Growth rate of CII	Growth rate of CII_0 to CII_1	Compound annual growth rate from CII_0 to CII_1
Other variables used for construction of composite inclusive index		
Employment and unemployment	City district urban level total employment and unemployment	Unit level data of NSS 2004-05 and 2009-10 on employment and unemployment. GOI (2004-05 and 2009-10)
Primary and Upper Primary Gross Enrollment Ratio	Primary (Grades I-IV) and upper primary (Grades VI-VIII) gross enrollment ratio of the city districts.	District Information System of Education: District Report Cards published by National University of Educational Planning and Administration (NUEPA), New Delhi, and Census of India 2001.
Standard of Living Index (SLI)	Low SLI, Medium SLI, High SLI.	District Level Household and Facility Survey, 2002-04 and 2007-08, International Institute for Population Sciences, Mumbai. GOI (2002-04 and 2007-08).

Note: As initial (or final or growth rate) of city inclusive index is used as independent variables in equation (2), (3), and (4), we have excluded all the poverty, inequality, and economic growth variables (or indicators) in the construction of these CII to avoid the identification problem in econometrics.
Source: Author's compilation.

4. Results

4.1 Measurement of poverty and inequality for Urban India

Table 3 shows that all India urban inequality measured by Gini index marginally has increased from 0.38 in 2004-05 to 0.39 in 2009-10. During the same period, inequality level for mega city

Table 3: Poverty and inequality for urban India

		2004-05 (61st Round)				2009-10 (66th Round)			
		All India Urban	Large cities (52 cities	Mega cities (6 cities)	Total all India urban (except 52 cities)	All India Urban	Large cities (52 cities	Mega cities (6 cities)	Total all India urban (except 52 cities)
Gini Index	Marginalized	0.33	0.35	0.32	0.32	0.35	0.36	0.32	0.33
	Others	0.38	0.40	0.39	0.36	0.40	0.43	0.38	0.36
	Total	0.38	0.40	0.38	0.35	0.39	0.41	0.37	0.36
Headcount Index (in %)	Marginalized	34	25	8	39	28	21	8	32
	Others	16	11	6	19	12	7	3	16
	Total	26	18	7	30	21	15	5	25
Average per capita monthly income (in URP) (in Rs.)	Marginalized	837	962.9	1155.7	771.3	1438.9	1644.69	1911.3	1308.2
	Others	1306.1	1547.9	1736.8	1153.2	2245.7	2705.988	2822.8	1887.6
	Total	1052.4	1247.3	1498.6	940.3	1785.8	2132.127	2421.4	1545.7
Sample size (Persons)	Marginalized	121411	26871	5167	94540	107689	23510	5497	84146
	Others	85118	23186	8172	61932	73723	19756	7285	54000
	Total	206529	50057	13339	156472	181412	43266	12782	138146

Source: Author's calculation using NSS 61st and 66th Round unit level data on consumption expenditure survey.

Notes:

1. Marginalized Group includes Scheduled Tribes, Scheduled Castes, and Other Backward Classes.
2. Mega cities (cities with five million-plus population) as per 2001 census.
3. Poverty Lines as per the Tendulkar Methodology (GOI, 2009) are considered to calculate Poverty Head Count Ratio for 2004-05 & 2009-10.

districts slightly decreased from 0.38 to 0.37. Inequality level in respect of 52 large cities among 'other group' has increased from 0.40 to 0.43 during this period. 'Marginalized' group has the lowest level of inequality when compared to the other two groups (i.e., 'Others' and the 'total group') across all categories of cities. On the other hand, all India urban poverty measured by

head count ratio has fallen from 26 per cent in 2004-05 to 21 per cent in 2009-10. Most noticeably, mega city districts showing the lowest level of urban poverty decreased from 7 per cent to 5 per cent during this period. In particular, poverty among 'other groups' in the mega city districts has fallen sharply from 6 per cent to 3 per cent during this period. However, poverty rate for 'marginalized group' is higher than 'other groups' in comparison to size of cities. Table 3 also shows that mean per capita monthly consumption expenditure measured by uniform recall price (URP) is lower among the 'marginalized' group than others group.

4.2 Composite Index for measuring city inclusive growth

Table 4 presents the taxonomy of cities by their calculated value of CII based on our definition of inclusive growth by 'marginalized group', 'others group', and 'overall' (i.e., sum of 'marginalized group' and 'others group'). The results show that in 'overall group' the value of CII is lowest for Bhubaneswar city, which indicates the highest inclusive growth among 52 large cities (see Appendix 1 for name of the cities). On the other hand, Bareilly in 'overall group' shows the lowest inclusive growth among the 52 large cities. Among the 'marginalized' (or 'others') groups, Chandigarh (or Nashik) city has shown the highest inclusive growth, whereas, Visakhapatnam (or Maduri) has shown the lowest inclusive growth among 52 large city districts. Most interestingly, Nasik experiences the highest inclusive growth in all the three groups among 30 metro cities India. Maumbai has the lowest inclusive growth (i.e., highest CII value) in 'overall' and 'marginalized' group, while, Madurai in 'others group', has the lowest inclusive growth among 30 metro cities. Among the 6 mega cities, Kolkata (or Chennai or Bangalore) shows the lowest value of composite inclusive index which means it has had the highest inclusive growth in 'overall' (or 'marginalized' or 'other') group. Mumbai again shows the lowest inclusive growth in the all three categories among 6 mega cities in India. In addition, results also show that Lucknow (or Durg or Vijayawada) stands as 26th position in 'overall' (or 'marginalized' or 'others') according to ranking (in ascending order) of cities as per the value of CII among 52 large cities. On the other hand, Dhanbad (or Coimbatore or Bhopal) stands as 15th position in 'overall' (or 'marginalized' or 'others') group, according to ranking (in ascending order) of cities as per the value of CII among 30 metro cities.

Table 4: Overall city inclusive growth

Categories	Fifty Two Large Cities			Thirty Metro Cities			Six Mega Cities
	Top Five	Middle Five	Lowest Five	Top Five	Middle Five	Lowest Five	
Total	1.Bhubaneswar 2.Hubli-Dharwad 3.Nashik 4.Gauhati 5.Aurangabad	24.Ludhian 25.Bhiwandi 26.Lucknow 27.Delhi 28.Dhanbad	48. Aligarh 49. Allahabad 50. Gwalior 51. Mumbai 52. Bareilly	1.Nashik 2. Kochi 3. Patna 4. Kolkata 5. Kanpur	13. Lucknow 14. Delhi 15. Dhanbad 16. Indore 17. Jamsh-edpur	26. Jabalpur 27. Varanasi 28. Agra 29. Allahabad 30. Mumbai	1. Kolkata 2. Chennai 3. Bangalore 4. Delhi 5.Hyderabad 6. Mumbai
Marginalized	1.Chandigarh 2.Hubli-Dharwad 3. Bhubaneswar 4.Nashik 5. Kozhikode	24.Allahabad 25. Gwalior 26.Durg 27.Varanasii 28.Mumbai	48. Raipur 49. Hyderabad 50. Jodhpur 51. Coimbatore 52. Visakhap-atnam	1.Nashik 2. Kochi 3. Chennai 4. Meerut 5. Asansol	13. Delhi 14. Hyderabad 15.Coimbatore 16. Visakha-patnam 17. Bangalore	26. Pune 27. Bhopal 28.Allahabad 29. Varanasi 30. Mumbai	1.Chennai 2. Kolkata 3.Delhi 4.Hyderabad 5.Bangalore 6. Mumbai
Others	1.Nashik 2.Bhubaneswar 3.Hubli-Dharwad 4. Kochi 5. Patna	24.Bhopal 25. Raipur 26. Vijayaw-ada 27.Indore 28.Jalandhar	48. Tiruchira-ppalli 49. Agra 50. Mysore 51. Bareilly 52. Madurai	1.Nashik 2. Kochi 3. Patna 4. Kanpur 5. Bangalore	13. Pune 14. Dhanbad 15. Bhopal 16. Vijayawada 17. Indore	26. Meerut 27. Jaipur 28. Mumbai 29. Agra 30. Madurai	1.Bangalore 2. Kolkata 3.Delhi 4.Chennai 5. Hyderabad 6. Mumbai

Source: Author's calculation

Note: 1. Only Poverty, inequality, employment, and unemployment variables are disaggregated in 'Marginalized group' and 'others group'.

Table 5 presents the name of the first three major economic variables those have the highest average contribution (in terms of percentage) to the value of CII for top five cities in terms of highest inclusive growth rate for 'overall' categories. The ranking of the cities for the major economic variables are done by adding the ranking of cities by their respective sub variables, if they have any sub variables. For instance, the ranking of cities for poverty are based on the sum of ranks of the cities as per poverty head count ratio, poverty gap index, and squared poverty gap index. However, as inequality and economic growth have no sub variables, they alone stand as the major variables. In case of Bhubaneswar (ranked first as per the highest inclusive growth) city the highest contribution to value of CII comes from the rank of poverty followed by rank of standard of living index and rank of economic growth. On the other hand, in case of Aurangabad (ranked fifth as per the highest inclusive growth) city the highest contribution to CII comes from the rank of poverty followed by rank of unemployment and employment. In addition, Table 5 shows among the seven economic major variables the rank of poverty plays an important role to

the value of CII as it contributed most for the three cities those are ranked in top five as per the highest inclusive growth.

Table 5: Most average contributed variable in the rank of CII for Overall Categories

Sr. No.	Top five ranked cities as the highest inclusive growth	First	Second	Third
1	Bhubaneswar	Poverty	Standard of Living index	Economic growth
2	Hubli-Dharwad	Inequality	Education	Poverty
3	Nashik	Poverty	Standard of Living index	Unemployment
4	Gauhati	Economic growth	Education	Unemployment
5	Aurangabad	Poverty	Unemployment	Employment

Source: Author

One important finding of the exercise is that bigger cities (as per the population size) show lower levels of inclusive growth. For instance, none of the mega cities are among the top five, as per the ranking based on the parameters of higher inclusive growth across all the three categories. Figure 1 shows the 11 percent positive correlation between the value of CII and logarithm of city population as of 2005.

Figure 1: Relationship between Value of CII and Log of City Population in 2005

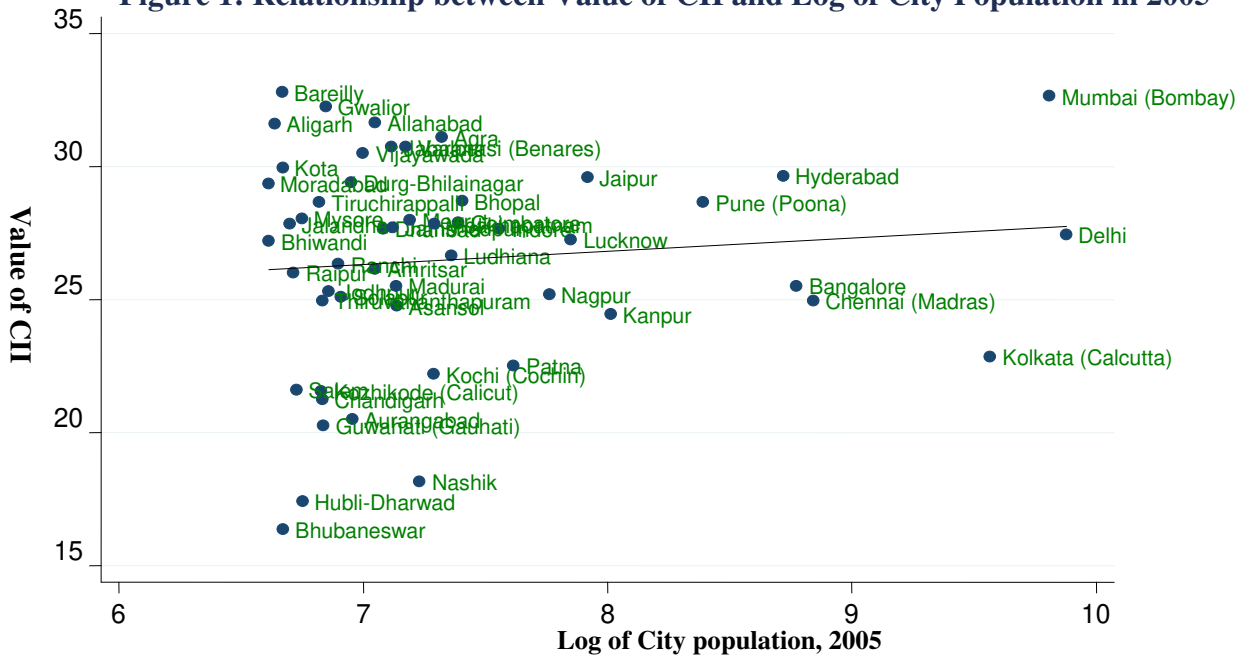
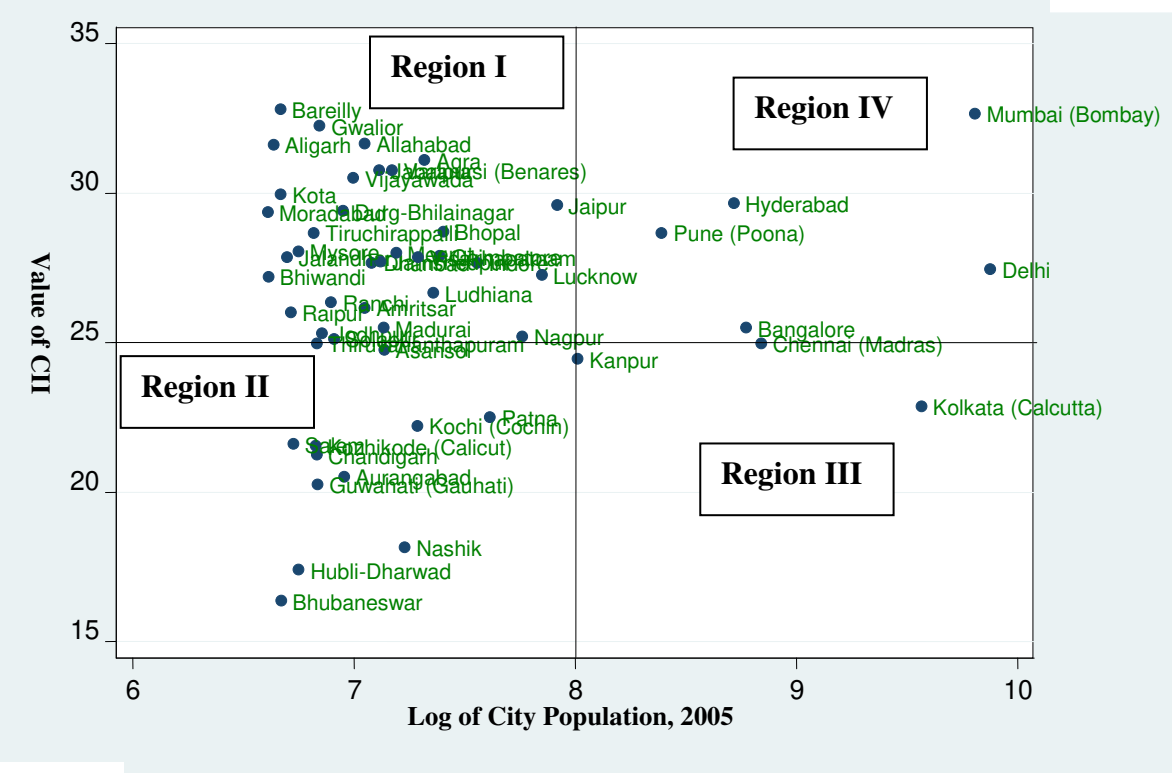


Figure 2 plots the cities in a scatter diagram and array into four basic quadrants for analytical purpose. The association between city inclusive growth and city population size is positive for the cities which are in the lower left (Region II) and upper right quadrant (Region IV) of the scatter diagrams. The correlation coefficients between city inclusive growth and city population size are 0.56 and 0.35 for this group of cities, respectively. While the relationship is negative for cities in the other two quadrants- upper left quadrant (Region I) and lower right hand quadrant (Region III). The correlation coefficients are -0.06 and -0.7 for this group of cities, respectively.

Figure 2: Relationship between Value of CII and Log of City Population in 2005



Source: Author

4.2.1 Differences in ranking by per capita economic growth and by the city inclusive index

Table 6 presents the difference in rankings by per capita city economic growth and by the CII. A negative value means that the city is better ranked by city economic growth than by the city inclusive index and vice versa. Agra, Mumbai, Pune, Visakhapatnam, and Vijayawada are ranked as top five cities as per the highest negative difference in 'overall categories'. The results indicate that these cities are better ranked by city economic growth than by city inclusive growth.

On the other hand, Chennai, Amritsar, Salem, Indore, and Aurangabad are ranked as top five cities as per the highest positive differences and indicates that these cities are better ranked by city inclusive index than by city economic growth in 'overall categories'. Most interestingly, Dhanbad, Jabalpur, Guwahati and Patna are showing no differences between the ranks are done by city economic growth and by the city inclusive index for the same categories. In addition, Pune (or Agra) is ranked as per the highest negative difference in 'marginalized' (or 'others') group. Meerut (or Amritsar) is ranked as per the highest positive difference in 'marginalized' (or 'others') group.

Table 6: Per capita income growth rank minus inclusive growth rank for 52 large cities

Categ-ories	Tip five (highest negative differences)	No (or zero) differences	Top five (highest positive differences)
Overall	1. Agra 2. Mumbai 3. Pune 4. Visakhapatnam 5. Vijayawada	1. Dhanbad 2. Jabalpur 3. Guwahati 4. Patna	1. Chennai 2. Amritsar 3. Salem 4. Indore 5. Aurangabad
Margin-alized	1. Pune 2. Mumbai 3. Ranchi 4. Bangalore 5. Kanpur Nagar	1. Allahabad 2. Gwalior 3. Hyderabad	1. Meerut 2. Chennai 3. Kota 4. Amritsar 5. Salem
Others	1. Agra 2. Tiruchirappalli 3. Kozhikode 4. Madurai 5. Mumbai	No city	1. Amritsar 2. Solapur 3. Jodhpur 4. Indore 5. Coimbatore

Source: Author

4.2.2 Spearman's rank correlation coefficient: statistical dependence between overall composite inclusive index and other variables

To quantify the relationship between the rank of cities as per the value of CII and the individual ranking of each city based on twenty variables of CII, the rank correlation coefficient is estimated. Table 7 provides the calculated correlation coefficients (Spearman) for 'marginalized', 'other', and 'overall (sum of 'marginalized' and 'other') group, separately. It transpires that the correlation coefficient between the rank of the cities as per overall composite city inclusive index (or as per the Borda ranking) with rank of cities as per self employed female,

growth of DDP, upper primary gross enrollment ratio, low (or medium or high) standard of living index are higher and positive with statistically significant, which indicates that ranking of cities as per these variables are closer the rank of cities as per the value of city - wise composite inclusive index. Therefore, if a city shows higher rank (or perform well) based on these variables, it also shows higher rank (i.e., higher inclusive growth) as per the rank of CII.

Table 7: Spearman's rank correlation coefficient

Srl. No.	Variables used to calculate over all composite inclusive index (CII)	Overall composite inclusive index (CII) rank		
		Overall	Marginalized	Other
		Spearman's rho		
1	Gini	-0.04	0.20	-0.14
2	Poverty head count ratio	0.22	0.07	0.33**
3	Poverty gap ratio	0.35**	0.19	0.4***
4	Squared poverty gap ratio	0.34**	0.23	0.45***
5	Self employed_ male	0.19	0.39***	0.07
6	Salaried employed_ Male	0.05	0.06	0.46***
7	Casual worker_Male	-0.02	0.07	0.46**
8	Unemployed_Male	0.41***	0.35**	0.17
9	Not in labour force_Male	0.18	0.31**	0.34**
10	Self employed_ female	0.52***	0.46***	0.43***
11	Salaried employed_ Female	0.09	0.11	0.3**
12	Casual worker_Female	0.34**	0.32**	-0.19
13	Unemployed_Female	0.01	0.18	0.27*
14	Not in labour force_Female	0.34**	0.37**	0.05
15	Growth of DDP	0.44***	0.36**	0.35**
16	Primary gross enrollment ratio	0.03	0.03	0.11
17	Upper primary gross enrollment ratio	0.32**	0.33**	0.45*
18	Standard of living index_Low	0.44***	0.34**	0.46***
19	Standard of living index_Medium	0.31**	0.38**	0.27*
20	Standard of living index_High	0.50***	0.45***	0.54***

Notes:

1. ****, **, and * indicate statistical significance at 1%, 5%, and 10% level, respectively.*
2. *See Table 1 for variable definition*

Source: Author

Moreover, for 'marginalized group' the correlation coefficient between the rank of the cities as per overall CII with rank of cities as per, not in labour force female, unemployed male, not in labour force male, Casual worker female, and self employed male are positive and statistically significant. On the other hand, for "other group" the correlation coefficient between the rank of the cities as per overall CII with rank of cities as per unemployed female, salaried employed male, casual worker

male, not in labour force male, salaried employed female, poverty head count ratio, poverty gap ratio, and squared poverty gap ratio are positive and statistically significant.

Table 8 provides the correlation coefficient (Spearman) between the ranking of cities as per the values of CII and each of the ranking based on seven major economic variables. The calculated results show that ranking of cities by economic growth, employment, unemployment, and standard of living index are closer to the rank of cities as per the values of city composite inclusive index for all three categories (i.e., 'marginalized', 'other', and 'overall'). The results indicate that the cities which are ranked higher in terms of higher economic growth, higher employment, lower unemployment, and standard of living index, they also ranked higher in terms of higher inclusive growth. In addition, the correlation coefficients between ranking of cities by poverty and value of CII also show that positive and statistically significant for 'overall' and 'other' groups.

Table 8: Spearman's rank correlation coefficient between rank of major variables and overall Composite Inclusive Index (CII) rank

Sr. No.	Major Economic Variables	Overall Composite Inclusive Index (CII) rank		
		Overall	SC	Others
		Spearman's rho		
1	Inequality	-0.04	0.20	-0.14
2	Economic Growth	0.44***	0.36**	0.35**
3	Poverty	0.31**	0.18	0.40***
4	Education	0.22	0.23	0.23
5	Employment	0.51***	0.61***	0.58***
6	Unemployment	0.48***	0.59***	0.41***
7	Standard of Living Index	0.49***	0.45***	0.51***

Notes:
*1. *** and ** indicate statistically significance at 1% and 5% level, respectively.*
2. See Table 1 for variable definition
Source: Author

Further, to quantify the relationship among the rank of cities as per the major economic variables, the rank correlation (Spearman) coefficient is estimated. Table 9 provides the correlation coefficient among the ranking of cities based on these seven major variables for all the three categories (i.e., 'overall', 'marginalized', and 'others'), separately.

Table 9: Spearman's rank correlation coefficient between ranks of major variables

Sr. No.	Major economic variables	Overall (i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)
1	Inequality (i)	1						
2	Economic Growth (ii)	-0.07	1					
3	Poverty (ii)	0.01	0.03	1				
4	Education (iv)	0.13	-0.10	-0.11	1			
5	Employment (v)	-0.31**	0.15	-0.06	-0.15	1		
6	Unemployment (vi)	0.08	0.07	-0.20	-0.02	0.58***	1	
7	Standard of Living Index (vii)	-0.27*	0.31**	-0.02	0.05	-0.02	-0.05	1
		Marginalized						
		(i)	**(ii)**	**(iii)**	**(iv)**	**(v)**	**(vi)**	**(vii)**
1	Inequality (i)	1						
2	Economic Growth (ii)	-0.02	1					
3	Poverty (ii)	0.08	-0.02	1				
4	Education (iv)	0.07	-0.10	-0.13	1			
5	Employment (v)	0.03	0.12	-0.15	-0.04	1		
6	Unemployment (vi)	0.09	0.04	-0.24*	0.05	0.61***	1	
7	Standard of Living Index (vii)	-0.22	0.31**	-0.19	0.05	0.02	0.06	1
		Others						
		(i)	**(ii)**	**(iii)**	**(iv)**	**(v)**	**(vi)**	**(vii)**
1	Inequality (i)	1						
2	Economic Growth (ii)	-0.12	1					
3	Poverty (ii)	-0.09	-0.04	1				
4	Education (iv)	0.15	-0.10	0.08	1			
5	Employment (v)	-0.33**	0.27*	-0.04	-0.16	1		
6	Unemployment (vi)	-0.16	0.05	-0.13	-0.15	0.57***	1	
7	Standard of Living Index (vii)	-0.23	0.31**	0.02	0.05	0.02	0.02	1

*Notes: 1. ***, **, and * indicate statistical significance at 1%, 5%, and 10% level, respectively.*
2. See Table 1 for variable definition
Source: Author

The results show that the correlation coefficients between the ranking of cities by standard of living index and economic growth, unemployment and employment are positive and significant for all the three categories (i.e., 'overall group', 'marginalized group' and 'others group'). The results indicate that if a city shows higher standard of living index (or lower level of unemployment rate), it also shows higher economic growth (or higher employment rate). The correlation coefficient between employment and economic growth is positive and significant for the 'others group'. For 'overall' and 'others' group the statistically negative significant correlation between employment and inequality indicates that if a city has higher level of inequality, it shows the lower level of employment. The correlation coefficient between unemployment rate and poverty is negative and statistically significant for 'marginalized group'. In addition, for 'overall' group the correlation coefficient between ranking of cities as per the standard of living index and inequality indicates that if a city has higher level of inequality, it shows lower level of standard of living index.

4.3 Regression Result

4.3.1 Determinants of urban poverty

Table 10 summarizes the key results from the regressions based on equation (2). Regression (1) shows the estimates of the full model which include all variables. Results of regressions (2) and (3) pertain to a parsimonious model, and exclude controls that are not found to be statistically significant or do not go with the expected sign of the regression parameters. All the regressions provide OLS results with robust standard errors (to correct heteroskedasticity) in parentheses.

Regression (2) explains 18 percent of the variation in growth rate of poverty across cities, whereas regression (3) explains 41 percent. The results in regression (2) show that growth rate of per capita MPCE (as a proxy for income growth) has a significant negative effect on growth rate of poverty, which implies that with a 10 per cent increase in growth of MPCE, growth rate of poverty comes down by almost 20 percent. Higher initial inequality (measured by Gini coefficient) and initial poverty have a negative effect on growth rate of poverty, though only the coefficient of initial urban poverty is statistically significant. In addition, interactive effect of income growth (measured by per capita DDP growth) with initial poverty shows a positive effect on growth rate of urban poverty, even though, the coefficient does not show any significant result.

Table 10: Determinants of urban poverty

	Dependent variable: CAGR of urban poverty		
	(1)	(2)	(3)
Constant	0.022	0.229	0.072
	(0.179)	(0.164)	(0.192)
Growth rate of per capita DDP (GDDP)	-0.025*		-0.038**
	(0.013)		(0.018)
Growth rate of per capita MPCE	-0.133	-0.201**	
	(0.08)	(0.08)	
Initial urban poverty	0.003	-0.008***	-0.005***
	(0.003)	(0.003)	(0.002)
Initial inequality	-0.733***	-0.382	-0.572*
	(0.218)	(0.484)	(0.294)
Initial urban poverty*DDP	-0.002***	0.001	
	(0.0005)	(0.001)	
Log of initial urban inequality*DDP	0.234***		0.178***
	(0.039)		(0.062)
Initial value of city composite inclusive index	0.0137***		0.013**
	(0.005)		(0.005)
No. of Observation	50	52	50
R^2	0.51	0.18	0.41

*Note: Figures in parentheses represent robust standard errors. ***, **, and * indicate statistical significance at 1%, 5%, and 10% level, respectively.*
Source: Estimated using equation (2).

Regression (3) presents the result of the parsimonious specification. The regression results show that higher growth rate of DDP per capita has a strong (or robust) negative effect on growth of urban poverty. The coefficient, – (0.038) indicates that with a 10 per cent increase in growth rate of DDP, growth rate of poverty declines by 0.4 per cent. Initial urban poverty remains at the same level of significance and sign condition as regression (2). However, initial inequality shows a significant (at 10 per cent level) negative effect on growth rate of urban poverty. The interactive effect of income growth (measured by per capita DDP growth) with initial inequality shows a positive effect on growth rate of urban poverty. Finally, initial higher value of composite inclusive index shows a significant and positive impact on growth rate of urban poverty, which indicates a lower level of city inclusive growth associated with higher growth of poverty.

4.3.2 Determinants of urban inequality

Table 11 summarizes the key results from the OLS regressions based on equation (3). The results in regression (4) show that higher growth of per capita MPCE significantly (at 10 per cent level) increases the growth rate of urban inequality. The coefficient (0.114) indicates that with a 10 percent increase in growth rate of per capita MPCE, growth rate of urban inequality increases by 11 percent. Though growth rate of per capita DDP shows a positive impact on growth rate of inequality, but the coefficient is not statistically significant. On the other hand, initial higher inequality significantly (at 1 per cent) reduces the growth rate of urban inequality. A 10 percent increase in initial level of inequality reduces growth rate of urban inequality by 8.4 percent. Initial higher poverty increases growth rate of poverty, though the coefficient is not statistically insignificant. However, initial overall inclusive growth of a city has a positive effect on growth of urban inequality. A 100 percent increase in initial overall inclusive growth of a city index increases growth rate of inequality by 0.2 percent. However, the coefficient is not significant. Regression (4) explains 59 percent of the variation in growth rate of inequality across cities.

Table 11: Determinants of urban inequality

	Dependent Variable: CAGR Gini Coefficient
	(4)
Constant	0.213***
	(0.056)
Growth rate of per capita DDP (GDDP)	0.319
	(0.308)
Growth rate of per capita MPCE	0.114*
	(0.057)
Initial urban poverty	0.219
	(0.655)
Initial inequality	-0.839***
	(0.128)
Initial value of city composite inclusive index	0.231
	(0.149)
No. of Observation	52
R^2	0.59

*Note: Figures in parentheses represent robust standard errors. ***, **, and * indicate statistical significance at 1%, 5%, and 10% level, respectively.*
Source: Estimated using equation (3)

4.3.3 Determinants of urban economic growth

Table 12 summarizes the key results from the OLS regressions based on equation (4). The growth rate of per capita DDP stands as a dependent variable in regression (5). The negative and significant (at 10 per cent) coefficient of growth rate of city inclusive index indicates that a 1 per cent increase in growth rate of city inclusive index (i.e., lower level of inclusive growth) reduces growth rate of income (i.e., per capita DDP) of a city by 5.4 per cent. The coefficient of initial urban poverty is negative and significant at 10 per cent. The coefficient, – (0.244) indicates that with a 10 per cent increase in initial urban poverty declines growth rate of per capita income by 24 per cent. The estimated results show that initial city inclusive index (or growth rate of urban inequality) has a negative effect on growth rate of per capita DDP, while initial inequality has a positive effect. However, the variables do not show any significant (coefficients are statistically not significant) impact on growth rate of per capita DDP. The regression explains only 15 per cent of the total variation in the dependent variable.

Table 12: Determinants of urban economic growth

	Dependent variables	
	Log of CAGR of per capita DDP	**CAGR of mean MPCE**
	(5)	(6)
Constant	3.07*	0.894**
	(1.55)	(0.396)
Initial value of city composite inclusive index	-0.231	-1.47*
	(2.69)	(0.829)
Growth rate of city inclusive index	-5.35*	-1.23
	(3.09)	(0.817)
Log of initial urban poverty	-0.244*	-0.059
	(0.131)	(0.052)
Log of initial inequality	0.812	0.232
	(0.867)	(0.16)
Growth rate of urban inequality	1.568	1.37***
	(1.32)	(0.296)
No. of Observation	50	52
R^2	0.15	0.31

*Note: Figures in parenthesis represent robust standard errors. ***, and * indicate statistical significance at 1%, and 10% level, respectively.*
Source: Estimated using equation (4)

In regression (6) we consider growth rate of per capita MPCE as dependent variable which is proxied as income growth. The results in regression (6) show that growth rate of city inclusive index and initial urban poverty has an insignificant negative effect on growth rate of per capita MPCE. The growth rate of inequality (or initial city inclusive index) has a positive (or negative) significant effect on growth rate of per capita MPCE. The result indicates that a 10 per cent increase in initial value of city composite inclusive index (i.e., lower level of city inclusive growth) reduces growth rate of per capita MPCE of a city by 15 per cent. However, initial urban inequality has a positive impact on growth rate of MPCE. The regression explains 31 per cent of the total variation in the dependent variable.

5. Conclusions and Policy implications

This paper measures the overall inclusive growth of a city by emphasizing on the changing trends from 2004-05 to 2009-10 in the twenty economic variables based on 'Borda ranking' and to find the relationship between city economic growth and overall city inclusive growth by considering 52 large cities in India.

The results suggest that that the bigger cities (as per population size) show lower level of inclusive growth. The Spearman's rank correlation coefficients show that rank of the cities as per overall composite city inclusive index (or as per the Borda ranking) with rank of poverty gap ratio, squared poverty gap ratio, number of male unemployed person, number of self employed female, number of casual female worker, growth of DDP, upper primary gross enrollment ratio and standard of living index are higher, positive and statistically significant, which indicates that ranking of cities as per these variables are closer the rank of cities as per the value of city - wise composite inclusive index. Moreover, regression results show that higher economic growth rate is associated with increase in urban inequality, reduction in urban poverty, and lower level of overall inclusive growth of a city.

The results support the recent government's strategies (or policies) for inclusive growth as economic growth is not inclusive and suggest that there need of consideration of different strategies for urban inclusive growth with consideration of the different size of cities. However, application of different methodologies and inclusion of other variables (such as, infrastructure) to measure urban inclusive growth are left for future research.

Appendix Table 1: Name of the districts used in the regression analysis

Agra (Agra)[1], Aligarh (Aligarh), Allahabad (Allahabad)[1], Amritsar (Amritsar)[1], Asansol (Barddhaman)[1], Aurangabad (Aurangabad), Bangalore (Bangalore Urban)[1], Bareilly (Bareilly), Bhiwandi (Thane), Bhopal(Bhopal)[1], Bhubaneswar (Khordha), Chandigarh*, Chennai (Chennai)[1], Coimbatore (Coimbatore)[1], Delhi*[1], Dhanbad (Dhanbad)[1], Durg-Bhilainagar (Durg), Guwahati (Kamrup), Gwalior (Gwalior), Hubli-Dharward (Dharwad), Hyderabad (Hyderabad)[1], Indore (Indore)[1], Jabalpur (Jabalpur), Jaipur (Jaipur)[1], Jalandhar (Jalandhar)[1], Jamshedpur (Purbi Singhbhum)[1], Jodhpur (Jodhpur), Kanpur (Kanpur Nagar)[1], (Kochi) (Eranakulam)[1], Kolkata (Kolkata)[1] Kota (Kota), Kozhikode (Kozhikode), Lucknow (Lucknow)[1], Ludhina (Ludhiana)[1], Madurai (Madurai)[1], Meerut (Meerut)[1], Moradabad (Moradabad), Mumbai (Mumbai)[1], Mysore (Mysore), Nagpur (Nagpur)[1], Nashik (Nashik)[1], Patna (Patna)[1], Pune (Pune)[1], Raipur (Raipur), Ranchi (Ranchi), Salem (Salem), Solapur (Solapur), Thiruvananthapuram (Thiruvananthapuram), Tiruchirappalli (Tiruchirappalli), Varanasi (Varanasi)[1], Krishna (Vijayawada)[1], Visakhapatnam (Visakhapatnam)[1]

* Delhi and Chandigarh were considered as a whole proxy of a city district.
[1] Indicates metropolitan cities.
Notes: Name in the first bracket indicates the name of the cities which is located in the corresponding district.

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