

ESTIMATING 'GROWTH ELASTICITY OF POVERTY' FOR ASIAN ECONOMIES

Naeem AKRAM* and Muhammad Irfan AKRAM**

Abstract

Over the years, poverty reduction has been recognised as the main objective of development policy. To reduce poverty, economic growth is very crucial. The responsiveness of growth towards poverty reduction is measured by the 'growth elasticity of poverty'. The present study attempts to calculate growth elasticities of poverty in nine selected Asian countries for the period 1986-2015 by using three different methodologies. The study finds that calculated elasticities have considerable variations by using different methodologies. It is suggested that the calculation of elasticity using the formula is most appropriate because it directly calculates the elasticity by using the data of poverty rate and per capita GDP. The study also finds that China has the highest growth elasticity of poverty considering the poverty line of USD 1.90 and USD 3.20 a day. It was also found that the responsiveness of growth to poverty reduction has increased during the period of 2001-2015 in comparison to the period of 1986-2000.

Keywords: Growth, Poverty, Elasticity.

JEL Classification: O15, I32, O40.

I. Introduction

Poverty reduction is among the predominant theme of the present discussions in economic development. Due to its importance eradicating poverty was the first goal in Millennium Development Goals (MDGs) concluded in 2015. In the era of Sustainable Development Goals (SDGs), poverty elimination is the top objective. Over the years, numerous factors have been identified as key to poverty reduction. The role of growth in per-capita GDP on poverty alleviation has been recognised as pivotal by many researchers and development organisations.

During the 1990s, growth was given a central role while designing any strategy aiming at poverty alleviation. It was supported by various empirical studies that had concluded that countries that grew at high growth rates could make significant

* Assistant Chief, Economic Affairs Division, Govt. of Pakistan, Islamabad, ** M.Phil Scholar, PMAS-Arid Agriculture University, Rawalpindi, Pakistan.

progress in poverty reduction [Gugerty and Roemer (1997), Fosu (2017), Dollar and Kraay (2002) and Ravallion (2001)]. World Development Report also emphasised the similar views that investment–growth–poverty causal relationship is the key to economic development [World Bank (2005)].

Although economic growth is important for poverty reduction, Fosu (2009) argued that economic growth has failed to reduce poverty in most African countries. At best, growth has triggered less than the proportional reduction in headcount poverty. Contreras (2001) and Balisacan (2000 and 2003) concluded that economic growth does indeed helpful in reducing poverty. However, countries that have substantial inter-regional economic and structural differences cannot decrease poverty solely with economic growth; growth might reduce poverty in one region but may fail in another region due to its economic structure and increasing inequalities. The growth-poverty relationship was modified after the empirical analysis and it was suggested that instead of per capita income growth, the structure of economic growth plays a more significant role in poverty alleviation [Mellor (1999) and Ravallion and Datt (1996)]. Nevertheless, the impact of different macroeconomic variables, e.g. financial development, openness to trade, investment etc., on poverty alleviation is transmitted through growth [Chenery, et al., (1974)]. Therefore, while designing an effective poverty alleviation strategy, economic growth as well as other factors must be given proper attention.

The quantitative measure to gauge the response of the poverty rate to increased income is referred to as ‘growth elasticity of poverty’ [Heltberg (2004)]. It shows the percentage change in the poverty index because of a 1 per cent increase of per-capita income. The elasticity estimation is very crucial in poverty-related discussions. Over the years, different economists have calculated the growth elasticity of poverty, and most of the early estimates reveal that elasticity is more than two [Ram (2013)].

However, the magnitude of the impact of growth on poverty is varied in different regions and at different periods. During the 1990s, growth elasticity of poverty was normally found between -2.0 to -3.0 for developing countries [Ravallion and Chen (1997) and Adams (2003)]. On the other hand, Fosu (2010) estimated that the growth elasticity of poverty was very low in African countries during the 1990s and it was between -0.02 to -0.68. Similarly, Fanta and Upadhyay (2009), using data from African countries for 2005, reported an elasticity of around -0.5. Ram (2011) calculated an extremely low value of -0.20 to -0.22 for South Asian countries by using the data of 1990-2004. It was also argued that the elasticity depends on the initial level of income and inequality [Bourguignon (2003) Ravallion and Chen (1997)]. Therefore, in African economies, elasticity is much lower than in other regions of the world [Shaohua and Ravallion (2004)]. Bhalla (2002) calculated a very high value, i.e. -5.0 of growth elasticity to poverty; however, Bhalla (2004) also calculated the mean elasticity of -3.4. Balisacan, et al., (2003) found the growth elasticity of Indonesia as -0.7; they concluded that due to low value, growth was not solely re-

sponsible for the decrease in poverty rather, infrastructure development terms of the trade regime, education and access to technology are also significant factors in reducing poverty. Arndt, et al., (2017) found that economic growth plays an important role in reducing poverty. The study found the growth elasticity of 0.47 for developing countries, 0.51 for China, 0.14 for India and 0.35 for Sub Saharan Africa for the period of 1999-2005 and further found the growth elasticity of 0.23 for developing countries, 0.23 for China, 0.13 for India and 0.53 for Sub Saharan Africa for the period 2005-2008.

Hence, there are possibilities that the growth elasticity of poverty may vary depending upon the region and selected period; therefore, in this area, further research is required to examine the relationships between growth and poverty. In the present study, growth elasticities of poverty have been calculated using three different methods; to give a comparative picture and answer to different issues associated with these methods. These elasticities are calculated using the latest WDI data; the new data estimates the poverty line of USD 1.90 and the USD 3.20 a day.

The rest of the study is structured as follows: Section II discusses the data sources and the methodological framework. Section III explains the estimation results and their discussion, whereas Section IV concludes the discussion and proposes some policy implications.

II. Data and Methodology

Historically three different approaches had been applied to estimate the growth elasticity of poverty. In the first approach, the structure of the economy is recognised as an important factor in determining the reaction of economic growth towards poverty reduction [Kakwani (2000 and 2004), Gallup and Warner (1997) and Ravallion (2004)]. By developing a theoretical model regarding growth and poverty, Loayza and Raddatz (2010) have further strengthened this strand of literature. In this approach, growth elasticity is calculated by using the logarithmic form of growth and poverty indicators. This can be written as:

$$\log(pov_t) = \alpha + \beta \log(gdp_t) + \varepsilon_t \quad (1)$$

In Equation (1), pov_t is the value of poverty indicator at t^{th} time and gdp_t is the GDP (mostly per capita GDP has been used) at t^{th} time, the calculated value of β will represent the growth elasticity of poverty.

The second strand of literature focuses on the relationship of poverty, income distribution and economic growth. This literature suggests that distributional factors play a crucial role in determining the growth elasticity of poverty. Ravallion and Happi (1991) starts this research branch by analysing the poverty and growth relationship by incorporating the role played by inequality (Gini coefficient has been used

as a proxy). According to Bourguignon (2003) poverty reduction can be decomposed into two components, i.e. growth and distributional. The study adopts the log-normal functional form of the income distribution and it found that a mechanical relationship exists between income growth and poverty. Later on, many studies have used this approach to estimate the growth elasticity of poverty [Ravallion (1997 and 2001), Epaulard (2003), Kalwij and Verschoor (2007) and Fosu (2009)]. However, Bresson (2009) found that log-normal functional form is inappropriate to estimate the growth elasticity of poverty, and elasticities estimated through this method yields rather over-estimated (exaggerated) numbers. The study has proposed the log functional form, which can be written in the following form in Equation (2):

$$\log(pov_t) = \alpha + \beta \log(gdp_t) + \gamma \log(gini_t) + \varepsilon_t \quad (2)$$

where pov_t is the value of poverty indicator at t^{th} time and gdp_t is the GDP (mostly per capita GDP has been used) at t^{th} time, the calculated value of β will represent the growth elasticity of poverty; the gini represent the value of GINI coefficient at t^{th} time.

Third and recently developing literature argues that elasticity estimation may be carried out in line with the standard elasticity concept widely used in calculation of demand, i.e. percentage change in quantity demanded divided by the percentage change in price. This procedure converts measures into unit-free proportions. Following this method, elasticity is calculated as the ratio of percentage change in poverty to the percentage change in growth [Ram (2011 and 2013)]. It can be written as:

$$\text{Poverty Growth Elasticity} = \frac{\frac{pov_t - pov_0}{pov_0}}{\frac{gdp_t - gdp_0}{gdp_0}} \quad (3)$$

In Equation 3, pov_t is the current poverty rate, pov_0 is the initial poverty rate, gdp_t is the current GDP, and gdp_0 is the initial GDP. Note that both poverty rates in the numerator are already expressed in percentage terms and are thus unit free.

The present study tries to calculate the growth elasticity of poverty by using these three methodologies. Depending upon the availability of data, 9 Asian countries, i.e. Bangladesh, India, Pakistan, Sri Lanka, China, Indonesia, Malaysia, Philippines, and Thailand, were selected. Data of poverty indicators, income inequality and per capita GDP for the period of 1986-2015 will be used.

Data on poverty indicators and per capita GDP (constant 2010 US dollar) is taken from World Development Indicators. Data of two-poverty indicators, poverty head-count ratio at \$1.90 and \$3.20; percentage of the population living on less than \$1.25 and \$2.00, respectively [International Prices (2011)]. It is important to mention that

data of poverty indicators are only available with gaps to obtain time-series data; these gaps are filled by interpolating by using the Eviews 9.0.

The data on income inequality differs in various aspects like the concept of income in the survey (expenditure or income), survey unit (household, family, household equivalent, person) and coverage of the survey (age, area, population). Data used in the study are extracted from UNU-WIDER World Income Inequality Database (WIID) version 3.4. Every possible effort is made in this study to obtain data with similar characteristics. However, the few years data were missing; this data gap was filled by using the method of interpolation.

III. Estimation Results

Table 1 provides the information regarding poverty reduction during 1986-2015 in terms of the poverty line of USD 1.90 and USD 3.20 a day for selected Asian economies. In Table 1, poverty rates are provided for 1986, 2000 and 2010, respectively. The annual rate of poverty reduction is reported for 1986-2000 and 2001-2010.

Table 1 reveals certain important facts. First, the highest poverty rate in 2015 among Asian countries for the poverty line of USD 1.90 a day is in Bangladesh, and for the poverty line of USD 3.20, a day is in India. However, in 1986 China had the highest poverty rates in both of the poverty lines. For the poverty line of USD 1.90 a day, between 1986 and 2000 highest rate of poverty decline was witnessed in Pakistan; between 2001 and 2015, China was leading in the poverty reduction of the same

TABLE 1
Poverty Profiles of Asian Countries

Countries	USD 1.90 a day					USD 3.20 a day				
	Poverty Rates			Annual Rate of Decline		Poverty Rate			Annual Rate of Decline	
	1986	2000	2015	1986-2000	2001-2015	1986	2000	2015	1986-2000	2001-2015
Bangladesh	29.53	34.80	15.60	0.35	(1.28)	74.03	72.70	54.15	(0.09)	(1.24)
India	50.38	41.00	7.14	(0.63)	(2.26)	83.48	77.35	66.07	(0.41)	(0.75)
Pakistan	62.83	26.87	3.90	(2.40)	(1.53)	88.42	70.27	34.70	(1.21)	(2.37)
Sri Lanka	12.38	8.44	1.08	(0.26)	(0.49)	44.94	37.57	11.60	(0.49)	(1.73)
China	69.87	37.37	0.70	(2.17)	(2.44)	92.90	64.77	7.00	(1.88)	(3.85)
Indonesia	71.40	39.30	7.20	(2.14)	(2.14)	92.37	79.90	33.10	(0.83)	(3.12)
Malaysia	2.37	0.40	0.01	(0.13)	(0.03)	12.77	5.29	0.20	(0.50)	(0.34)
Philippines	27.13	13.90	6.10	(0.88)	(0.52)	54.64	38.10	26.00	(1.10)	(0.81)
Thailand	15.81	2.50	0.05	(0.89)	(0.16)	40.89	18.60	0.50	(1.49)	(1.21)

Source: World Development Indicators.

poverty line. In terms of the poverty line of USD 3.20 a day, the highest rate of poverty reduction was witnessed in China during the period, i.e. 1986-2000 and 2001-2015. Compared to China and Pakistan rate of poverty reduction in India is low for both of the poverty lines and periods (where nearly 32 per cent of the world poor reside).

In Bangladesh, poverty remained stagnant between 1986 and 2000, for both of the poverty lines and for the poverty line of USD 1.90 a day annual rate of decline was lowest among selected countries. However, between 2001 and 2015, Bangladesh has shown good performance in poverty reduction and its rate of poverty decline was even higher than India.

In India, similar to Bangladesh, poverty declined in the first period, i.e. 1986-2000 was dismal. For the poverty line of USD 3.20 a day, India registered a low annual rate of decline. However, for the latter period, Indians performance improved significantly, yet it is unsatisfactory in comparison to other countries.

Pakistan, China and Indonesia have shown steady performance in poverty reduction in both of the poverty lines and both periods. These countries had very high poverty rates in 1986 as by using USD 1.90 poverty line, the poverty rate is between 63-71 per cent. Similarly, by using the poverty line of 3.20 a day, poverty was even higher in 1986 as the rates were more than 89 per cent in these countries. These countries can bring their poverty rates down quite significantly.

On the other hand, the lowest rate of poverty reduction has been witnessed in Sri Lanka, Malaysia, Philippines and Thailand; in all these countries rate of poverty reduction was below 1 per cent for the poverty line of USD 1.90 a day. In all these countries, the initial poverty was low compared to the other countries of the region. In 1986, in Malaysia, the poverty was only 2.4 per cent; in Sri Lanka, the poverty rate was 12.4; in Thailand, the poverty rate was 15.8 as in the Philippines, it was 27.1 per cent by using the poverty line of USD 1.90 a day. However, in Thailand and Sri Lanka poverty rate by using the USD 3.20 a day was high, i.e. 45 and 41 per cent respectively. In these countries rate of poverty reduction was relatively better. Unfortunately, in the case of the Philippines, although the initial rate of poverty by using USD 3.20 a day was 54.6 per cent in 1986, it was only able to bring it down to 26.0 per cent in 2015, revealing that the annual rate of poverty reduction was below 1 per cent.

From this discussion, we can infer that the lowest poverty reduction occurred in countries with lower poverty rates in the initial periods. At the initial stages, when poverty is high with the help of growth, social programs, etc., poverty reduces at a very high speed. However, after bringing poverty down to a certain level, then the rate of poverty reduction must be declined.

Table 2 provides the information about the main focus of the study, i.e. growth elasticities of poverty, using three different methodologies. It reveals that the responsiveness of the growth towards poverty reduction varies with the use of the methodology. In most cases, calculated elasticities are relatively higher if they are calculated using the regression method. In line with Ram (2011 and 2013), the present study

suggests that elasticities calculated by adopting the method of regression are too high. In these studies, the role of income growth in poverty reduction is considered substantially larger than what is reasonable.

Focusing on the poverty rate of USD 1.90 per day¹ by using the direct elasticity formula, estimated elasticity suggests that for the period 1986-2000, an increase of 1 per cent in per capita GDP will result in the reduction of poverty by 0.98 per cent. It is much lower in comparison to regression estimation without incorporating income inequality (1.88 per cent) and regression considering income inequality (1.42 per cent) and estimates of various other studies like Collier and Dollar (2001 and 2002). Similarly, for the period of 2000-2015, the calculated elasticity by using the formula is 1.40, which is lower than the other estimates of 2.74 and 2.51 by using regression without incorporating income inequality and regression incorporating income inequality, respectively. Similar patterns have been observed in the case of USD 3.20 a day poverty line.

The method of formula calculates elasticity directly by using the data of poverty rate and per capita GDP. When policymakers try to estimate how much poverty will be reduced by increasing the per capita GDP by 1 per cent, then it is inappropriate to use the regression-based methodologies that hold income inequality unchanged and

TABLE 2
Elasticity of Poverty Rate with Respect to GDP per Capita

Countries	Regression in the Absence of Income Inequality				Elasticity by using Formula				Regression with Income Inequality			
	USD 1.90 a day		USD 3.20 a day		USD 1.90 a day		USD 3.20 a day		USD 1.90 a day		USD 3.20 a day	
	1986-2000	2001-2015	1986-2000	2001-2015	1986-2000	2001-2015	1986-2000	2001-2015	1986-2000	2001-2015	1986-2000	2001-2015
Bangladesh	-1.31	-2.79	-0.74	-0.77	-0.05	-0.92	-0.26	-0.39	-1.31	-3.03	-0.71	-0.86
India	-0.36	-1.30	-0.13	-0.43	-0.23	-0.87	-0.19	-0.45	-0.41	-1.16	-0.16	-0.39
Pakistan	-2.97	-4.29	-1.57	-1.50	-2.31	-2.12	-1.00	-1.57	-2.21	-4.36	-0.81	-1.54
Sri Lanka	-0.66	-3.17	-0.32	-0.46	-0.55	-1.23	-0.25	-0.92	-0.64	-3.14	-0.32	-0.11
China	-5.17	-1.35	-1.93	-1.82	-2.79	-3.37	-1.87	-2.06	-2.27	-0.87	-1.20	-1.84
Indonesia	-0.66	-1.18	-0.25	-1.07	-0.86	-1.31	-0.30	-0.89	-0.85	-0.90	-0.27	-0.83
Malaysia	-2.08	-0.14	-0.80	-1.31	-1.11	-0.92	-0.71	-1.44	-2.13	-0.56	-0.90	-0.45
Philippines	-0.89	-3.32	-0.46	-1.85	-0.20	-0.90	-0.23	-0.53	-0.83	-3.31	-0.45	-1.83
Thailand	-2.79	-7.10	-1.44	-5.15	-0.76	-0.93	-0.52	-0.41	-2.17	-5.29	-1.08	-4.08
Average	-1.88	-2.74	-0.85	-1.60	-0.98	-1.40	-0.59	-0.96	-1.42	-2.51	-0.65	-1.33

Source: Authors' estimation.

¹ It is important to mention here that Collier and Dollar (2001) stated that poverty line of USD 2.0 a day can be probably the single most commonly cited poverty statistic.

by calculating elasticity partially leaves a certain amount of poverty unexplained. Therefore, the most appropriate way is to use the elasticity calculated by an actual change in poverty in reply to per capita GDP over a certain period.

Furthermore, suppose policymakers try to predict the reduction in poverty by using the forecasted GDP. In that case, it becomes extremely hard to calculate the elasticity using the regression method because it is extremely difficult to forecast income inequality. However, while calculating the elasticity using the formula, there is no need to predict income inequality. It is also pertinent to mention here that while using the formula the income inequality is not ignored rather, it is assumed that changes in income inequality in the future will remain the same as the period of available data of poverty and per capita GDP, meaning that rate changes in inequality remain constant.

The calculated elasticities also suggest that elasticities are to some extent biased with initial poverty rates; either we hold growth, income distribution constant or not. e.g. highest elasticity calculated are for Thailand for the period 2001-2015, yet from Table 1, we can see that initial poverty in Thailand (in 2000) was 2.50 per cent during that period. On the other side, countries with high initial poverty rates are not leading in the growth elasticities.

In a comparative sense, the study finds that considering the poverty line of USD 1.90 a day, the highest calculated elasticity for the period 1986-2000 was for China (-2.79) followed by Pakistan (-2.31) and Malaysia (-1.11). It suggests that a 1 per cent increase in per capita GDP will result in 2.8 per cent reduction in USD 1.90 a day poverty in China, a 2.3 per cent reduction in USD 1.90 a day poverty in Pakistan and 1.1 per cent reduction in USD 1.90 a day poverty in Malaysia. For the rest of the countries, calculated poverty elasticity is below -1.0. The calculated growth elasticity of poverty for India is -0.23. As far as the calculated elasticities of USD 1.90 a day for the period 2001-2015 is concerned it has been found that the highest elasticity is for China (-3.37), followed by Pakistan (-2.12) and Indonesia (-1.31). The other countries are also having relatively higher elasticities in comparison to the earlier period (1986-2000) and in all of the countries; the calculated growth elasticity of poverty is around -1.0. It suggests that the responsiveness of growth to poverty reduction has increased and during the latter period, countries have adopted more pro-poor policies.

Similarly, for the poverty line of USD 3.20 a day, it has been found that for the period 1986-2000 highest growth elasticity of the poverty is for China (-1.87), followed by Pakistan (-1.00), Malaysia (-0.71) and Thailand (-0.52). For the rest of the countries, the calculated elasticity is below -0.50. It reflects that 1 per cent increase in per capita GDP will result in reducing the poverty of (USD 3.20 a day) 1.87 per cent in China 1.0 per cent, 0.71 per cent and 0.52 per cent in Pakistan, Malaysia and Thailand, respectively. The lowest calculated growth elasticity of the poverty line of USD 3.20 a day is for India (-0.19). However, for the period of 2001-2010, the calculated growth elasticities have significantly improved. During the period China (-2.06) had the highest growth elasticity, followed by Pakistan (-1.57) and Malaysia (-1.44). The above

discussion reveals that China has shown remarkable performance in terms of poverty reduction and has among the highest growth elasticity of poverty. However, the performance of India in comparison to China and Pakistan is relatively low.

IV. Conclusion and Policy Implications

Over the years, poverty reduction has been recognised as a major objective of the development policy. Therefore, it is recognised as the first goal (top priority) in Millennium Development Goals (MDGs) as well as in Sustainable Development Goals (SDGs). Numerous factors have been considered significant in achieving the objective of poverty reduction and one of the key factors is the role of economic growth. The quantitative measure to gauge the impulsiveness of poverty in response to income is recognised as 'growth elasticity of poverty' and elasticity estimation is crucial in poverty-related discussions. The present study calculates the growth elasticities of poverty by using three different methodologies for nine Asian countries, i.e., Bangladesh, India, Pakistan, Sri Lanka, China, Indonesia, Malaysia, Philippines and Thailand, for the period 1986-2015 by using two poverty line, i.e. USD 1.90 a day and USD 3.20 a day.

Historically three different approaches can be used to calculate the growth elasticity of poverty, i.e. firstly, by using regression on the logarithmic form of growth and poverty indicators. Secondly, by using the regression on the logarithmic form of poverty, income distribution and economic growth, this literature suggests that distributional factors play a crucial role in determining the growth elasticity of poverty. Lastly, elasticity estimation using the direct formula in line with the standard elasticity concept is widely used in the calculation of demand elasticity, i.e. percentage change in quantity demanded divided by the percentage change in price.

By analysing the situation of poverty alleviation, the study finds that during 1986 among Asian countries, the highest poverty rates were in China, in both poverty lines. However, in 2010 the highest poverty rates were observed in India for both of the poverty lines. As far as the annual rate of poverty reduction is concerned, for the poverty line of USD 1.90 a day highest rate of poverty decline has been witnessed in Pakistan during 1986-2000 and in China for the period of 2000-10. In terms of the poverty line of USD 3.20 a day, the highest rate of poverty reduction has been witnessed in China for both periods. The study further reveals that the lowest poverty reduction took place in those countries that had relatively low poverty rates in the initial periods. It suggests that initially when poverty is high than with the appropriate development policies, it is easy to reduce poverty at a very high speed. It is pertinent to mention that when a country can bring poverty down to a certain level, it becomes extremely difficult to bring it further down at the same speed.

The study further finds considerable variation in the responsiveness of the growth towards poverty reduction by using different methodologies. The calculated elasticities

are on the relatively higher side if they are calculated by using the regression methods. The method of formula calculates elasticity directly by using the data of poverty rate and per capita GDP. If policymakers try to estimate how much poverty will be reduced by increasing the per capita GDP by 1 per cent. It is inappropriate to use the regression-based methodologies that hold income inequality unchanged and, by calculating elasticity, partially leaves a certain amount of poverty unexplained. In a comparative sense, the study finds that considering the poverty line of USD 1.90 a day, the highest calculated elasticity for the period 1986-2000 was for China and the lowest was for Bangladesh. Similarly, for the period 2001-15, the highest elasticity is for China. The study also finds that the responsiveness of growth to poverty reduction has increased during the period of 2001-15 in comparison to the period of 1986-2000 and it can be inferred that during the latter period, countries had adopted more pro-poor policies.

Bibliography

- Adams, R.H. Jr., 2003, Economic growth, inequality and poverty: Findings from a new data set, Policy Research Working Paper, 2972, World Bank.
- Arndt C., K. Mahrt, and C. Schimanski, 2017, On the poverty–growth elasticity, Working Paper, 149, UNU-WIDER, Finland.
- Balisacan, A.M., 2000, Growth, redistribution, and poverty: Is the Philippines an exception to the standard Asian story?, *Journal of the Asia Pacific Economy*, 5(1&2): 125–140.
- Balisacan, A.M., 2003, Poverty and inequality, in: A.M. Balisacan and H. Hill, (eds.), *The Philippine economy: Development, policies, and challenges*, New York: Oxford University Press.
- Bhalla S., 2002, Imagine there’s no country: Poverty, inequality, and growth in the era of globalisation, Institute for International Economics, Washington D.C.
- Bhalla, S., 2004, Poor results and poorer policy: A comparative analysis of estimates of global inequality and poverty, *CESifo Economic Studies*, 50: 85–132.
- Bourguignon, F., 2003, The growth elasticity of poverty reduction: Explaining heterogeneity across countries and time periods, in: Theo Eicher and Stephen Turnovsky, (eds.), *Inequality and Growth: Theory and Policy Implications*, 3–26, MIT Press.
- Bresson F., 2009, On the estimation of growth and inequality elasticities of poverty with grouped data, *Review of Income and Wealth*, 55(2): 266-302.

- Chenery, Hollis, S. Montek Ahluwalia, C. L. G. Bell, John H. Duloy, and Richard Jolly, 1974, *Redistribution with growth: Policies to improve income distribution in developing countries in the context of economic growth*, London and New York: Oxford University Press.
- Collier, P., and D. Dollar, 2001, Can the world cut poverty in half? How policy reform and effective aid can meet international development goals, *World Development*, 29: 1787-1802.
- Collier, P., and D. Dollar, 2002, Aid allocation and poverty reduction, *European Economic Review*, 46: 1475-1500.
- Contreras, D., O. Larrañaga, and J. Litchfield, 2001, Poverty and income distribution in Chile 1987–98: New evidence, *Cuadernos de Economía*, 38(114): 191–208.
- Dollar, D., and A. Kraay, 2002, Growth is good for the poor, *Journal of Economic Growth*, 7: 195–225.
- Epaulard, A., 2003, Growth, income inequality and poverty reduction in Namibia, in: *Poverty, Income Inequality and Economic Development in Namibia*, Annual Symposium, Windhoek: Bank of Namibia.
- Fanta F., and M.P. Upadhyay, 2009, Poverty reduction, economic growth and inequality in Africa, *Applied Economic Letters*, 16: 1791-1794.
- Fosu, A.K., 2009, Inequality and the impact of growth on poverty: Comparative evidence for Sub-Saharan Africa, *Journal of Development Studies*, 45(5): 726–745.
- Fosu, A.K., 2010, The effect of income distribution on the ability of growth to reduce poverty: Evidence from rural and urban African economies, *The American Journal of Economics and Sociology* 69: 1034-1053.
- Fosu, A.K., 2017, Growth, inequality, and poverty reduction in developing countries: Recent global evidence, *Research in Economics*, 71: 306–336.
- Gallup, J., S. Radelet and A. Warner, 1997, Economic growth and the income of the poor, Harvard Institute for International Development, Discussion Paper, 36.
- Gugerty, M.K., and M. Roemer, 1997, Does economic growth reduce poverty?, Harvard Institute for International Development, Discussion Paper, 5.
- Heltberg, R., 2004, The growth elasticity of poverty, in: Rolph van der Hoeven and Anthony Shorrocks, (eds.), *Growth, Inequality, and Poverty: Prospects for Pro-Poor Economic Development*, UNU–WIDER Studies in Development Economics, Oxford University Press, 81–91.
- Kakwani, N., and E. Pernia, 2000, What is pro-poor growth? *Asian Development Review*, 18(1): pp 1-16.
- Kakwani, N., S. Khandker and H.H. Son, 2004, Pro-poor growth: concepts and measurement with country case studies, International Poverty Center, Brazil, Working Paper, 1.
- Kalwij, A., and A. Verschoor, 2007, Not by growth alone: the role of the distribution of income in regional diversity in poverty reduction, *European Economic Review*, 51: 805–829.

- Loayza, N., and C. Raddatz, 2010, The composition of growth matters for poverty alleviation, *Journal of Development Economics* 93(1): 137-151.
- Mellor, J. B., 1999, The structure of growth and poverty reduction, Mimeo, World Bank, Washington, D.C.
- Ram, R., 2011, Growth elasticity of poverty: Direct estimates from recent data, *Applied Economics*, 43: 2433-2440.
- Ram, R., 2013, Income elasticity of poverty in developing countries: updated estimates from new data, *Applied Economics Letters*, 20(6): 554-558, DOI: 10.1080/13504851.2012.718053.
- Ravallion, M., 1997, Can high-inequality developing countries escape absolute poverty?, Policy Research Working Paper, 1775, World Bank.
- Ravallion, M., 2001, Growth, inequality and poverty: Looking beyond averages, *World Development*, 29: 1803-1815.
- Ravallion, M., 2004, Pro-poor growth: A primer, Policy Research Working Paper, 3242, World Bank.
- Ravallion, M., 2005, Inequality is bad for the poor, Policy Research Working Paper, 3677, World Bank, Washington D.C.
- Ravallion, M., and S. Chen, 1997, What can new survey data tell us about recent changes in distribution and poverty?, *World Bank Economic Review*, 11: 357-382.
- Ravallion, M., and G. Datt, 1996, How important to India's poor is the sectoral composition of economic growth?, *World Bank Economic Review*, 10: 1-25.
- Ravallion, M., and S. Chen, 2001, Measuring pro-poor growth, Policy Research Working Paper, 2666, World Bank, Washington D.C.
- Ravallion, M., and M. Huppi, 1991, Measuring changes in poverty: A methodological case study of Indonesia during an adjustment period, *The World Bank Economic Review*, 5(1).
- Shaohua, C., and M. Ravallion, 2004, How have the world's poorest fared since the early 1980s?, *World Bank Research Observer*, 19(2): 141-169.
- World Bank, 2005, A better investment climate for everyone, World Development Report, Oxford University Press.