A Survey on Growth and Inequality: Does Improved Inequality Data Have Anything to Say?

Arief Anshory Yusuf

Department of Economics, Padjadjaran University

October, 2005
A Survey on Growth and Inequality:
Does Improved Inequality Data Have Anything to Say?

Arief Anshory Yusuf
Department of Economics, Padjadjaran University

Abstract

Theories on the relationship between inequality and economic growth can be divided into two strands of paradigm, i.e. those which predict tradeoff between growth and equity, and those which predict no tradeoff. The consensus of empirical literature in 1980s until mid 1990s suggest there need be no conflict between fast growth and distribution. Empirical works in that era, however, were subject to criticism over the reliability of inequality data. The availability and accessibility of more improved income inequality data after the publication of Deininger and Squire’s (1996) had motivated more empirical works on the relationship between growth and inequality and had also made possible the use of relatively advanced econometric methods. Recent empirical literature following this publication of new dataset, however, do not provide strong support for whether growth and inequality are negatively or positively associated. It mainly suggest no overall relation between growth and inequality. There is little indication, however, that in the context of developing countries, the tradeoff may be resolved.

JEL Code: O4
Keywords: Growth, Inequality

1. Introduction: Ravi Kanbur’s Prophecy

Kanbur (1998) provides one of the most comprehensive discussion of the development of thinking about growth and inequality. He observed that the literature on this issue may be divided into four distinct phases. The first is the period from the 1940s to 1950s when growth and industrialization was considered the key to poverty reduction, with less attention to its distributional consequences. In the second phase (from the mid 1950s to the mid 1970s), the emphasis were on the possible conflicts between growth and distribution, and the need for intervention to balance this tradeoff. The third phase (from the mid 1970s to the early 1990s), led to the currently dominant consensus that if policy can be engineered appropriately, there need be no conflict between fast growth and distribution.

Kanbur (1998) continued to predict that the fourth phase of the literature, was about to begin. He predicted that in the coming decade (I assume what he means is the end of 1990s
until 2000s), analysts and policymakers will rediscover the possibility of the conflicts and tradeoffs highlighted in the 1950s and 1960s. This ‘prophecy’ had motivated this essay, because his survey was based on the literature published prior to 1997 – publication year of his paper in the *Handbook of Income and Distribution* – and another one decade after his publication has already been close to end. In this essay, then, I will attempt to review some relevant empirical literature published after 1997 in order to, ‘informally’ test his prophecy. The studies covered in this essay include Deininger and Squire (1998), Barro (2000), Chang and Ram (2000), Forbes (2000), Banerjee and Duflo (2003), Lunberg and Squire (2003), and Bleaney and Nishiyama (2004). As Kanbur (1998) also predicted that cross-country studies will be no longer popular in the coming two decades, the presence of these studies, which as I will discussed later are basically cross-country studies, is a first challenge to his predictions.

This essay will be organized as follow. Section 1 discuss the motivation of this essay, section 2 briefly review theoretical ideas about how the relationship between inequality and economic growth works, section 3 will review each of the recent studies mentioned earlier, section 4 will provide general discussion of those papers, and finally section 5 conclude this essay.

### 2. Growth and inequality: Theoretical linkages

Theories on the relationship between inequality and economic growth can be divided into two strands of paradigm. First is those which argue that there is positive association between inequality and economic growth. This relationship suggest that there exist a tradeoff between growth and equity. Hence, I will call this strands of paradigm, throughout this paper, as “tradeoff hypothesis”. At the other extreme, other school of thought suggests that inequality is bad for economic growth. It is possible, that higher economic growth is associated with improving equity. I will call this “no-tradeoff hypothesis”. In addition to
these two opposing school of thoughts, I will also discuss another somewhat different, but highly relevant strand of thought in the literature, i.e. the relationship between level of income (not economic growth) and inequality.

2.1. Tradeoff Hypothesis: Inequality is good for growth

One of the most popular argument predicting that increasing inequality will be associated with higher growth is those based on standard saving-growth argument. It starts from the standard hypothesis that individual saving rates rise with the level of income. As the redistribution of resources from rich to poor tends to lower the aggregate rate of saving in an economy, then capital accumulation will slow down along with economic growth. A rise in inequality hence, tends to raise investment, and economic growth. I may call this as capital fundamentalism argument.

Secondly, Gilles Saint Paul and Thierry Verdier (1993), in a political economy type of analytical framework, suggests that in more unequal societies, the median voter (the majority) will elect a higher rate of taxation. This political process will dictate the government to finance public education. Human capital accumulation will be higher, as well as economic growth. This political economy argument supporting tradeoff between growth and equity.

Thirdly, Benabou (1996), in a model which based on heterogeneous individuals shows that if the degree of complementarities between individuals’ human capital is sufficiently strong, then segregated and more unequal societies will be associated with higher rates of growth. This human complementarities argument supports the tradeoff between growth and equity.

Fourthly, technological progress argument suggest that periods of major technological inventions will be associated with increasing inequality, because it involves the concentration of high ability workers in technologically advanced sectors. In this setting, this
high skilled worker generate higher rates of technological progress and economic growth accordingly. Inequality is associated with higher economic growth.

2.2. No-Tradeoff hypothesis: Inequality is bad for growth

In a model of credit market imperfection, the limited ability to borrow implies that rates of return on investment opportunities are not necessarily equated at the margin. When credit market is not clear, poor households tend to forego human-capital investments that offer relatively high rates of return. Redistribution of assets and incomes from rich to poor tends to raise the quantity and average productivity of investment. A reduction in inequality, then may raises the rate of economic growth (Galor and Zeira, 1993, and Piketty, 1997).

Secondly, another political economy argument suggest that in a system of majority voting, inequality – represented by large difference in the median income to the mean income – will lead to higher economic growth, because voting will favor redistribution from the rich to the poor. These redistributions, transfer payments and the associated tax finance will distort economic decisions, and economic growth declines (Perotti , 1993, Bertola, 1993, Alesina and Rodrik, 1994).

Thirdly, socio-political unrest argument suggest that since chronic income inequality motivates the poor to engage in crime, riots, and other disruptive activities, the instability of political institutions, the disruption of laws and other rules, greater uncertainty, and violation of property rights. These are not friendly for investment. Lower economic growth will go along with worsening inequality (Alesina and Perotti, 1996).

2.3. Kuznets Curve Hypothesis

Kuznets curve hypothesis is the oldest line of argument in the literature on the relationship between inequality and economic development. It simply predict an “inverted U
hypothesis”, in which inequality first increases and then decreases as per capita income rises. This theory could not be separated with ‘labor-surplus model of Nobel laureates Lewis (1954) which argued that inequality would initially increase, as labor started to move from the low income traditional sector to the high income modern sector. Once the surplus labor phase ends, increases in per capita income will continue, but with narrowing inequality.

Related to Lewis (1954), Kuznetss (1955) focused more on intersect oral shifts of population as a defining characteristic of the development process. He argued that other conditions being equal, the increasing share of urban population results in increasing share for the more unequal of the two component distributions. Furthermore, the relative difference in per capita income between the rural and urban populations does not necessarily drift downward in the process of economic growth, but it will be stable, and tends to widen because urban per capita productivity increases more rapidly than in agriculture. Inequality in the total income distribution should increase. However, eventually population shifts on its own would tend to decrease inequality, and various policy measures and interventions would begin to reduce inter-sectoral and intra-sectoral inequality. Relationship between income per capita and inequality then follow “inverted U”. Kuznetss’ idea was formalized by Robinson (1976) and Fields (1980) and Anand and Kanbur (1993).

3. Recent Empirics on the relationship between growth and inequality

The empirical studies prior to the year 1996 was mainly constrained by data quality on income distribution which is very crucial in the analysis of the relationship between growth and inequality. Therefore, the conclusion from most econometric works in the literature in 1980’s and 1990’s which mainly support the negative association between inequality and growth (no tradeoff hypothesis) had been criticized mainly over this data issues (Kanbur, 1998). Inequality data is very likely to be subject to measurement error
problem (which will lead to bias estimates) because it is very difficult to expect good income inequality data especially from developing countries. Forbes (2000), for example, warned that more unequal countries tend to under-report their inequality statistics. If they also tend to grow more slowly than other with lower level of inequality, negative bias in cross-country estimates of the impact of inequality on growth is very likely. Skepticism over the validity of these data, possibly, become one of the reasons of why Kanbur (1998) predict that

Cross-country econometric analysis in 1980s an 1990s, which disregard the intrinsically inter-temporal relationship had also been subject of criticism. However, economic analysis beyond cross-sections type of econometric work was not possible, due to availability of inter-temporal data.

The year 1996, then become an important milestone in the development of the literature owing to the painstaking collection and publication of income inequality data by Deininger and Squire (1996). The availability of this dataset not only ease the skepticism over econometric studies due to low quality data problem, but make possible the analysis that may capture the time dimension of the relationship between growth and inequality.

According to Deininger and Squire (1996), good inequality data must, at least be based on household surveys, rather than estimates drawn from national accounts statistics, must have comprehensive coverage of all sources of income or uses of expenditure, and must be representative of the population at the national level. This ‘rule’ as we will see in the later sections, was taken seriously by all of the later econometric studies. Deininger and Squire’s (1996) dataset has been used almost all empirical studies since 1996.

The availability and accessibility of this data set and the development of more advanced econometric methods such as the panel data analysis were the main motivation of recent empirical works, as we will discuss below.

In this study, growth is specified to be a function of inequality (measured by inequality in income using Gini coefficient, and asset inequality, using land Gini) investment, initial income, inequality, and some regional dummies. It is argued that assets distribution may have more systematic effect on growth than income distribution, because it better represent the extent of access restriction to credit markets and thus the ability to finance productive, but indivisible investments.

Using high quality standard\(^1\) of income inequality data from Deininger and Squire’s (1996) database, which covers the period from 1960 to 1992, and using land Gini from FAO database. This analysis is simply cross-section\(^2\), and the growth equation was estimated using OLS method. It was found that the coefficient of income inequality is negative and significant but becomes highly insignificant when regional dummy variables are included. Inequality may reduce economic growth but the association is not strong and is not robust. By contrast, using initial inequality of assets, as proxied by the distribution of land, asset inequality was found to have negative significant effect on subsequent growth both in the overall sample and for developing countries separately. Hence, asset inequality is associated with lower economic growth. It was argued that asset or land inequality was better in mimicking the theory of credit market imperfection. Overall conclusion of this study, then, support the no-tradeoff hypothesis. Improving distribution of assets will lead to more rapid economic growth.

The use of asset inequality, rather than only income inequality was the first main strength of this study. In addition to that, this study could also considered as the first empirical works that use ‘improved income inequality data. In addition to growth equation,

---

\(^1\) High quality standard mean following the three requirement as discussed previously. Following these criteria, 87 observations was obtained for income inequality and 65 observation was available to be used using land Gini

\(^2\) Gini coefficient of the income distribution is for the year whenever high-quality observations are available during the whole period under concern. They argues that this approach is justified because income inequality did not change much over time.
this study also find evidence of Kuznetss curve by estimating Gini coefficient as a function of income, inverse of income, and regional dummies, but the results are not robust if simple cross-country analysis was used. However, when fixed effect panel data which did not ignore the inter-temporal variation in individual countries, the result strongly reject the evidence of Kuznets curve. At the end Deininger and Squire’s (1996) stressed that using cross-sectional evidence to make inferences about inter-temporal variation in individual countries is invalid, at least for the countries and time periods considered in their paper.

3.2. Barro (2000)

Barro (2000) specified growth as a function of income inequality (measured by Gini coefficient), income, government consumption, rule of law, democracy, inflation, and investment. He allows coefficient of Gini to be different for poor and rich countries and estimated the growth equation using random-effect panel data analysis for 84 countries and 4 different periods (1960, 1970, 1980, 1990). Gini coefficient used are from D&S (1996) with little additional extension. The result suggest that, the negative effect of inequality on growth shows up for poor countries but that the relationship for rich countries is positive. In particular, the effect of inequality is negative for income per capita less than $2,070 and then become positive. However, when overall sample is used effects of inequality on growth and investment are weak no overall relationship between growth and inequality. Interestingly if fertility is omitted, coefficient of income inequality becomes negative, a result which was similar studies in late 1980s and mid 1990s. This, strongly, suggest that, again, previous similar studies may incorrectly specified the growth equation.

---

3 Barro add observation excluded because of failure to identify proper source but still based on representative sample.
Barro (2000) explained his result by suggesting the possibility that credit market constraint prevalent more in poor countries compared to in rich countries. In short, Barro’s (2000) study, although do not provide evidence of tradeoff between growth and equity in poor countries. Reducing inequality in poor countries is good for economic growth. Barro (2000) also found robust and strong evidence of quadratic relationship between inequality and income with turning point of around $1,636.

Despite its rigorous and careful analysis, some of his approach may be questionable. First, in order to add more observations – as required for panel data analysis, Barro compromise the inaccuracy of data by allowing some Gini coefficient from unclear sources to be included. Moreover, data of income share was also roughly adjusted to make it into the Gini coefficient. Hence, the data do not necessarily pass the standard criterion stated in Deininger and Squire’s (1996). In addition to that, despite the advantage of random effect estimation of Growth regression i.e. allow the error term to be correlated overtime within country, Barro (2000) does not provide clear explanation or defend his use of random effect method. Random effect assume that idiosyncratic error to be uncorrelated with unobserved country-heterogeneity, and clear ground and plausibility of this assumption is usually mentioned or formally tested. Another drawback of his analysis is Barro (2000) ignore the potential endogeneity of inequality in growth regression, another issue that is interestingly taken seriously by Lunberg and Squire (2003).

3.3. Chang and Ram (2000)

---

4 Barro (2000) also conducted sensitivity analysis by using quintile share instead of Gini in his estimation, but he found that his result is robust.
5 Barro (2000) estimated Gini coefficient as a function of log of income, the square of log of income, and some other variables that control for data types, schooling, regional dummies, rule of law, democracy, and openness. He used Seemingly Unrelated Regression and fixed effect panel data regression
6 For example using Hausman test.
Chang and Ram (2000) specified the problem differently by estimating inequality as a function of income, income squared, and economic growth. He also use interaction term of dummy variable indicating high and low growth in income to test whether Kuznets curve parameter are different form high and low growth countries. Using data from “high quality” part of Deininger and Squire’s (1996), they estimated the equation in a simple cross-country context using OLS (with Gini coefficient of around the year 1985\(^7\)).

Chang and Ram (2000) claimed that their result support the Kuznets curve hypothesis in both groups although the income term is only marginally significant, and further suggests that Kuznets curve of higher growth countries is below that of lower growth countries. Across all income level, inequality is lower for higher growth countries, hence their conclusion do not indicate a trade-off between equality and growth.

Compared to the other papers discussed in this essay, this study fairly simple and their conclusion is not based on strong finding. The statistical significance of the interacting term in equality regression which indicates that Kuznets curve for both groups are different is very low, and they can only defend it by their joint significance (even they are only jointly significant marginally for 10\% level). Criteria to determine which countries belong to category of low and high growth is also simply arbitrary\(^8\), and exclude countries with moderate growth. This is possible to create non-random or endogenous sample selection bias.


This paper may be one of the few that explicitly challenge the consensus concluded by Kanbur (1998) i.e. inequality is detrimental to growth (no tradeoff hypothesis). In turn Forbes (2000) analysis actually support Kanbur’s prediction of the return of the tradeoff between growth and equity.

\(^7\) To take as far as possible inequality variable.
\(^8\) They divided the observation into three roughly equal part and used only the highest and the lowest part.
Forbes (2000), together with Barro (2000), is one of the first few attempts to analyze the relationship between growth and inequality using panel data. In his model, Forbes (2000) specified growth as a function of income, inequality, education, and market distortion. Using Gini coefficient from Deininger and Squire’s (1996) database with coverage of 1966 to 1995, Forbes estimated the growth equation with some advanced econometric techniques i.e. panel data fixed effect, random effect, chamberlain $\pi$-matrix, and Arrelano and Bond GMM estimation. Forbes (2000) concludes after a series of statistical tests that Arrelano and Bond is the best estimation technique because not only it controls for unobserved heterogeneity but also endogeneity in explanatory variables.

The result suggests that in short and medium term, an increase in a country’s level of income inequality has a significant positive relationship with subsequent economic growth. Forbes (2000) conducted an exhaustive series of sensitivity analysis ending with a conclusion that the result is robust across sample, variable definitions, and model specifications. No matter estimation techniques is used, the coefficient of inequality is never negative.

However, despite its exhaustive statistical analysis, the result is not consistent when longer span of data is used. When ten-years interval panel is used, for example, although the coefficient of inequality remain positive, it decrease substantially in magnitude and become insignificant. Interestingly, the relationship is not robust when the analysis is applied to very poor countries. Hence, although final conclusion support the tradeoff hypothesis, he still left the room for no-tradeoff between growth and equity for poor countries. Forbes (2000) do not strongly challenge Barro’s (2000) conclusion.

### 3.5. Banerjee and Duflo (2003)

---

9 Random Effect assumption was formally tested and rejected.
The objectives of this paper is more methodological i.e. to investigate the validity of linear relationship that have been used in the literature on the relationship between inequality and economic growth. Using dataset from Deininger and Squire’s (1996), Banerjee and Duflo (2003) scrutinized the existence of non-linear relationship between growth and equality, mostly applying non-parametric approaches. They found that changes in inequality are associated with lower future growth. They stressed that lower future economic growth can be caused by either increase or decrease in inequality. The relationship between the two is not simply linear and not monotonic. This result implies that we could not conclude whether higher inequality lead to higher or lower growth, hence their data has little to say on the fundamental question of whether inequality is bad for growth. Assuming linearity in the relationship between growth and inequality, as imposed by almost all studies in the literature, is possible to mislead conclusion.


Lunberg and Squire (2003) specified growth equation to be a function of Gini coefficient, and some other standard control variables\(^1\). However, they allow both growth and Gini coefficient to be endogenous\(^2\). Using data from acceptable set of Deininger and Squire’s (1996) with a few additional extension\(^3\), they estimated both structural equations, and reduced form equations, utilizing some more recent and advanced econometric techniques i.e. Pooled OLS with seemingly unrelated regression, fixed effect panel data, and

---

\(^1\) They are education, government saving, ratio of M2 to GDP, inflation, openness, term of trade changes, civil liberties, land Gini, initial income and dummy for 1980s, and 1990s.

\(^2\) Gini coefficient is also specified as a function of growth, education, M2/GDP, civil liberties and land Gini.

\(^3\) It may be noted, however, that Lunberg and Squire (2003) does not explicitly specify whether his extension to acceptable Deininger and Squire’s (1996) data set still follow the standard criteria for high quality data and some Gini index is also adjusted in such a way to the level it would be, were it calculated on and individual-weighted, expenditure basis.
Instrumental variables (3SLS), and Keane Runkle (KR) 3SLS\textsuperscript{13}. The last method turn out to the best estimation method.

They found that inequality may increase growth, and growth may increase inequality. However, the association is either marginally significant or only by negligible magnitude. Hence it does not really provide strong support of tradeoff between growth and equity. More importantly, their result provide a caution that independent analysis of growth and inequality ignoring the simultaneity between growth and inequality may produces potentially misleading, or incomplete result for the policy maker. By estimating the reduced form equation, they can also suggest that some exogenous variables i.e. exchange rate, trade policies and civil liberty involve trade-offs between growth and distribution, whereas schooling and land distribution are complementary. This is important because it gives policy makers some options to resolve the tradeoff between growth and inequality.

The main strength of this study is the way it allow s the possibility that growth and inequality may not be mutually exclusive, hence we can seek for potential policies that may advance both higher growth and more equal distribution. The endogeneity problem is plausible because the evolution of growth and inequality must surely be the outcome of similar processes, both variables are likely to be endogenous and affecting each others.


In his short paper, Bleaney and Nishiyama (2004) basically challenge Baro’s (2000) result which suggest that the relationship between growth and inequality varies according to different level of development. Using inequality data from World Income Inequality Database (which covers also data from Deininger and Squire’s, 1996), they used three

\textsuperscript{13} Pooled OLS with SURE is their first attempt to control for endogeneity. Fixed effect panel data is to control for unobserved country effects but assuming strict exogeneity. Instrumental variables (3SLS) is to control unobserved country effects. Keane Runkle (KR) 3SLS which is based on a sort forward filtering transformation.
different growth function specification which relate economic growth to many variables\textsuperscript{14} including income inequality. They estimated the models using simple OLS in cross-country context, and allows coefficient of Gini to differ according to the level of per capita GDP.

The result shows that the estimated coefficients of initial income inequality are extremely similar for rich and poor countries in all models. The coefficient of income inequality, although vary considerably between models, are never significantly negative. Their general conclusions are robust to different model specification and also robust to differing sub-sample. This result which says that the relationship between growth and inequality is not different for rich and poor countries is a serious challenge to Baro’s (2000) conclusion. However, although both Bleaney and Nishiyama (2004) and Barro (2000) more or less use the same data, and using standard model, the period coverage is different. Therefore we can at best says that both studies are not robust if different time coverage is used. In the general context of this essay, the result that coefficient of income inequality in growth regression are never significantly negative imply that the hypothesis of negative relationship between growth and inequality (no-tradeoff hypothesis) is not supported by this study.

\section*{4. Discussion: A challenge to Kanbur’s prophecy}

The most obvious similarity of the studies discussed in the previous section is the use of the same dataset i.e. Deininger and Squire’s (1996). Therefore they all have similar claim that their analysis, compared to the literature prior to the publication of this dataset is less vulnerable to measurement error problems. In addition to that, as we have seen from previous discussion, the presence of this dataset has also made possible panel data estimation technique that may reduce the bias from unobserved heterogeneity.

\textsuperscript{14} They include initial Gini, initial income, openness, life expectancy, government saving, climate, institution, primary product export, democracy, schooling, term of trade growth, and land-lockedness.
Some of those studies, i.e. Barro (2000), Forbes (2000), and Lunberg and Squire (2003), exploit relatively advanced econometric analysis, that was made possible by the presence of dataset from Deininger and Squire’s (1996). These advanced econometric analysis had overcome some of the main problem encountered in empirical analysis prior to 1996. Omitted variable bias from the exclusion of such factor as degree of capitalism, support for entrepreneurship, labor market flexibility may be overcome by panel data analysis because they may be treated as time-invariant country-specific variable. The longitudinal nature of panel data also made possible to directly address the important policy question such as how a change in a country’s level of inequality will affect growth within that country. Simple single period, cross-country analysis only shows long-term impact. Cross-country analysis, where data were average across times may also be problematic because it often force the country average for each value to be calculated over different periods. If variables are measured only once of a few times in the sample period, these average values of may refer to entirely different sub-periods. If country characteristics or institutions change and these changes have an impact on growth or equality within the sample period, a purely cross sectional model will miss them.

However, panel data analysis is not the cure to everything. Fixed effect technique for example will miss important picture in a situation when inequality varies much more across countries than over time, and the characteristics of this variance cannot be examined by techniques that eliminate cross-country effect and focus exclusively on the within-country relationship. Fixed effect may also exacerbates measurement error.

Deininger and Squire’s (1996) requirement for the acceptable dataset that was taken seriously by almost all empirical works. This requirement typically reduced 2600 observations to only a dataset of around of 700 observations. None of the empirical studies, however, take this as a source of endogenous sample selection bias. Bad quality data is very
likely to be correlated with level of development, hence, the probability to be included in the sample is endogenous and most possibly correlated with many factors that affect economic growth. One way to handle this problem is by using heckman procedure, but none of the studies discussed above incorporate this issues.

Table 1. Summary of recent empirical studies on growth and inequality

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Deininger and Squire’s (1998)</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Credit market imperfection</td>
<td>Use asset inequality not income.</td>
</tr>
<tr>
<td>Barro (2000)</td>
<td>Yes in rich countries</td>
<td>Yes in poor countries</td>
<td>Yes</td>
<td>Credit market imperfection</td>
<td></td>
</tr>
<tr>
<td>Chang and Ram (2000)</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Lewis-Kuznet hypothesis</td>
<td>Statistically, weak.</td>
</tr>
<tr>
<td>Forbes (2000)</td>
<td>Yes, but not robust for poor countries</td>
<td>No</td>
<td>Not discussed</td>
<td>Tradeoff hypothesis</td>
<td></td>
</tr>
<tr>
<td>Banerjee and Duflo (2003)</td>
<td>No</td>
<td>No</td>
<td>Not discussed</td>
<td>Political economy argument</td>
<td></td>
</tr>
<tr>
<td>Lunberg and Squire (2003)</td>
<td>No</td>
<td>No</td>
<td>Not discussed</td>
<td>Not much discussed</td>
<td></td>
</tr>
<tr>
<td>Bleaney and Nishiyama (2004)</td>
<td>No</td>
<td>No</td>
<td>Not discussed</td>
<td>Not much discussed</td>
<td></td>
</tr>
</tbody>
</table>

Table 1 present the summary of the previous section which are relevant to whether or not tradeoff or no-tradeoff hypothesis has been supported. It can be seen that the tradeoff hypothesis that predict inequality will be associated with higher economic growth is not supported by recent empirical literature. Barro’s (2000) study may support this hypothesis but it is only applicable to rich countries. His result actually suggest the opposite relationship for poor countries. Forbes (2000) is the strongest support for trade-off hypothesis, but as also admitted in his paper, his conclusion is not robust in poor countries. This general conclusion, then, challenge the prophecy introduced by Kanbur (1998) as discussed in the introduction of
this essay in which he predicted that analysts would rediscover the tradeoff between growth and equity, as had been a consensus in 1950s and 1960s.

On the other hand, although most of the literature do not necessarily support the other extreme of the hypothesis, the no-tradeoff hypothesis seems to have a little more empirical supports, especially if we put it into the developing countries context. Growth seems to be friendly for equity, especially for developing countries. Barro (2000) support the no-tradeoff hypothesis in poor countries, and the robust result of tradeoff hypothesis of Forbes (2000) was not applicable in poor countries. Some people will also argue that the issue over the relationship between growth and inequality is more relevant in developing countries rather than in rich countries. Rich countries have already the options to redistribute their income, but poor countries are still struggling to earn their own. When their effort to accelerate their growth do not have to cost them deteriorating income distribution, developing countries will focus on the growth-enhancing policy with much greater confidence.

In general however, the summary of those recent empirical literature do not “strongly” support both hypothesis. It mainly suggest no overall relation between growth and inequality. Barro (2000) relates this ambiguity by suggesting the possibility that the various theoretical effect of inequality on growth are nearly fully offsetting. Hence, it may be the case that trade-off hypothesis and no-tradeoff hypothesis exist at the same time. Banerjee and Duflo (2003), on the other hand, speculate different answer to this irregularity i.e. the possibility that the relationship between growth an inequality is not monotonic and not linear. Most importantly, the availability of much improved inequality dataset, although, had attracted more empirical work over this issue, at the end did not find consensus with clear direction of which hypothesis (tradeoff or no-tradeoff) has more empirical support.

5. Conclusion
The availability and accessibility of income inequality data after the publication of Deininger and Squire’s (1996) had motivated more empirical works on the relationship between growth and inequality. It had also made possible the use of more advanced econometric methods such as the panel data analysis.

In general, recent empirical literature on the relationship between growth and inequality do not provide support for both tradeoff hypothesis (positive association between growth and inequality) and no-tradeoff hypothesis (negative association between). Hence, basically it had not yet strongly changed the consensus made in 1980s and early 1990s that there need not be a tradeoff between growth and equity, as predicted by Kanbur (1998). However, there is some indication of empirical support of positive association between growth and inequality (no-tradeoff between growth and equity), particularly in the context of developing countries.

The policy implications of the conclusion of these recent empirical literature is unclear. At best, it can be used as a justification to pursue growth-enhancing policy, letting distribution issue at the background, given that empirical support of tradeoff hypothesis is not that strong. In term of future researches, the ambiguous conclusion of many empirical works ignited by the improved inequality dataset, may discourage similar studies. We then may come back to Kanbur (1998) prediction, that in the future less effort will be devoted to similar studies.

References
References


How does income inequality differ from consumption inequality? Global income inequality. Why is income inequality changing? Top income inequality is measured as the share of total income that goes to the income earners at the very top of the distribution. Usually the top 1%. Historical top income inequality estimates are reconstructed from income tax records, and for many countries these estimates give us insights into the evolution of inequality over more than 100 years. Crucially, the PovcalNet data relies on consumption surveys for some countries and income surveys for other countries. As we point out above, this is problematic. Notwithstanding these limitations, it is interesting to consider the world map of economic inequality. It said questions regarding conflict between growth and inequality become more pertinent especially because of the inevitable focus on inequality following the COVID-19 pandemic. An Oxfam report had showed Indian billionaires increased their wealth by 35% during the lockdown at a time when a quarter of the country was earning less than ₹3,000 per month. Last year’s Survey had pushed for ethical wealth creation as the way forward for India’s economic development, but this year’s Survey considers the criticism that inequality is inherent in such a model. It refutes the argument put forward in many advanced economies regarding the trade-off between growth and inequality alleviation. The Survey also asks the provocative question, is perfect equality optimal? Web survey powered by SurveyMonkey.com. Create your own online survey now with SurveyMonkey’s expert certified FREE templates. You think gender inequality exists in the workplace? Yes. No. Have you ever experienced gender inequality/gender discrimination? Yes. No. If ‘Yes’, where was it? An Interview. School. Your working environment. Other (please specify). From? Boss. Colleague. Teacher. Customer/Client. Prefer not to say. Do you feel you have ever been turned down from a job because of your gender? Yes. No.